109 年度第十屆第 1 次會員大會暨第 51 次學術演講會　目錄

理事長歡迎詞

第九屆理事長張宏江醫師

各位親愛的男性學醫學會會員大家好：

本會因 COVID-19 疫情影響年會之舉辦，延期至 2020 年 6 月 27 日(星期六)假台北市張榮發基金會國際會議中心，舉辦本會「109 年度第十屆第 1 次會員大會暨第 51 次學術演講會」。

本次大會由台灣大學醫學院附設醫院泌尿部負責主辦，感謝秘書處及理監事共同協助規劃議題，戴槐青秘書長與張奕凱財務長全力籌備各項會前工作。年會議題除了性功能與男性不孕，還有女性性功能、攝護腺癌、陰莖手術、變性手術、法律議題、感染議題。會議期間考量防疫要求，原定之一天半會期，濃縮為一天，但內容幾乎未減。本次會議的議題深度應該有國際性會議之架構了，也可以為 2021 年 APSSM 在台灣舉行暖身。

今年 TAA 年會的主軸是【幸福美滿，在此一舉】，本次會議也將由會員投票改選理監事，因此希望會員都能感受到【Happy Election, Happy Erection】，男性學的研究與臨床工作，與人類之健康與幸福有密切的相關性，這是一個很有意義的目標。

本次年會，感謝全體理監事的鼎力相助及會員的熱烈參與，在台北市總統府前舉辦，除了能給會員一場豐盛之知識饗宴，也可以讓會員們感受台北的便捷交通與熱情。本次年會內容精彩可期，竭誠歡迎各位會員踴躍報名參與。

最後敬祝
健康平安快樂幸福

台灣男性學醫學會理事長
張宏江 謹上
109 年 6 月 27 日

大會致謝

本次各議題及講者之擬定，委由以下各位理監事負責，大會在此致上萬分之謝意。

鄭裕生醫師 Symposium I: Male Reproductive Disorder

吳佳璋醫師 Symposium V: Advanced Penile Surgery

蔡德甫醫師 Symposium VI: Female Sexual Health

陳　煜醫師 Symposium VIII: Transgender Surgery & 感染專題

劉家駒醫師 Symposium X: LiESWT and Erectile Dysfunction

大會注意事項

壹、論文發表

一、(1)分一般論文海報展示及論文獎口頭發表兩組，一般論文海報展示張貼時間09:00-15:30。

(2)論文獎口頭發表每題演講及討論共6分鐘，4分鐘時第一聲鈴響，5分鐘時第二聲鈴響並開燈，演講即應結束，隨即討論1分鐘。

(3)敬請演講者嚴格遵守，謝謝合作。

二、如果演講未結束，請座長提醒演講者時間已到。如演講時間已到，即開燈結束演講並省略討論。

貳、一般事項

一、報到

報到時間：6 月 27 日上午 8 時 30 分至下午 16 時 00 分止。

報到地點：張榮發基金會國際會議中心 8 樓。

二、會員大會

6 月 27 日上午 11:30-12:00 於八樓 801 會議廳舉行，敬請會員踴躍參加。

三、大會晚宴

6 月 27 日晚上 18:30-21:00，席設台大醫院國際會議中心一樓庭園餐廳（台北市中正區徐州路 2 號）。

四、理監事聯席會議

6 月 28 日(星期日) 上午 10:00-12:00 假國賓飯店二樓四春園進行第十屆第一次理監事聯席會議。

五、醫療商品展示

會議期間各參展廠商將於八樓展區舉辦醫療商品展示，歡迎參觀。

六、午餐供應

敬請與會人員憑名牌於八樓 801 及 803 會議廳前兌換午餐餐盒，並於會議廳內享用午餐。

七、停車服務：張榮發基金會國際會議中心備有地下停車場，可供中小型汽車停放，停車費每小時計30元，或台大醫院或台大國際會議中心均設有停車場。

八、交通資訊：會議地點 – 張榮發基金會國際會議中心8樓會議廳

會場地址 – 台北市中正區中山南路11號

交通資訊及大會接駁車時刻表

會議地點：張榮發基金會國際會議中心 8 樓會議廳(台北市中山南路 11 號)

停 車 場

張榮發基金會國際會議中心(停車場位於信義路上)；或台大醫院或台大國際會議中心均設有停車場。

搭乘高鐵（高鐵台北站）

計 程 車：車站大廳一樓南北兩側出口皆設有計程車招呼站，到會場約5分鐘，車資約120元

搭乘捷運

- 搭乘捷運淡水信義線至「台大醫院」站2號出口下車(距離本館步行時間約5分鐘左右)
- 搭乘捷運淡水信義線或松山新店線至「中正紀念堂」站5號或6號出口下車(距離本館步行時間約10分鐘左右)

大會接駁專車

A 車	6月27日08:30	國賓飯店 ➔ 張榮發基金會國際會議中心
B 車	6月27日20:55	台大國際會議中心庭園餐廳(徐州路) ➔ 台北車站(東三門) ➔ 國賓飯店
C 車	6月27日21:10	

高鐵時刻表（台北站 → 左營站）2020/06/27(周六)

車次	出發 → 抵達	行車時間
0857	20:11 - 22:25	02:14
0161	20:31 - 22:05	01:34
0687	20:46 - 22:45	01:59
0861	21:11 - 23:25	02:14
0165	21:31 - 23:05	01:34
0693	21:41 - 23:40	01:59
0333	21:56 - 23:55	01:59
0295	22:16 - 23:59	01:43

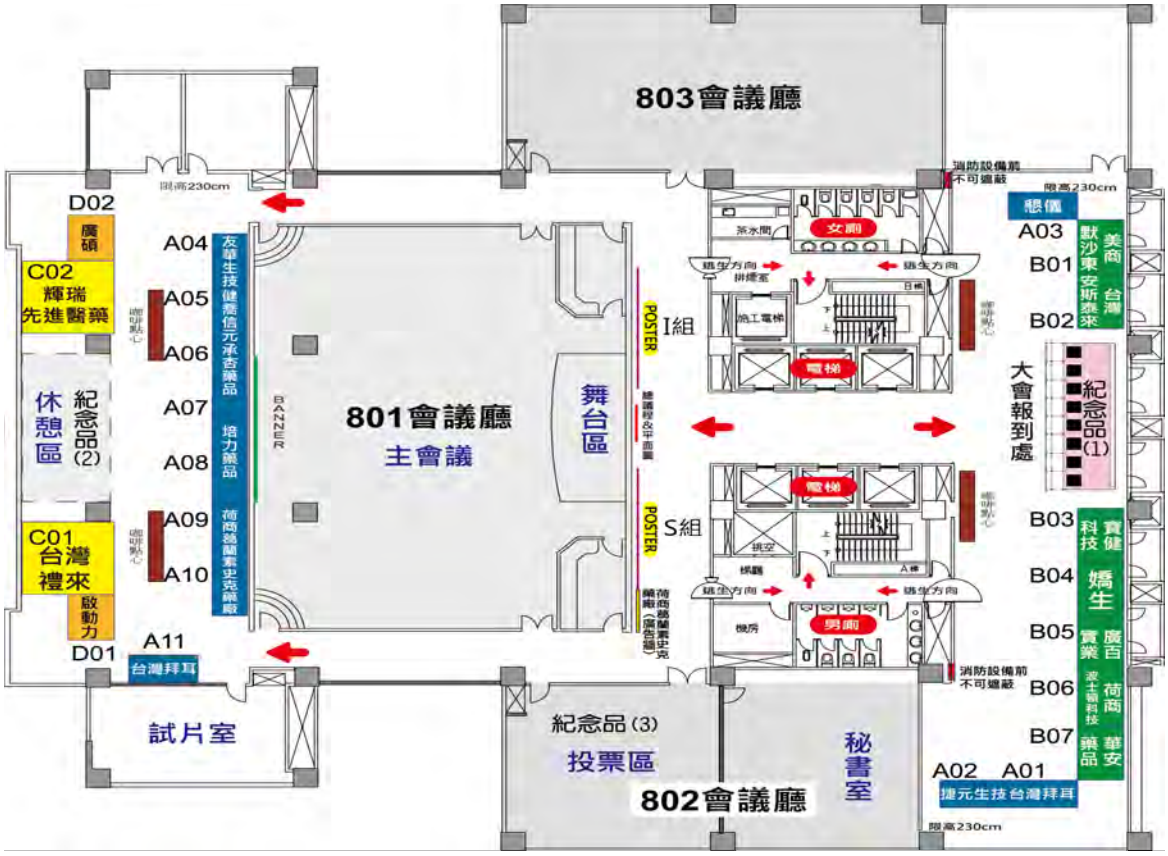
交通示意圖會


咖啡弄(站前店)
臺大醫院兒童醫院
善導寺站
善導寺
原七星郡役所
立法院
國立臺灣博物館
外交部領事事務局
開南商工
台大醫院站
二二八
和平公園
臺大醫院
臺北賓館
總統府廣場
張榮發基金會
中華民國外交部
國家圖書館
臺北市青少年發展處
交通部
國家音樂廳
Google
地圖資料 ©2019 Google 台灣 使用條款 提供意見 200 公尺

前往晚宴場地指示圖

前往晚宴場地(步行約五分鐘 400 公尺)
由張榮發基金會出大門向右側，經人行穿越道過仁愛路，向右行，沿人行道走 180 公尺，左轉入臺大醫院停車場車道，沿車道右側直行，經機電中心，車道，網球場，前方大樓就是台大國際會議中心及動物中心，請繞過大樓由前門進入一樓庭園會館餐廳。

會場攤位平面圖



攤位	廠　　商
A01	台灣拜耳股份有限公司
A02	捷元生技有限公司
A03	懇儀股份有限公司
A04	友華生技醫藥股份有限公司
A05	健喬信元醫藥生技股份有限公司
A06	承杏藥品股份有限公司
A07-A08	培力藥品工業股份有限公司 台灣諾華股份有限公司山德士事業部
A09-A10	荷商葛蘭素史克藥廠股份有限公司台灣分公司
A11	台灣拜耳股份有限公司
B01	美商默沙東藥廠股份有限公司台灣分公司

攤位	廠　　商
B02	台灣安斯泰來製藥股份有限公司
B03	寶健科技股份有限公司
B04	嬌生股份有限公司
B05	廣百實業有限公司
B06	荷商波士頓科技有限公司台灣分公司
B07	華安藥品股份有限公司
C01	台灣禮來股份有限公司
C02	輝瑞先進醫藥股份有限公司
D01	啓動力股份有限公司
D02	廣碩股份有限公司

會議議程表

2020/6/27(星期六)

Happy Election, Happy Erection! 幸福美滿 在此一舉

2020/6/27 (星期六)	801 會議廳	2020/6/27 (星期六)	803 會議廳	802 會議廳
08:30-16:00	辦理報到、繳費 (Registration and Information Desk open) 早餐 08:30 在 803 會議室開始供應			
08:50-09:30	【論文獎口頭發表】 基礎組+臨床組			
		09:00-09:40	【Breakfast with Industry】 Prostate Cancer Treatment	一般論文 海報展示 八樓海報 展示區 09:00-15:30
09:30-09:50	【TAA President Lecture】			
		09:40-10:30	【Symposium I】 Male Reproductive Disorder	
09:50-10:30	【Symposium II】 New Frontiers in Andrology			
10:30-10:50	Coffee break			
10:50-11:30	【Symposium III】 Hypogonadism	10:50-11:30	【Symposium IV】 Genital Dermatology	
11:30-12:00	TAA 會員大會			
12:00-13:00	【Luncheon Symposium I】	12:00-13:00	【Luncheon Symposium II】	
13:00-13:40	【Symposium V】 Advanced Penile Surgery	13:00-13:45	【Symposium VI】 Female Sexual Health	
13:40-14:00	【Workshop 1】 Circumcision Forum	13:45-14:30	【Symposium VII】 LUTS and Men's Health	
14:00-15:00	【Symposium VIII】 Transgender Surgery	14:30-15:00	【Symposium IX】 Prostate Cancer Treatment	第十屆 理監事 選舉投票 12:00-16:00
15:00-15:30	Coffee break			
15:30-15:50	【APSSM President Lecture】 Ejaculatory Disorders	15:30-16:00	【Workshop 2】 Pelvic Surgery	
15:50-16:10	【Special Lecture】 Premature Ejaculation	16:00-16:40	【兩性課程】	
16:10-17:00	【Symposium X】 LiESWT and Erectile Dysfunction			第十屆 理監事 選舉開票 16:00
		16:40-17:20	【Symposium XI】 Medical Appraisal in Andrology	
17:00-17:30	【感染課程】			
18:30-21:00	大會晚宴(台大國際會議中心一樓庭園餐廳)			

第九屆理監事

理　事　長：張宏江
常 務 理 事：廖俊厚 蔡維恭 劉詩彬 陳　煜
理　　事：吳建志 王起杰 邱逸淳 郭育成 陳修聖 陳國強 童敏哲
　　楊緒棣 蔡德甫 鄭裕生
常 務 監 事：劉家駒
監　　事：吳佳璋 林宜佳 謝政興 張效駿
顧　　問：林信男 陳光國 江漢聲 黃一勝 謝汝敦 簡邦平 黃志賢
秘　書　長：戴槐青
副 秘 書 長：王紹全 蔡嘉駿
財　務　長：張奕凱

大會暨學術演講會工作人員

大 會 會 長：張宏江
大會執行長：戴槐青
大會秘書長：張奕凱
學　術　組：廖俊厚 林子平 劉家駒 鄭裕生 許兆畬 陳　煜 黃雲慶
　　蔡維恭 蔡德甫 曹智惟 鍾旭東 梁景堯 林永明 陳志碩
報　到　組：何秀珠 林沛晴
會　場　組：董聖雍 謝明學 黃維倫
資　訊　組：郭名捷 李名偉 林鉅棟 邱士庭
文　宣　組：曾啓新 洪梵菁 鄭功祥
餐　飲　組：鄭詠庭 康維安 彭柏樺
財　務　組：張奕凱
秘　書　組：戴槐青 蔡嘉駿 王紹全 何秀珠

男性學成就獎

林永明教授

現　　職：國立成功大學醫學院泌尿學科兼任教授
　　國立成功大學附設醫院特聘專家醫師
　　加拿大英屬哥倫比亞大學醫學院婦產科兼任教授
學　　歷：中山醫學院醫學士
經　　歷：國立成功大學醫學院教授
　　加拿大英屬哥倫比亞大學客座副教授
　　國立成功大學醫學院泌尿學科主任
　　國立成功大學附設醫院泌尿部主任暨男性生殖科主任
　　台灣男性學醫學會常務理事
　　台灣泌尿科醫學會理事
　　財團法人鳳凰泌尿科學文教基金會總幹事

學術地位：

林教授長期專注於男性生殖醫學的研究，特別專精於深入探討男性無精子症相關基因分子生物作用機轉。曾發表多篇高影響力研究論文於國際 SCI 期刊，他常受邀於國際間演講並屢獲國內外獎項十餘次。林教授曾任台灣男性學醫學會常務理事、學術暨教育委員會主委、男性不孕症小組召集人，治學嚴謹，提攜後進，不遺餘力。曾指導多名碩博士畢業生，帶領他們走向國際。今年初自成功大學榮退，目前轉任國立成功大學兼任教授級暨特聘專家醫師、加拿大英屬哥倫比亞大學兼任教授，持續不孕症研究工作並於國際間講學，繼續為學術和國家奉獻心力。

社會貢獻：

林教授歷任台灣男性學醫學會常務理事及台灣泌尿科醫學會理事，任內推動男性醫學及男性生殖醫學之教學和學術研究不遺餘力，帶動男性學服務及研究之風潮。公務繁忙之餘，更長期投入財團法人鳳凰泌尿科學文教基金會擔任董事暨總幹事，盡力回饋社會。推動南部地區民眾衛教，補助優秀清寒醫學生，補助優秀泌尿科年輕醫師出國進修、訓練、出席國際會議，遴選泌尿科論文獎，每年舉辦學術研討會，每月舉辦民眾醫學講座，協助台灣男性醫學會論文獎項，戮力於推廣泌尿科教育，成效卓著。

醫療貢獻：

林教授曾擔任國立成功大學附設醫院泌尿部部主任和男性生殖科主任，任內熱心教學，長期耕耘南部地區男性醫療服務及男性生殖顯微手術，完成男性不孕相關顯微手術逾 1500 次。林教授並編寫男性不孕症教科書、男性不孕症治療指引、男性不孕症衛教書等，啓發年輕醫師從事男性醫學臨床工作，對於台灣男性生殖領域的醫療水平及服務品提升，實有重大的貢獻。

2020 年榮譽會員

郭俊逸 醫師

經　　歷：
(1)日本京都大學附屬醫院泌尿器科住院醫師
(2)日本京都大學附屬醫院泌尿器科主治醫師
(3)台北榮民總醫院泌尿部主治醫師

現　　職：
台北榮民總醫院泌尿部特約主治醫師

其他事蹟：
專精睪丸癌、定期發表相關論文及教育住院醫師、醫學生。

會員大會程序

一、大會開始

二、主席就位

三、張宏江理事長致詞

四、男性學成就獎頒獎
【得獎人–林永明教授】頒獎人–張宏江理事長

五、男性學論文獎頒獎
【一般醫師–臨床組】頒獎人–林信男醫師
【一般醫師–基礎組】頒獎人–張宏江醫師
【住院醫師–臨床組】頒獎人–謝汝敦醫師

六、江萬煊教授傑出研究論文獎頒獎
頒獎人–江漢聲醫師

七、榮譽會員頒獎–郭俊逸醫師

八、本會年輕會員出席 109 年度學術演講會發表研究成果鼓勵獎狀頒發
頒獎人–廖俊厚醫師

九、理事會暨監事會報告

十、討論事項
(A)請表決一〇八年度決算案。
(B)請表決一〇九年度預算案。
(C)請表決學會章程第卅九條通訊投票增訂案。

十一、臨時動議

十二、散會

台灣男性學醫學會章程

本章程於
中華民國 91 年 3 月 3 日第四屆第 1 次會員大會通過增列第二章第七條第四項。
中華民國 92 年 3 月 9 日第四屆第 2 次會員大會
通過修正第一章第一條、第二章第七條第三項第 1 點、第五章第三十二條第一及第二項。
通過增列第二章第七條第五項；第三章第二十四條第二項。
中華民國 93 年 3 月 6 日第四屆第 3 次會員大會通過修正第二章第七條第三項第 1 點。
中華民國 95 年 3 月 4 日第五屆第 2 次會員大會通過修正第二章第七條第三項第 2 點。
中華民國 98 年 3 月 14 日第六屆第 2 次會員大會通過修正第五章第卅二條。
中華民國 99 年 3 月 6 日第六屆第 3 次會員大會通過修正第二章第七條第三項第 2 點。
中華民國 103 年 3 月 1 日第八屆第 1 次會員大會通過修正第二章第七條第三項第 2 點。

第一章　　總則

第一條：本會名稱為【台灣男性學醫學會】（以下簡稱本會）。英文譯名【The Taiwanese Association of Andrology】，縮寫為【TAA】。

第二條：本會以促進男性學（包括關於攝護腺、儲精囊及外生殖器官之疾病、男性性功能障礙及不孕症等）醫學之研究與提昇教學及臨床醫療水準，增進國際交流為宗旨。

第三條：本會以全國行政區域為組織區域。

第四條：本會會址設於主管機關所在地區。

第五條：本會得於各省縣市設立分支機構，其組織簡則另定之。

第六條：本會之任務如下：

一、促進男性學醫學之研究與發展。
二、舉辦學術演講及討論會。
三、參加亞洲及國際男性學醫學之會議與活動，廣徵資訊並促進與各相關學術團體之交流。
四、出版有關男性學醫學之雜誌書刊。
五、甄選及制定男性學科專科醫師及制度。
六、協助會員醫療經驗之交流合作，男性學科醫師之培養訓練及繼續教育。
七、舉辦男性學之相關事項。

第二章　　會員

第七條：本會會員資格分下列五種：

一、個人會員：(1)凡贊同本會宗旨，並取得台灣泌尿科醫學會會員之資格。

(2)大專畢業從事有關男性學、生殖醫學研究並提出具體研究成果者。

(3)具有(1)或(2)資格者，由本會會員二人介紹，經理事會之審查通過並繳納會費後為個人會員。

二、贊助會員：凡贊同本會宗旨，年滿二十歲，對本會有所贊助，經理事會通過後聘任之。

三、榮譽會員：(1)凡贊同本會宗旨，對男性學醫學有卓越貢獻，由本會理監事各一人之推薦，經理事會通過後聘任之；曾榮獲本會「男性學成就獎」殊榮之人士，得禮聘為本會榮譽會員。

(2)本會會員繳納會費滿十年以上，且年滿六十五歲以上者，得申請榮譽會員，經理事會通過後授予之。

前項會員名冊應報主管機關備查。

四、永久會員：(1)本會會員繳納會費滿三年者，得向本會提出永久會員之申請。

(2)願一次繳納十年份常年會費，得為永免納會費會員。

五、團體會員：凡贊同本會宗旨之醫療相關行業之機構或團體，得申請成為本會團體會員。

第八條：會員（會員代表）有違反法令、章程或不遵守會員(會員代表)大會決議時，得經理事會決議，予以警告或停權處份，其危害團體情節重大者，得經會員（會員代表）大會決議予以除名。如逾期二年不繳納會費者，停止其會員權利。逾期四年不繳納會費者，撤銷其會籍。

第九條：會員有下列情事之一者，為出會：

一、喪失會員資格者。

二、經會員（會員代表）大會決議除名者。

第十條：會員得以書面並敘明理由向本會聲明退會，但應於三個月前預告，並於會計年度結束時生效。

第十一條：會員經出會或退會，已繳納之各項費用不予退還。

第十二條：會員（會員代表）有表決權、選舉權、被選舉權與罷免權。每一會員為一權。但【贊助會員】、【榮譽會員】無表決權、選舉權、被選舉權與罷免權。

第十三條：會員有遵守本會章程、決議，接受指派職務及繳納會費之義務。

第三章　　組織及職員

第十四條：本會以會員（會員代表）大會為最高權力機構，會員大會閉會期間由理事會代行職權，監事會為監察機構。如會員超過三百人以上時，得劃分地區，依會員人數比例選出代表，再合開代表大會，行使職權。

第十五條：會員（會員代表）大會之職權如下：
一、訂定與變更章程。
二、選舉或罷免理事、監事。
三、議決入會費、常年會費、事業費及會員捐款之數額及方法。
四、議決年度工作計劃、報告及預算、決算。
五、議決會員（會員代表）之除名處分。
六、議決財產之處分。
七、議決團體之解散。
八、與會員權利義務有關之其他重大事項之議決。

第十六條：本會置理事十五人、監事五人，由會員（會員代表）選舉之，分別成立理事會、監事會。其選舉辦法由理事會訂定，並報請主管機關核備後行之。
選舉前項理事、監事時，同時選出後補理事三人，後補監事一人。當選理監事及後補理監事之名次，依得票多寡為序、票數相同時以抽籤決定之。次屆理、監事候選人名單，得由會員（會員代表）授權當屆理事會辦理提名之。

第十七條：理事會職權如下：
一、議決會員（會員代表）大會之召開事項。
二、審定會員（會員代表）之資格。
三、選舉或罷免常務理事、理事長。
四、議決理事、常務理事或理事長之辭職。
五、聘免工作人員。
六、擬定年度工作計劃、報告及預算、決算。
七、其他應執行事項。

第十八條：理事會置常務理事五人，由理事互選之，並由理事就常務理事中選舉一人為理事長。
理事長對內綜理督導會務，對外代表本會，並擔任會員（會員代表）大會、理事會主席。
理事長應視會務需要到會辦公，其因事不能執行職務時，應指定常務理事一人代理之，不能指定時，由常務理事一人代理之。

第十九條：監事會之職權如下：
一、監察理事工作之執行。
二、審核年度決算。
三、選舉或罷免常務監事。
四、議決監事或常務監事之辭職。
五、其他應監查事項。

第二十條：監事會置常務監事一人，由監事互選之，監察日常會務，並擔任監事會召集人。

第二十一條：理事、監事之任期三年，連選得連任。但理事長不得連任。理事、監事之任期三年自召開本屆第一次理監事會聯席會議之日起計算。
本會理監事如因故不能執行職務時，由候補理監事依次遞補之。

第二十二條：理事、監事均為無給職。

第二十三條：理事、監事有下列情事之一者，應即解任：
一、喪失會員（會員代表）資格者。
二、因故辭職經理事會或監理事會決議通過者。
三、被罷免或撤免者。
四、受停權處分期間逾期二分之一者。

第二十四條：一、本會置秘書長一人，承理事長之命處理本會事務，其他工作人員若干人，由理事長提名經理事會通過後聘免之，並報主管機關備查，但秘書長之解聘應先報主管機關核備。
二、本會卸任之理事長，如不再擔任理事者，得由學會聘任為顧問。

第二十五條：本會選任職員不得兼任工作人員。

第二十六條：本會得設各種委員會、小組，其組織簡則由理事會擬定，報經主管機關核備後施行，變更時亦同。

第四章　　會議

第二十七條：會員（會員代表）大會，分定期會議與臨時會議二種，由理事長召集，召集時應於十五日前以書面通知之。定期會議每年召開一次，臨時會議於理事會認為必要或經會員（會員代表）五分之一以上之請求，或監事會函請召集時召開之。

第二十八條：會員（會員代表）不能親自出席會員（會員代表）大會時，以書面委託其他會員（會員代表）代理，每一會員（會員代表），以代理一人為限。

第二十九條：會員（會員代表）大會之決議，以會員（會員代表）過半數之出席，出席人數較多數之同意行之。但下列事項之決議以出席人數三分之二以上同意行之：
一、章程之訂定與變更。
二、會員（會員代表）之除名。
三、理事、監事之罷免。
四、財產之處分。
五、團體之解散。
六、其他與會員權利義務有關之重大事項。

第三十條：理監事聯席會議每六個月召開一次，必要時得召開臨時會議。
前項會議召開時除臨時會議外，應於 7 日前以書面通知，會議之決議，各以理事、監事過半數之出席，出席人數較多數之同意行之。

第三十一條：理事、監事應出席理監事聯席會議不得委託出席。
理事、監事連續二次無故缺席理、監事連席會議者，視同辭職。

第五章　　經費及會計

第三十二條：本會經費來源如下：

一、入會費：個人會費新台幣 2,000 元。總住院醫師以下之個人入會費新台幣 1,000 元；團體會員會費新台幣 200,000 元。

二、常年會費：個人會費新台幣 1,000 元。總住院醫師以下之會員，免收第一年常年會費 NT$1000；第二年起常年會費半額優待；團體會員會費新台幣 10,000 元。

三、事業費。

四、會員捐款。

五、委託收金。

六、基金及其孳息。

七、其它收入。

第三十三條：本會會計年度自每年一月一日起至十二月三十一日止。

第三十四條：本會每年度編造預(決)算報告，於每年終了之前(後)二個月內，經理事會審查，提會員(會員代表)大會通過，並報主管機關核備，會員(會員代表)大會因故未能及時召開時，應經理、監事聯席會議通過，先報主管機關，事後提報大會追認，但決算報告應先送監事會審核，並將審核結果一併提會員(會員代表)大會。

第三十五條：本會於解散後，剩餘財產歸屬所在地之地方自治團體或主管機關指定之機關團體所有。應依法處理，不得以任何方式歸屬任何個人或私人企業機構。

第六章　　附則

第三十六條：本章程如有未盡事宜，得提會員（會員代表）大會議決修正，呈主管機關備案。

第三十七條：本會辦事細則，由理監事聯席會議訂定之。

第三十八條：本章程經會員（會員代表）大會通過，報經主管機關核備後施行，變更時亦同。

新增第三十九條條文

第三十九條：本會理事及監事之選舉，若因故並經理監事會判定，無法以集會方式進行時，得報請主管機關核備後，得以通訊選舉方式辦理，並不得於次屆理監事選舉時連續使用。通訊選舉辦理方式如下：

一、本會理事及監事之通訊選舉採無記名連記法，理事之圈選不得超過 15 人，監事之圈選不得超過 5 人。被選舉人不以參考名單所列為限。凡本會個人會員(不含遭停權者)，均得為候選人。

二、本會理事、監事之通訊選舉票，應蓋用本會圖記及常務監事印章後，始生效力。

三、本會理事、監事之通訊選舉票，連同回郵封套，及本會所有具選舉權資格會員名單，於預定開票日一個月前按具選舉權之全體會員人數，以掛號郵寄，不得遺漏，並由監事會負責監督。凡有無法送達者，應於開票時提出報告，並列入紀錄。

四、本會理事、監事之通訊選舉票，由選舉人圈選後納入回郵封套，密封掛號寄還。選票經寄回後，應即投入票匭，於開票時當場拆封。如未以掛號寄回，或在投票截止日期後寄達者(以郵戳為憑)，視為廢票。

五、本會理事、監事之通訊選舉開票，應在理事會議行之，由監事會派員監督及錄影。開票結果，應以書面通知各會員(會員代表)。

六、本會理事、監事之通訊選舉票，在開票完畢宣佈結果後，所有選舉票應予包封，由當屆理事長及常務監事會同驗簽後，妥為保管俟次屆任期屆滿改選完畢後銷毀。

七、本辦法經理監事聯席會議決議通過，呈報主管機關核備後施行，修改時亦同。

報告事項

一、理事會報告

(1)會務報告及計畫：

1. 108 年度工作報告。
2. 109 年度工作計劃。
3. 台灣 SDACT 委員會 108 年度工作報告。
4. 台灣 SDACT 委員會 109 年度工作計劃。

(2)經費決算及預算案：

1. 108 年度決算案。
2. 109 年度預算案。

(3)會員概況：

1. 有效會員人數：444 名（內含永久會員 183 名、一般會員 261 名）
2. 以下為 108 年度新入會員名單。

編號	姓名	服務單位
652	孫孟琳	紫苑心性健康管理中心
653R	蘇佳宏	高雄長庚醫院泌尿科住院醫師
654R	陳柏諺	高雄長庚醫院泌尿科住院醫師
655R	劉昱良	高雄長庚醫院泌尿科住院醫師
656	王介男	聖康診所主治醫師
657R	丁偉峰	林口長庚醫院泌尿科住院醫師
658R	曲元正	林口長庚醫院泌尿科住院醫師
659R	李允仁	林口長庚醫院泌尿科住院醫師
660R	李承哲	林口長庚醫院泌尿科住院醫師
661R	曹書瀚	林口長庚醫院泌尿科住院醫師
662R	陳思遠	林口長庚醫院泌尿科住院醫師
663R	陳昱廷	林口長庚醫院泌尿科住院醫師
664R	黃亮鋼	林口長庚醫院泌尿科住院醫師
665R	葉韶豪	林口長庚醫院泌尿科住院醫師
666R	樊樂威	林口長庚醫院泌尿科住院醫師
667R	蘇世桓	林口長庚醫院泌尿科住院醫師

編號	姓名	服務單位
668R	簡維弘	林口長庚醫院泌尿科住院醫師
669R	簡佑軒	林口長庚醫院泌尿科住院醫師
670R	潘柏諺	林口長庚醫院泌尿科住院醫師
671R	蔡翰宇	林口長庚醫院泌尿科住院醫師

3.榮譽會員 41 名（含外賓 2 名）。

4.團體會員　6 名。

二、監事會報告

(一) 關於大會執行工作經過，理事會均已分別報告，並視實際需要配合經費執行。

(二) 關於理事會處理會務均依本會章程辦理，遇有重要事項，則召開各委員會或理監事聯席會議商討解決。

(三) 本年理事會工作積極，值得向本會全體會員告慰。

台灣男性學醫學會
一〇八年度工作報告
中華民國 108 年 1 月 1 日至 108 年 12 月 31 日止

一、會員大會

3 月 9 日假高雄醫學大學附設醫院自由大樓六樓第一講堂舉辦本會 108 年度第九屆第 3 次會員大會。

二、學術演講

3 月 9-10 兩日假高雄醫學大學附設醫院自由大樓六樓第一、第二講堂舉辦本會第 50 次學術演講會。

三、理監事會議

(1)3 月 9 日召開本會第九屆第 7 次理監事聯席會議。
(2)7 月 13 日召開本會第九屆第 8 次理監事聯席會議。
(3)12 月 14 日份召開本會第九屆第 9 次理監事聯席會議。

四、TAA 年度活動報告。

時間	2019 主辦會議一覽表(地點及題目)
108/05/18	本會 vs 台中榮民總醫院泌尿科假台中萬楓酒店合辦本會【2019 台中榮民總醫院泌尿外科 X 台灣男性學醫學會聯合學術會議】
108/08/24	本會假台大醫學院 103 講堂舉辦本會【2019 進階男性學與泌尿學夏季論壇】。
108/10/19	本會假台中萬楓酒店一樓萬楓廳舉辦【2019 TAA Congress】。

時間	2019 協辦會議一覽表(地點及題目)
108/02/22	本會假吉品海鮮敦南店會議室協辦【Multicenter Joint Symposium Genitourinary Cancer】會議。
108/05/19 108/05/26 108/06/16	本會分北、中、南三區協辦【助你快樂、青春再現，荷爾蒙用藥系列講座】。
108/09/28	本會 vs 嘉義長庚泌尿科 vs 台灣泌尿科醫學會假耐斯飯店七樓凱旋廳協辦【2019 年 9 月雲嘉季會學術討論會】。
108/10/05	本會假喜來登大飯店一樓清翫廳協辦【台大結石論壇】。
108/11/9-10	本會假寒沐酒店協辦【台大泌尿科學術研討研習營】。

五、配合台灣 SDACT 委員會，舉辦地方繼續教育課程(詳內容請參見 108 年度台灣 SDACT 委員會工作報告)。

六、出版

(1)大會手冊。
(2)研討會書籍。
(3)本會電子會訊：第 9 卷第 8 期、第 9 卷第 9 期、第 9 卷第 10 期、第 9 卷第 11 期。
(4)【男性學治療指引】專書、早洩、男性更年期、查埔人的心內話以及男性健康衛教手冊。
(5)HPV 預防：「94 要防癌，男女一起來」、「要愛不要癌，遠離 HPV」衛教宣導。

七、網站：www.tand.org.tw

八、論文獎比賽：

分【男性學論文獎】、【江萬煊教授傑出研究論文獎】以及【臺灣楓城泌尿學會男性學論文獎】三大類。為促進會員之學術研究風氣，每年舉辦一次論文比賽，分基礎與臨床兩組(含住院醫師組)。其名次由本會學術暨教育委員會評定並決議頒發獎項或從缺。

九、男性學成就獎：

為獎勵對國內男性學研究有貢獻之學者，特頒此獎項以資鼓勵。

十、國際學術交流：

(1)旅美呂福泰教授、王潤教授等，應邀蒞臨本會舉辦之「第九屆第三次會員大會暨第50次學術演講會」中作專題演講。
(2)2019年4月9-14日率團赴澳洲布里斯本參加APSSM亞太性醫學會議。

台灣男性學醫學會
一〇九年度工作計劃
中華民國 109 年 1 月 1 日至 109 年 12 月 31 日止

一、會員大會

6 月 27 日假張榮發基金會國際會議中心八樓會議廳舉辦本會「109 年度第十屆第 1 次會員大會」。

二、學術演講

6 月 27 日假張榮發基金會國際會議中心八樓會議廳舉辦本會「第 51 次學術演講會」。

三、理監事會議

(1)三月份召開本會第九屆第 10 次理監事聯席會議。
(2)六月份召開本會第十屆第 1 次理監事聯席會議。
(3)十二月份召開本會第十屆第 2 次理監事聯席會議。

四、繼續教育、研討會及衛教活動

(1)舉辦本會 9、12 月份地方學術研討會。
(2)配合台灣 SDACT 委員會，舉辦醫師、藥師地方繼續教育課程。
(3)不定期舉辦民眾衛教講座。

五、出版

(1)大會手冊。
(2)研討會書籍。
(3)本會電子會訊：
第 9 卷第 12 期、第 10 卷第 1 期、第 10 卷第 2 期、第 10 卷第 3 期。
(4)男性健康、早洩、男性更年期及硬度愛經衛教手冊等。

六、網站：www.tand.org.tw

七、論文獎比賽：

分【男性學論文獎】及【江萬煊教授傑出研究論文獎】兩大類。為促進會員之學術研究風氣，每年舉辦一次論文比賽，分基礎與臨床兩組(含住院醫師組)。其名次由本會學術暨教育委員會評定並決議頒發獎項或從缺。

八、男性學成就獎：

為獎勵對國內男性學研究有貢獻之學者，特頒此獎項以資鼓勵。

台灣男性學醫學會
台灣性功能障礙諮詢暨訓練委員會
（台灣SDACT委員會）
一〇八年度工作報告
中華民國 108 年 1 月 1 日至 108 年 12 月 31 日止

一、委員會會議

(1) 7 月 13 日召開本委員會第十屆第 2 次台灣 SDACT 委員會會議。

(2)12 月 14 日召開本委員會第十屆第 3 次台灣 SDACT 委員會會議。

二、繼續教育-藥師系列課程辦理。

時間	主題	地區	協辦廠商
2019/03/24	2019 臨床用藥最新需知研習會	台北場	美納里尼
2019/03/30	2019 性功能障礙的診斷與治療研討會	台中區	
2019/04/13 2019/07/07 2019/09/28	藥品與敷料的臨床運用(1) 藥品與敷料的臨床運用(2) 藥品與敷料的臨床運用(3)	高雄區 台南區 台北區	

三、配合 TAA，合併舉辦本委員會醫師繼續教育課程。

時間	主題	地點
108/06/29	古今中外，鄉民們搞啥名堂工作坊	台南沐雲頂國際商旅3樓VIP室
108/07/6-7	Men's Health and ED and Testosterone 研討會	台中林酒店7樓上海廳
108/09/21	The Impact of Chronic PDE5 Inhibitors Use on Men's Health學術研討會」	高雄水京棧飯店2樓宴會A廳
108/09/28	ED Forum: What's the Difference in Diverse Population 學術研討會(台中場)	台中林酒店7樓柏林廳
108/11/09	ED Forum: Most Frequent Asked Issue in Sexual Dysfunction 學術研討會(高雄場)	高雄林皇宮2樓匯悅廳
108/11/30	2019 冬季攝護腺專題研討會	台北國際會議中心3樓北軒
108/12/29	Men's Health and Testosterone(台北場)	台北君品 5 樓盧梭/迪卡兒廳

四、出版：男性性功能障礙治療及診斷專書、早洩、男性更年期及男性健康手冊。

五、網站：sdact.tand.org.tw

台灣男性學醫學會
台灣性功能障礙諮詢暨訓練委員會
（台灣SDACT委員會）
一〇九年度工作計劃
中華民國 109 年 1 月 1 日至 109 年 12 月 31 日止

一、委員會會議

(1) 7 月份召開本委員會第十屆第 4 次台灣 SDACT 委員會會議。

(2)12 月份召開本委員會第十一屆第 1 次台灣 SDACT 委員會會議。

二、繼續教育

(1)全省不定期舉辦醫師/藥師訓練講座(或研討會)。

(2)配合 TAA 研討會活動，合併舉辦本委員會繼續教育課程。

三、民衆教育：全省民衆巡迴衛教講座。

四、出版：男性性功能障礙治療及診斷專書、早洩、硬度愛經、男性健康手冊以及男性更年期衛教影片。

五、網站：sdact.tand.org.tw

感謝狀及其他獎狀


(109)台男文獎字第001號

台灣男性學醫學會
財團法人鳳凰泌尿科學文教基金會
男性學論文獎臨床組第一名

查會員 簡 邦 平 參加
一〇九年度論文甄選經評審
小組評定以貴論著理論精宏
文采斐然至堪嘉許 特
頒獎鼓勵

論著題目：Degree of Planning of Sexual Intercourse among Men from China, Japan and Taiwan Taking Medication for Erectile Dysfunction: Findings of an Observational, Cross-sectional Survey

理事長 張宏江

中華民國一〇九年六月廿七日


(109)台男文獎字第002號

台灣男性學醫學會
財團法人鳳凰泌尿科學文教基金會
男性學論文獎臨床組第二名

查會員 吳 宜 娜 參加
一〇九年度論文甄選經評審
小組評定以貴論著理論精宏
文采斐然至堪嘉許 特
頒獎鼓勵

論著題目：The Role of SLC9A3 in Taiwanese Patients with Congenital Bilateral Absence of Vas Deferens (CBAVD)

理事長 張宏江

中華民國一〇九年六月廿七日


(109)台男文獎字第003號

台灣男性學醫學會
男性學論文獎基礎組第一名

查會員 黃 雲 慶 參加
一〇九年度論文甄選經評審
小組評定以貴論著理論精宏
文采斐然至堪嘉許 特
頒獎鼓勵

論著題目：Dietary Modification is Associated with Normalization of Penile Hemodynamics in Rats Fed a High-fat-diet

理事長 張宏江

中華民國一〇九年六月廿七日


(109)台男文獎字第004號

台灣男性學醫學會
男性學論文獎基礎組第二名

查會員 汪 雅 雲 參加
一〇九年度論文甄選經評審
小組評定以貴論著理論精宏
文采斐然至堪嘉許 特
頒獎鼓勵

論著題目：SEPT14 Mutations and Teratozoospermia: Genetic Effect on Sperm Head Morphology and DNA Integrity

理事長 張宏江

中華民國一〇九年六月廿七日


(109)台男文獎字第005號

台灣男性學醫學會
江萬煊教授傑出研究論文獎

查會員 劉 家 駒 參加
一〇九年度論文甄選經評審
小組評定以貴論著理論精宏
文采斐然至堪嘉許 特
頒獎鼓勵

論著題目：Hepatocyte Nuclear Factor- 4α P2 Promoter Variants are Associated with the Risk of Metabolic Syndrome and Testosterone Deficiency in Aging Taiwanese Men

理事長 張宏江

中華民國一〇九年六月廿七日


(109)台男文獎字第006號

台灣男性學醫學會
男性學論文獎住院醫師組

查會員 陳 一 中 參加
一〇九年度論文甄選經評審
小組評定以貴論著理論精宏
文采斐然至堪嘉許 特
頒獎鼓勵

論著題目：The Relationship between Androgen Deprivation Therapy and Depression Symptoms in Patients with Prostate Cancer

理事長 張宏江

中華民國一〇九年六月廿七日

MEMO

子議程表

801 會議廳　　2020/6/27 (星期六)

時間	講題	講師	座長
論文獎口頭發表 (基礎組+臨床組)			
08:50-08:54	Opening	張宏江理事長	
08:54-09:30	男性學論文獎及江萬煊教授傑出研究論文獎	得獎人	梁景堯醫師 曹智惟醫師
TAA President Lecture			
09:30-09:50	The Clinical Difference between Testosterone Restoration and Testosterone Replacement	張宏江醫師	黃志賢醫師
Symposium II - New Frontiers in Andrology			
09:50-10:10	A Novel Nasal Gel Formula for Testosterone Replacement Therapy in Men with Hypogonadism	黃世聰醫師	邱逸淳醫師
10:10-10:30	Effect of Enzalutamide on Patient-reported Outcomes, Including Fatigue, in Metastatic Hormone-Sensitive Prostate Cancer: Analyses from the Arches Study	李建儀醫師	崔克宏醫師
10:30-10:50	Coffee Break		
Symposium III - Hypogonadism			
10:50-11:10	The Interplay between Testosterone Level and Prostate Health	陳卷書醫師	蔡維恭醫師 廖俊厚醫師
11:10-11:30	The Role of Testosterone Replacement Therapy as an Anti-Aging Therapy	張奕凱醫師	
11:30-12:00	TAA 會員大會		

子議程表

801 會議廳　　2020/6/27 (星期六)

時間	講題	講師	座長
Luncheon Symposium 1			
12:00-12:30	What is the Optimal Medical Treatment for Post-Radical Prostatectomy Erectile Dysfunction?	戴槐青醫師	林信男醫師 王起杰醫師
12:30-13:00	How to Treat ED Patients and Its Cardiovascular Comorbidity Effectively?	王宗道醫師	
Symposium V - Advanced Penile Surgery			
13:00-13:20	3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.	張孟霖醫師	江漢聲醫師 吳佳璋醫師
13:20-13:40	Penile Prosthesis Implantation under Local Anesthesia. How I do it?	謝政興醫師	
Workshop 1 - Circumcision Forum			
13:40-13:50	Pros and Cons of Laser Circumcision, is it Really Beneficial?	彭元宏醫師	謝政興醫師 蔡芳生醫師
13:50-14:00	Semi-Live Surgery: Surgical Techniques Sharing for Circumcision Stapler Device	張宏江醫師	
Symposium VIII - Transgender Surgery			
14:00-14:20	Psychiatric Assessment of Gender Dysphoria Patients	劉智民醫師	謝汝敦醫師 陳　煜醫師
14:20-14:40	Hormone Therapy for Transgender Patients	劉妙真醫師	
14:40-15:00	Male-to-female Sexual Reassignment Surgery-My Personal Experience	沈秉輝醫師	
15:00-15:30	Coffee Break		
APSSM President Lecture - Ejaculatory Disorders			
15:30-15:50	The Comorbidity between Premature Ejaculation and Erectile Dysfunction	簡邦平醫師	江漢聲醫師 陳光國醫師
Special Lecture - Premature Ejaculation			
15:50-16:10	Comprehensive Treatment of Premature Ejaculation	蔡維恭醫師	張進寶醫師 張美玉醫師
Symposium X - LiESWT and Erectile Dysfunction			
16:10-16:35	Updated Evidence of LI-ESWT in the Treatment of Erectile Dysfunction	劉家駒醫師	黃一勝醫師 蔡維恭醫師
16:35-17:00	The Potential Role of LI-ESWT in Men with Erectile Dysfunction Following Radical Prostatectomy	黃志賢醫師	
感染課程			
17:00-17:30	Update of PrEP for HIV Infection	盧柏樑醫師	楊緒棣醫師 陳　煜醫師

子議程表

803 會議廳　　2020/6/27 (星期六)

時間	講題	講師	座長
Breakfast with Industry (08:30 開始提供早餐) - Prostate Cancer Treatment			
09:00-09:10	Opening	張宏江理事長	
09:10-09:40	Push Back on Progression - Early Treatment with Novel Therapies and New Standard of Care in Advanced Prostate Cancer	王紹全醫師	黃昭淵醫師
Symposium I - Male Reproductive Disorder			
09:40-09:50	Implication of Sperm DNA Fragmentation in Male Factor Infertility	林宗彥醫師	謝明里醫師 吳建志醫師
09:50-10:00	The Appropriate Timing to Consider Testicular Sperm over Ejaculated Sperm in Male Infertile Patients	張效駿醫師	
10:00-10:10	The Reproductive Outcomes using Fresh Sperm versus Cryopreserved Sperm in NOA Patients	黃奕燊醫師	張宏江醫師 黃志賢醫師
10:10-10:20	The Concern of Fertility Preservation for Young Patients with Klinefelter Syndrome	翁涵育醫師	
10:20-10:30	Male Fertility and Its Impact on the Heath of Future Generation	鄭裕生醫師	
10:30-10:50	Coffee break		
Symposium IV - Genital Dermatology			
10:50-11:10	Common Genital Skin Conditions Encountered at Urologic Office	李嘉文醫師	陳偉寶醫師 蔡呈芳醫師
11:10-11:30	Genital Skin Disorders We need to Transfer to Dermatologists	烏惟新醫師	
Luncheon Symposium II			
12:00-12:30	Optimizing Treatment in mCRPC Patients with Xofigo (radium-223)	蔡維恭醫師	馮思中醫師 劉詩彬醫師
12:30-13:00	Clinical Experience Sharing of Ra-223 Therapy in mCRPC Treatment	黃玉儀醫師	

子議程表

803 會議廳　　2020/6/27 (星期六)

時間	講題	講師	座長
Symposium VI - Female Sexual Health			
13:00-13:15	Androgen Treatment Guidelines and Safety Concerns in Female Sexual Dysfunction	張美玉醫師	陳國強醫師 蔡德甫醫師
13:15-13:30	Cardiovascular Issues in Female Sexual Dysfunction	胡如娟醫師	
13:30-13:45	Contraception and Female Sexual Function	李香瑩醫師	
Symposium VII - LUTS and Men's Health			
13:45-14:00	PSA and 5α Reductase Inhibitor Treatment: Clinical Implications	蔡嘉駿醫師	陳修聖醫師 童敏哲醫師
14:00-14:15	Sexual Dysfunction in Men with 5α Reductase Inhibitors	邱鴻傑醫師	
14:15-14:30	How to Avoid Post-OP Stress Urinary Incontinence in Patients Receiving Prostate Enucleation Surgery	張雲筑醫師	
Symposium IX - Prostate Cancer Treatment			
14:30-14:45	Overview of Treatment for Prostate Cancer: Past, Present and Future	周博敏醫師	吳文正醫師 劉詩彬醫師
14:45-15:00	Hormone Therapy - Backbone for Advanced Prostate Cancer	戴逸昇醫師	
15:00-15:30	Coffee break		
Workshop 2 - Pelvic Surgery			
15:30-15:45	Nerve-Sparing Techniques and Results in Pelvic Surgery	楊晨洸醫師	黃世聰醫師 黃志賢醫師
15:45-16:00	Current Penile-rehabilitation Strategies: Clinical Evidence	張博誌醫師	
兩性課程			
16:00-16:40	醫療中的多元性別敏感度	徐志雲醫師	簡邦平醫師 蔡德甫醫師
Symposium XI - Medical Appraisal in Andrology			
16:40-16:50	如何鑑定男性性無能? Nocturnal Penile Tumescence or Penile Doppler Ultrasonography	郭育成醫師	王起杰醫師 張宏江醫師
16:50-17:00	法律鑑定案件分享	張奕凱醫師	
17:00-17:10	法律人如何看待性功能障礙鑑定結果?	蔡秀男醫師	
17:10-17:20	如何解讀法律規定的性無能與性侵	許峻彬法官	

【一般論文海報展示】
男性不孕症 I 組

海報張貼時間：09:00 - 15: 30

類 組	題 目
I-1	The Effect of SLC9A3 on Regulating the Expression of Aquaporin 1 (AQP1) in Epididymis of Mice SLC9A3調控水通道蛋白在小鼠副睪的表現 陳冠潔[1] 吳宜娜[2] 曾筱雯[1] 江漢聲[3,4,5] 輔仁大學醫學院生技醫藥博士學位學程[1] 輔仁大學醫學系[2] 天主教耕莘醫院外科部泌尿外科[3] 輔仁大學生物暨醫藥學研究所[4] 輔仁大學附設醫院泌尿科[5]
I-2	Loss of TBC1D21 Causes Male Infertility with Multiple Morphological Abnormalities of the Sperm Flagella and Mitochondria Sheath TBC1D21缺失將導致男性不孕症因精蟲尾部以及粒線體結構受損 汪雅雲[1,2] 林盈宏[1] 輔仁大學生物醫學暨藥學研究所[1] 輔仁大學化學系[2]
◈ I-3	A Risk Prediction of Sperm Retrieval Failure with Testicular Sperm Extraction in Males with Azoospermia 無精症男性睪丸取精失敗風險預測 陳一中[1] 江百凱[1,2] 陳建志[1-3] 許炯明[1,3] 邱文祥 蔡維恭 [1]台北馬偕紀念醫院 [2]馬偕醫學院 [3]馬偕醫護管理專科學校 [4]陽明醫學大學
I-4	Microdissection Testicular Sperm Extraction (mTESE) for Non-Obstructive Azoospermia (NOA)-Is Longitudinal Testicular Incision Better? 非阻塞性無精症患者接受睪丸顯微探查取精手術–使否睪丸縱向切開探查較好? 蔡承翰[1] 陳威任[1] 黃奕燊[1] 黃志賢[1,2,3] 臺北榮民總醫院泌尿部[1] 書田泌尿科學研究中心[2] 國立陽明大學醫學院泌尿學科[3]
I-5	Phenotype Analysis of Klinefelter Syndrome among Asian Population-106 Patients in One Taiwanese Institute Klinefelter症候群亞洲族群的表現型分析–單一台灣機構106位病人 余秉軒[1] 黃志賢[1,2,3] [1]臺北榮總泌尿部 [2]國立陽明大學醫學系泌尿學科 [3]書田泌尿科學研究中心
I-6	Deoxyribonucleic acid (DNA) Strand Breaks Aggravate after Target Methylation of MAEL Promoter in Human NCI-H358 Cells H358細胞株中MAEL基因啟動子區域中進行目標甲基化會造成去氧核醣核酸斷裂 鄭裕生 黃詩凱 陳幸儀 林永明 國立成功大學醫學院附設醫院泌尿部
I-7	The Association between Hypermethylation of BOLL Promotor and Spermtagenic Failure BOLL啟動子高甲基化跟造精功能異常之間的關聯性 林宗彥 黃詩凱 陳幸儀 林永明 鄭裕生 國立成功大學附設醫院泌尿部

上方議程內有◈註記者，為本年度獲獎Travel Award之年輕醫師。

【一般論文海報展示】
勃起功能障礙 S 組

海報張貼時間：09:00 - 15: 30

類 組	題 目
S1	Erectile Hemodynamic Status before Robotic-assisted Laparoscopic Radical Prostatectomy Associates with Tumor Location and Early Erectile Functional Outcome 達文西機械手臂輔助前列腺根除手術前勃起血流評估及早期性功能回復之探討 洪梵菁[1] 施文萍[2] 陳志鴻[1] 謝汝敦[1] 張宏江[1] 黃昭淵[1] 張奕凱[1] 國立台灣大學附設醫院泌尿部[1] 國立台灣大學附設醫院護理部[2]
S2	Near Infrared Spectroscopy: A New Technique for Assessing Erectile Function 近紅外線光譜儀評估勃起功能障礙之可行性探討 彭元宏[1] 張宏江[2] 陳志鴻[2] 謝汝敦[2] 王宗道[2] 蔡芳生[1] 羅孟宗[3] 林澂[3] 黃維倫[2] 張奕凱[2] 天成醫療社團法人天晟醫院泌尿科[1] 國立台灣大學附設醫院泌尿部[2] 國立中央大學生醫科學與工程學系[3]
S3	Evaluating Questionnaires for Female Sexual Dysfunction-A Literature Survey 評估研究女性性功能障礙問卷文獻探查 盧致誠[1,2] 范文宙[1] [1]奇美醫療財團法人柳營奇美醫院外科部泌尿科 [2]國立中正大學資管所
S4	Screening for Organic Factors and Psychosocial Distress between Young (20–39 yrs) and Old (40–69 yrs) Age Groups with ED 比較年輕(20-39歲)與老年(40-69)兩族群篩檢器質性因子與心理社會壓力 簡邦平 高雄榮民總醫院外科部泌尿外科
S5	Fatty Liver Index is a Novel Predictor of Testosterone Deficiency in Aging Taiwanese Men Especially Subjects without Metabolic Syndrome 脂肪肝指數為台灣老化男性罹患睪固酮低下的新穎預測因子，特別是未罹患代謝症候群族群 劉家駒[1-2] 蔡嘉駿[3] 李政學[1] 謝翠娟[4] 李永進[1,5] 黃書彬[1] 王起杰[6] 高雄醫學大學附設醫院高雄醫學大學泌尿科[1] 衛生福利部屏東醫院泌尿科[2] 高雄市立大同醫院泌尿科[3] 高雄醫學大學醫學研究所與環境醫學研究中心高雄醫學大學[4] 高雄市立小港醫院泌尿科[5] 義大大昌醫院泌尿科[6]
S6	Intracavernous Injection of Autologous Platelet-Rich Plasma Ameliorates Hyperlipidemia-Associated Erectile Dysfunction in a Rat Model 血小板血漿對高脂肪食物誘發老鼠性功能障礙的治療效果 黃雲慶 陳志碩 何東儒 嘉義長庚紀念醫院外科部泌尿科
S7	The Predictor of Low-intensity Extracorporeal Shockwave Therapy Efficacy in Patients with Refractory Chronic Pelvic Pain Syndrome 低能量體外震波治療對於頑固性慢性骨盆疼痛症候群患者療效的預測因子 蔡嘉駿[1] 古筱菁[2,3] 李永進[2,3] 阮雍順[1,2] 劉家駒[2,4] 王起杰[2] 高雄市立大同醫院泌尿科[1] 高雄醫學大學附設中和紀念醫院泌尿科[2] 高雄市立小港醫院泌尿科[3] 衛生福利部屏東醫院泌尿科[4]

【論文獎口頭發表】

801 會議廳　　2020/6/27 (星期六)

座長：梁景堯醫師、曹智惟醫師　　發表時段：08:54-09:30 (每題6分鐘)

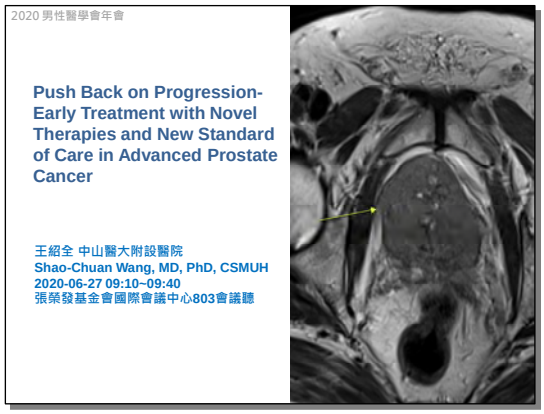
類 組	題 目	演 講 者
男性學論文獎(臨床組) 財團法人鳳凰泌尿科學文教基金會		
E-1 08:54-09:00	Degree of Planning of Sexual Intercourse among Men from China, Japan and Taiwan Taking Medication for Erectile Dysfunction: Findings of an Observational, Cross-sectional Survey	簡邦平醫師
E-2 09:00-09:06	The Role of SLC9A3 in Taiwanese Patients with Congenital Bilateral Absence of Vas Deferens (CBAVD)	吳宜娜 助理教授
男性學論文獎(基礎組)		
E-3 09:06-09:12	Dietary Modification is Associated with Normalization of Penile Hemodynamics in Rats Fed a High-fat-diet	黃雲慶醫師
E-4 09:12-09:18	SEPT14 Mutations and Teratozoospermia: Genetic Effect on Sperm Head Morphology and DNA Integrity	汪雅雲博士
江萬煊教授傑出研究論文獎		
E-5 09:18-09:24	Hepatocyte Nuclear Factor-4α P2 Promoter Variants are Associated with the Risk of Metabolic Syndrome and Testosterone Deficiency in Aging Taiwanese Men	劉家駒醫師
男性學論文獎(住院醫師組)		
E-6 09:24-09:30	The Relationship between Androgen Deprivation Therapy and Depression Symptoms in Patients with Prostate Cancer	陳一中醫師

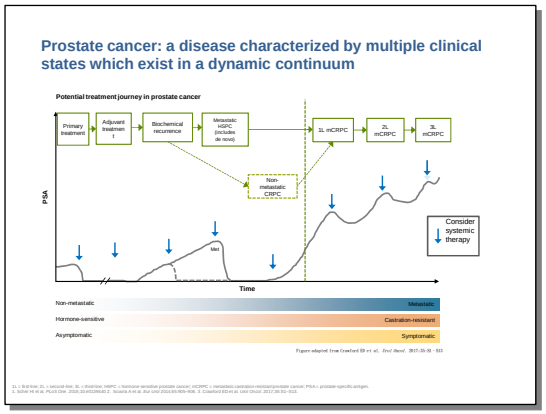
感謝合家歡休閒股份有限公司及財團法人鳳凰泌尿科學文教基金會，對於本會【男性學論文獎】之專款贊助與支持，特此列名申謝，無任感荷！

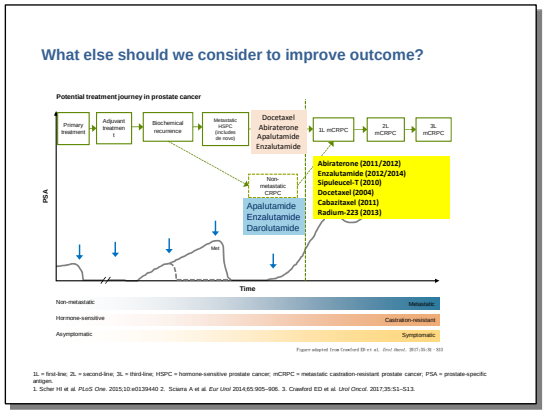
【Breakfast with Industry】

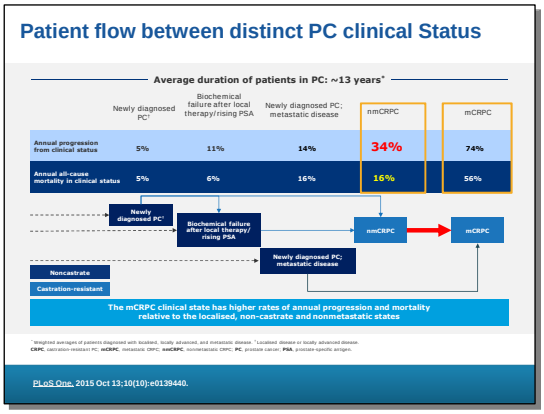
Push Back on Progression- Early Treatment with Novel Therapies and New Standard of Care in Advanced Prostate Cancer

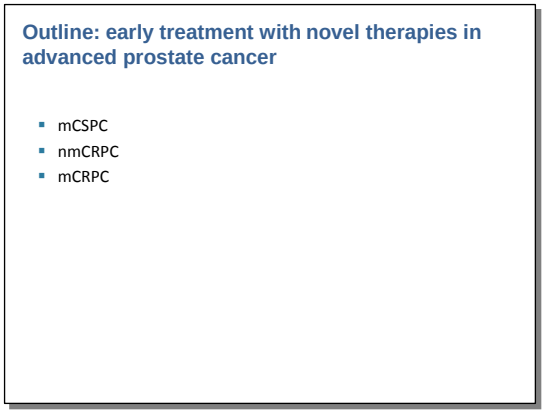
王紹全醫師
中山醫大附設醫院

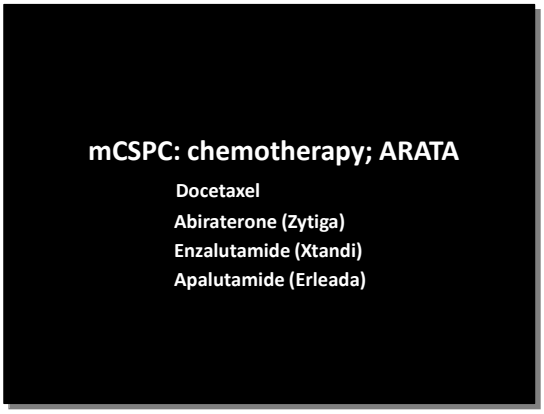








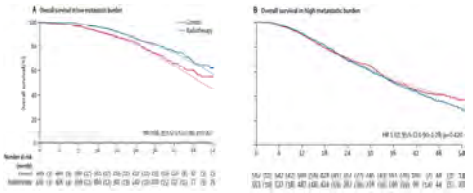




Radiotherapy to the primary tumour for newly diagnosed, metastatic prostate cancer (STAMPEDE): a randomised controlled phase 3 trial

Overall survival

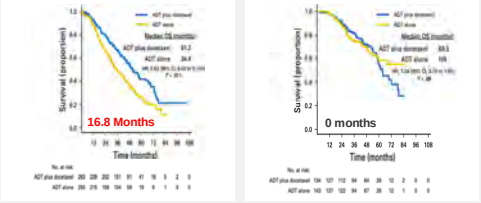
Low volume	High volume



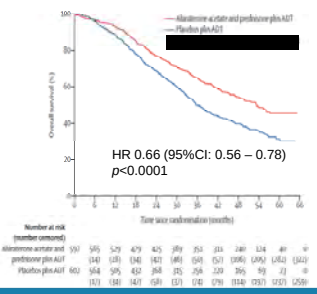
Learnings from CHAARTED: DOC + ADT

Median Follow-up: 53.7 months

Patients with high volume disease	Patients with low volume disease



LATITUDE – Final analysis: Overall Survival



+16.8 mo

Median treatment exposure:
ADT + AA +P: **25.8** mo
ADT + Placebo: 14.4 mo

Median overall survival:
ADT + AA +P: **53.3** mo
ADT + Placebo: 36.5 mo

- Median OS for patients receiving ADT+ AA+P reached **4.5** years, 16.8 months longer than ADT+placebo

Final Analysis: Secondary endpoints

Secondary End Points	ADT + AA + P (n = 597) Median (months)	ADT + placebos (n = 602) Median (months)	HR (95% CI)	P Value	
Time to pain progression	47.4	16.6	0.72 (0.61–0.86)	0.0002	+31 mo
Time to skeletal related event	NR	NR	0.75 (0.60–0.95)	0.0181	
Time to chemotherapy initiation	NR	57.6	0.51 (0.41–0.63)	<0.0001	
Time to subsequent PC therapy	54.9	21.2	0.45 (0.38–0.53)	<0.0001	+34 mo
Time to PFS2 (randomization to progression on subsequent therapy/death)	53.3	30.1	0.58 (0.49–0.68)	<0.0001	+23 mo

New AR target agents for mCSPC

Abiraterone Acetate	Apalutamide	Enzalutamide
STAMPEDE LATITUDE	**TITAN**	**ENZAMET**
Abiraterone + ADT Improves OS	Apalutamide + ADT Improves **rPFS** Improves **OS**	Enzalutamide + ADT Improves PFS and **OS**
Updated Guidelines		**ARCHES**
		Enzalutamide + ADT Improves **rPFS**
2017-2018	2019 May	2019 Jun-Jul

Study Descriptions

Characteristic	TITAN	ARCHES	ENZAMET	LATITUDE
Trial design	Randomized, Parallel Assignment, Triple Masking	Randomized, Double-blind, Placebo Controlled	Randomized, Parallel Assignment, Cooperative Group, Open Label	Randomized, Double-blind, Placebo Controlled
Treatment	Apalutamide 240 mg	Enzalutamide 160 mg	Enzalutamide 160 mg ± docetaxel	Abiraterone acetate 1,000 mg + prednisone 5 mg
Comparator	Placebo	Placebo	NSAA ± docetaxel	Placebo
Population	All-comers mCSPC, ≤6 cycles prior docetaxel, ECOG PS ≤1, ADT duration ≤6 months, ≥1 bone lesion ± visceral metastasis	All-comers mCSPC ECOG PS ≤1, current ADT duration ≤3 months unless prior docetaxel, then ≤6 months	Newly diagnosed metastatic PC	High Risk mCSPC: at least 2 of 3 of the following: Gleason ≥8, ≥3 lesions on bone scan, measurable visceral lesion
Stratification factors	• Gleason score at diagnosis (≤7 vs >7) • Region (North America and EU vs other countries) • Prior docetaxel use (yes vs no)	• Volume of disease • Prior docetaxel (none, 1-5, or 6 cycles)	• Volume of disease • Region • Concomitant "anti-resorptive" therapy • Comorbidities • Use of docetaxel in conjunction with initiation of ADT	• Visceral disease (yes/no) • ECOG PS (0, 1 vs 2)
Primary Endpoint	Dual-primary: • rPFS • OS	rPFS assessed centrally or death within 24 weeks of treatment discontinuation	OS	Co-primary: • rPFS • OS

Baseline Characteristics

Baseline Characteristic	TITAN[1-3] APA+ADT (n = 525)	TITAN[1-3] PBO+ADT (n = 527)	ARCHES[4] ENZA+ADT (n = 574)	ARCHES[4] PBO+ADT (n = 576)	ENZAMET[5,6] ENZ+ADT (n = 563)	ENZAMET[5,6] NSAA+ADT (n = 562)	LATITUDE[7,8] AAP+ADT (n = 597)	LATITUDE[7,8] PBO+ADT (n = 602)
Age, median, yr	69	68	70	70	69.2	69.0	68	67
Age, range, yr	45-94	43-90	46-92	42-92	63.2-74.5	63.6-74.5	38-89	33-92
ECOG PS 0, %	62.5	66.0	78	77	72	72	–	–
Gleason score ≥8	67	68	67	65	60	57	98	97
High-volume disease, yes, %	61.9	63.6	62	65	52	53	82	78
Prior therapy, %								
Docetaxel	**11.0**	**10.4**	**18**	**18**			NA	NA
% with 6 cycles of docetaxel	8.4	8.3	15.5	15.8			NA	NA
ADT	95	93	93	89	84	82	75	75
Anti-androgen	67	67	36	40	51	56	62	62
Prior local therapy	17.9	15.0			42.3	41.8	NA	NA
Concurrent Docetaxel					45%	44%		

rPFS

* : poster presentation at ASCO GU 2020

Patient Population	TITAN[1] 22.6 mos FU APA+ADT	TITAN[1] 22.6 mos FU PBO+ADT	ARCHES[2] IA1: 14.4 mos FU ENZA+ADT	ARCHES[2] IA1: 14.4 mos FU PBO+ADT	ENZAMET[3*] IA1: 33 mos FU ENZA+ADT	ENZAMET[3*] IA1: 33 mos FU NSAA+ADT	LATITUDE[4,5] 30.4 mos FU AAP+ADT	LATITUDE[4,5] 30.4 mos FU PBO+ADT
mCSPC all-comers overall	NR	22.1	NR	19.4			Not applicable	
	HR=0.484 (0.4-0.61); *P* <0.0001		HR=0.39 (0.30-0.50); *P* <0.0001		HR = 0.40 (95% CI, 0.33–0.49), P<0.001			
mCSPC HV	NR	14.9					33.08	14.7
	HR=0.53 (0.41-0.67)		R=0.44 (0.33-0.57)		HR = 0.45 (0.36–0.57)		HR=0.46; *P* <0.0001 **mCSPC HR HV*	
mCSPC LV		30.5					*NR*	*NR*
	HR=0.36 (0.22-0.57)		HR=0.24 (0.13-0.45)		HR = 0.30 (0.22–0.43)		*HR=0.59 (0.48-0.85); P = 0.0048 *mCSPC HR LV*	
mCSPC HR	0.44 (0.34-0.57)* *P*<0.0001		Not available		-		NR	34.7
							HR=0.62 (0.51-0.76); *P* <0.001	

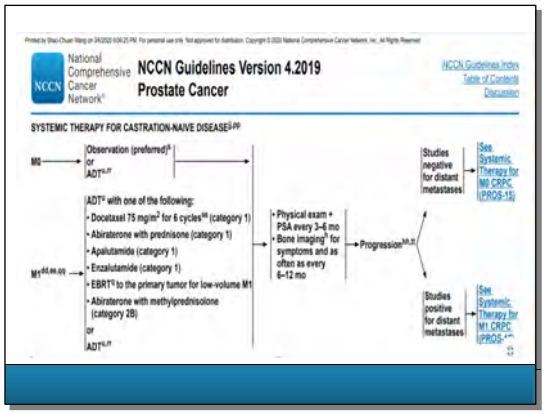
OS

* : poster presentation at ASCO GU 2020

Patient Population	TITAN[1] 22.6 mos FU APA+ADT	TITAN[1] 22.6 mos FU PBO+ADT	ARCHES[2] IA1: 14.4 mos FU ENZA+ADT	ARCHES[2] IA1: 14.4 mos FU PBO+ADT	ENZAMET[3] IA1: 33 mos FU ENZA+ADT	ENZAMET[3] IA1: 33 mos FU NSAA+ADT	LATITUDE[4,5] 30.4 mos FU AAP+ADT	LATITUDE[4,5] 30.4 mos FU PBO+ADT
mCSPC all-comers overall	NR	34.7	NR	NR	NR	NR	Not applicable	
	HR=**0.671** (0.51-0.90); *P* = 0.0053		HR=0.81 (0.53-1.25); *P* = 0.3361 (data immature)		HR=0.67 (0.52-0.86); *P* = 0.002			
mCSPC HV	NR	NR					*49.7*	*33.3*
	HR=0.68 (0.50-0.92)				R=0.80 (0.59-1.07)		*HR=0.62 (0.52-0.74); P <0.0001 (Final) *mCSPC HR HV*	
mCSPC LV	NR	NR					*NR*	*NR*
	HR=0.67 (0.34-1.32)				HR=0.43 (0.26-0.72)		*R=0.72 (0.47-1.10); P = 0.1242 (Final) *mCSPC HR LV*	
mCSPC HR	HR=0.62 (0.45-0.87)* *P* = 0.005						NR	34.7
							HR=0.62 (0.51-0.76); *P* <0.001	

Safety Summary

Safety	TITAN[1] APA+ADT (n = 524)	TITAN[1] PBO+ADT (n = 527)	ARCHES[2] ENZA+ADT (n = 574)	ARCHES[2] PBO+ADT (n = 576)	ENZAMET[3] ENZ+ADT (n = 563)	ENZAMET[3] NSAA+ADT (n = 558)	LATITUDE[4] AAP+ADT (n = 597)	LATITUDE[4] PBO+ADT (n = 602)
AEs, %								
Any grade	97	97	85.1	85.9	100	98	93	93
Grade ≥ 3	42	41	24.3	25.6	57	43	63	48
Serious AEs	20	20	–	–	42	34	28	24
AEs leading to discontinuation	8	5	7.2	5.2	16	4	12	10
Death due to AE on trial	2	3	2.4	1.7	–	–	5	4



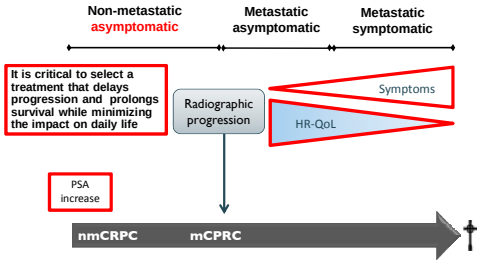
nmCRPC: ARATA- 2nd antiandrogen

Apalutamide (Erleada)

Enzalutamide (Xtandi)

Darolutamide

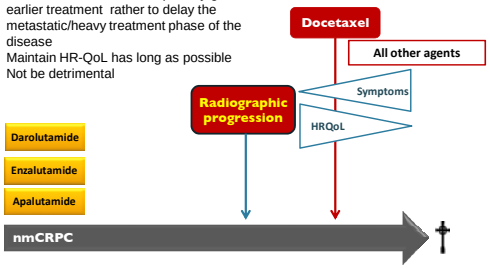
CRPC disease can be divided in three different, usually sequential disease states



1. Scher HI, et al. PLoS ONE. 2015;10(10):e0139440. 2. Mateo J, et al. Eur Urol. 2019;75(2):285-293. 3. Rönningdis U, et al. BMC Urol. 2019;19(66).

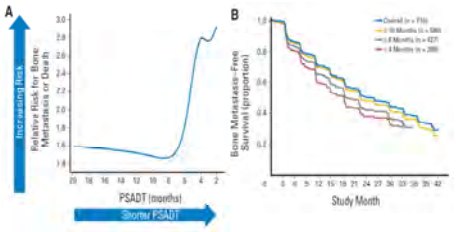
The hypothesis in PROSPER/SPARTAN/ARAMIS: earlier treatment, before the onset of metastases would further maintained the patient in a low burden/asymptomatic stage

- Extension of OS is not the primary goal of earlier treatment rather to delay the metastatic/heavy treatment phase of the disease
- Maintain HR-QoL has long as possible
- Not be detrimental



Relative Risk of Bone Metastases or Death by PSADT

1432 men with nmCRPC, rising PSA despite ADT and absence of radiographic evidence of metastatic disease



Conclusion: Patients with shorter PSADT are at greater risk for bone metastasis or death.

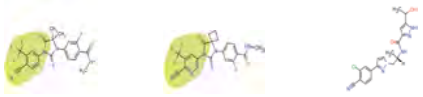
PSADT= t×log2/[log(final PSA)- log(initial PSA)]

Smith MR et al. *J Clin Oncol*. 2013;31(30):3800-3806

第二代抗雄性素藥物的比較：化學結構、作用機轉

化學結構 Enzalutamide和 Apalutamide較為類似

Enzalutamide　Apalutamide　Darolutamide

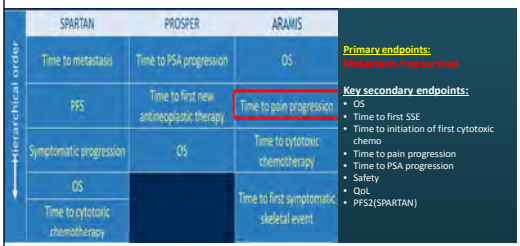


作用機轉 三種第二代抗雄性素藥物的作用機轉類似；但對第一代、第二代抗雄性素藥物具有抗藥性的雄性素受體突變(F877L、T878A、W742L)，Darolutamide亦具有活性

1. Ito Y, Sadar MD. Res Rep Urol. 2018;10:23-32. 2. Crona DJ, Whang YE. Cancers. 2017;9(6):E67. 3. Fizazi K, et al. Clin Genitourin Cancer. 2018;16(5):332-40.

SPARTAN/PROSPER/ARAMIS: Study Design In High-Risk nmCRPC

- Similar trial designs with Enzalutamide (PROSPER), Apalutamide (SPARTAN) and Darolutamide (ARAMIS)

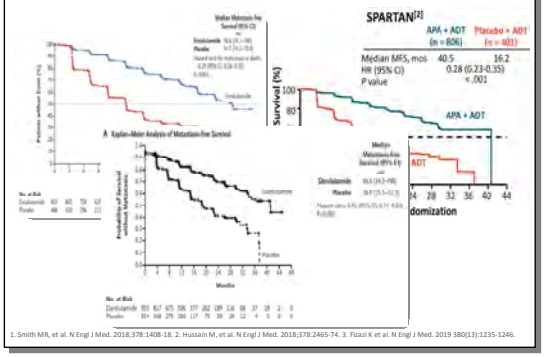


1. Smith MR, et al. N Engl J Med. 2018;378:1408-18. 2. Hussain M, et al. N Engl J Med. 2018;378:2465-74. 3. Fizazi K, et al. N Engl J Med. 2019

Overview of PHASE III Trials with a Primary Endpoint of MFS in nmCRPC

	ARAMIS[1-3]			SPARTAN[4,5]			PROSPER[6,7]		
Intervention	**Darolutamide vs Placebo**			**Apalutamide vs Placebo**			**Enzalutamide vs Placebo**		
Study design	Randomized (2:1); PSADT (≤6 vs >6 mo) and use of osteoclast-targeted therapy			Randomized (2:1); stratified based on PSADT (≤6 mo vs >6 mo), use of osteoclast-targeted therapy, and presence of locoregional disease			Randomized (2:1); stratified by PSADT (<6 mo vs ≥6 mo) and use of osteoclast-targeted therapy		
Accrual (targeted/actual)	1500/1508			1200/1207			1560/1401		
Dates	Start date	PCD	Final completion	Start date	PCD	Final completion	Start date	PCD	Final completion
	Sep 2014	Sep 2018	Jun 2020	Oct 2013	May 2017	Nov 2021	Oct 2013	Jun 2017	May 2020
Primary endpoints	MFS, time to metastasis or death								
Secondary endpoints	OS, time to first SSE, time to use of CT, time to pain progression, safety, time to first opiate use			Time to metastasis, PFS, time to symptomatic progression, OS, time to use of CT, PFS, safety, PK			Time to PSA progression, time to first use of new antineoplastic therapy, OS, time to first use of CT, HRQoL, time to CT-free disease specific survival, time to CT-free survival, time to pain progression, safety, PSA response rate		
Additional endpoints	PFS, time to first PC-related invasive procedure, initiation of subsequent antineoplastic therapy, PSA progression, PSA response, ECOG status, and HRQoL			Time to PSA progression, PSA response rate, HRQoL, PFS2			NA		
HRQoL	FACT-P, EORTC-QLQ-PR25, EQ-5D-3L			FACT-P and EQ-5D			FACT-P, EQ-5D-5L and QLQ-PR25		
Neuro-condition exclusions	None			History of seizure or any condition that may predispose to seizure					
Eligibility criteria	nmCRPC with PSADT ≤10 mo								
	screening PSA ≥2 ng/mL			screening PSA >2 ng/mL			screening PSA ≥2 ng/mL		

The ARAMIS/SPARTAN/PROSPER Trials: significantly delay MFS



1. Smith MR, et al. N Engl J Med. 2018;378:1408-18. 2. Hussain M, et al. N Engl J Med. 2018;378:2465-74. 3. Fizazi K et al. N Engl J Med. 2019 380(13):1235-1246.

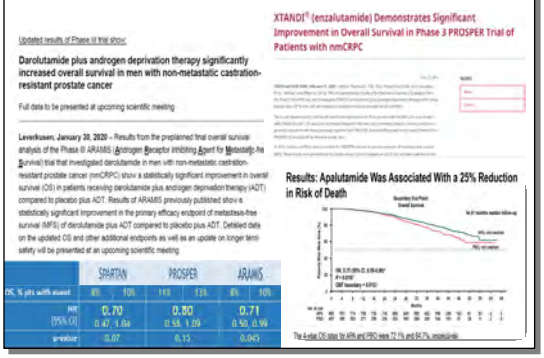
第二代抗雄性素藥物的比較：療效

三種第二代抗雄性素藥物的MFS中位數均為**3年**左右

藥物	Enzalutamide	Apalutamide	Darolutamide
第三期臨床試驗	PROSPER	SPARTAN	ARAMIS
M0 CRPC病人族群	PSA ≥2 ng/mL PSADT ≤10個月	PSA >2 ng/mL PSADT ≤10個月	PSA ≥2 ng/mL PSADT ≤10個月
試驗組別	Xtandi® 160 mg QD (n=933) vs. 安慰劑 (n=468)	Apalutamide 240 mg QD (n=806) vs. 安慰劑 (n=401)	Darolutamide 600 mg BID (n=955) vs. 安慰劑 (n=554)
mPSADT, mos	3.8 vs. 3.6	4.4 vs. 4.5	4.4 vs. 4.7
無轉移存活期 (MFS)中位數(主要療效評估指標)	36.6個月 vs. 14.7個月 HR=0.29 · P<0.001	40.5個月 vs. 16.2個月 HR=0.28 · P<0.001	40.4個月 vs. 18.4個月 HR=0.41 · P<0.001
中位數存活期	NR vs NR (HR=0.80; P=0.1519)	NR vs 39.0 mo (HR=0.70; P=0.07)	NR vs NR mo (HR=0.71; P=0.045)
PSA開始惡化的中位時間	37.2個月 vs. 3.9個月 HR=0.07 · P<0.001	未達中位數 vs. 3.7個月 HR=0.06 (追蹤中位時間為20.3個月)	33.2個月 vs. 7.3個月 HR=0.13 · P<0.001
PSA反應率	76% vs. 2%	89.7% vs. 2.2%	84% vs. 8%
首次使用新的抗腫瘤療法的中位時間	39.6個月 vs. 17.7個月 HR=0.21 · P<0.001	未達中位數 vs. 未達中位數 HR=0.44 (追蹤中位時間為20.3個月)	未達中位數 vs. 未達中位數 HR=0.33 · P<0.001 (追蹤中位時間為17.9個月)

1. Hussain M, et al. N Engl J Med. 2018;378(26):2465-74. 2. Smith MR, et al. N Engl J Med. 2018;378(15):1408-18. 3. Fizazi K, et al. N Engl J Med. 2019;380(13):1235-46.

ARAMIS and PROSPER demonstrate significantly increase in OS



Enza vs. apa

Meta-analysis

Actas Urol Esp. 2019 May 24. pii: S0210-4806(19)30071-3. doi: 10.1016/j.acuro.2019.03.007. [Epub ahead of print]

Efficacy of enzalutamide and apalutamide in the treatment of non-metastasic castration-resistant prostate cancer: Indirect comparison.

[Article in English, Spanish]
Nieto-Gómez P[1], Ubago-Pérez R[2], Cabeza-Barrera J[3].

There were **NO statistically significant differences** between enzalutamide+ADT vs. apalutamide+ADT
- MFS: HR (95% CI)=1.036 (0.781-1.373)
- PSA RR: a RR (95% CI)=0.81 (0.339-1.938)

Eur Urol Oncol. 2018 Aug;1(3):238-241. doi: 10.1016/j.euo.2018.04.004. Epub 2018 May 15.

Advanced Androgen Blockage in Nonmetastatic Castration-resistant Prostate Cancer: An Indirect Comparison of Apalutamide and Enzalutamide.

Wallis C.J[1], Chandrasekar T[2], Goldberg H[2], Klotz L[3], Fleshner N[4], Satkunasivam R[5], Klaassen Z[6].

We found **NO vidence of a significant difference**.
- MFS: HR (95% CI)=1.04 (0.78-1.37)
- No differences for any of the secondary outcomes

Eur Urol Oncol. 2018 Aug;1(3):238-241; Actas Urol Esp. 2019 May 24. pii: S0210-4806(19)30071-3. doi: 10.1016/j.acuro.2019.03.007. [Epub ahead of print]

MFS Progression Events by Type

	PROSPER		SPARTAN		ARAMIS	
	Enzalutamide (n=933)	Placebo (n=468)	Apalutamide (n=806)	Placebo (n=401)	Darolutamide (n=955)	Placebo (n=554)
All MFS events, n (%)[a]	219 (23)	228 (49)	184 (23)	194 (49)	221(23)	216 (39.0)
Death without documented radiographic progression n (%)[b]	32 (15)	4 (2)	10 (5.4)	1 (0.5)	41 (4.3)	19 (3.4)

a) Percentages are based on the total number of patients randomized in each arm; b) Percentages are based on the number of patients with an MFS event; 1) for enzalutamide: within 112 days of study treatment discontinuation, Hussain M, et al. NEJM. 2018;378:2465–2474; 2) for apalutamide: within 28 days of study treatment discontinuation Smith MR, et al. NEJM. 2018;378:1408-1418; 3) for darolutamide: Fizazi et al. NEJM 2019 Feb 14. [Epub ahead of print]

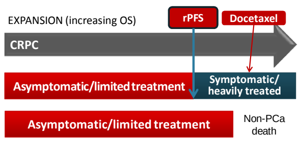
第二代抗雄性素藥物的比較
藥物動力學、服用方式、美國FDA核准狀態

Xtandi®和apalutamide為一天服用一次的劑型，可隨餐或空腹服用，比darolutamide的服用方式更具便利性[1,2]

藥物	Enzalutamide	Apalutamide	Darolutamide
劑量	160 mg每天口服一次	240 mg每天口服一次	600 mg每天口服兩次
隨餐或空腹服用	可隨餐或空腹服用	可隨餐或空腹服用	須隨餐服用
半衰期	5.8天	3~4天	15.8小時 (代謝產物10小時)
代謝	肝臟	肝臟	肝臟
美國FDA核准用於治療高風險M0 CRPC的狀態	已核准	已核准	已核准

FDA=Food and Drug Administration; M0 CRPC=non-metastatic castration-resistant prostate cancer.
1. Arnm J, Aragon-Ching JB. Clin Med Insights Oncol. 2019;13:1-5. 2. Higano C. Nat Rev Urol. 2019;16(6):335-6.

Early treatment: Making CRPC a chronic disease



A vision for the US National Cancer Program Andrew C. von Eschenbach, 12th Director NCI

"our scientific quest for knowledge will ensure that we will eventually see a time when cancers can become manageable, chronic diseases"

COMPRESSION (reducing time with symptoms, buying quality time)

Early treatment	MFS/FFS endpoint	n	HR for MFS	95% CI; *P* value
	Apalutamide vs. placebo[1] (SPARTAN)	1207	0.28	0.23 to 0.35; P<0.001
	Enzalutamide vs. placebo[2] (PROSPER)	1401	0.29	0.24 to 0.35; *P*<0.0001
	Darolutamide vs. placebo[3] (ARAMIS)	1509	0.41	0.34 to 0.50; P<0.001

Patient report outcome (PRO): questionnaires and assessment frequency

	SPARTAN	PROSPER	ARAMIS
PRO	FACT-P and EQ-5D	BPI-SF, FACT-P, EQ-5D-3L, QLQ-PR25	BPI-SF, FACT-P, EQ-5D-3L, QLQ-PR25
Frequency of FACT-P Assessment	Q4 weeks C1-6, Q8 weeks C7-13, Q16 weeks C14+	Q16 weeks	Q16 weeks
Frequency of CTCAE Assessment	D1, D29 of C1, Q4 weeks C2-6 Q8 weeks C7-13 Q16 weeks C14+	Day 1, D29 of C1, Q16 weeks C2+	Day1, D15, D29 of C1, Q16 weeks C2+
Completion rate (≥50%)	>90%	≥90%	≥90%*

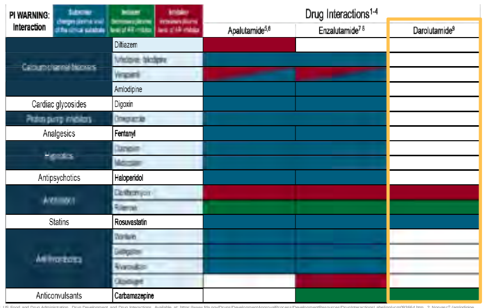
第二代抗雄性素藥物的比較：安全性

Apalutamide發生率**≥15%**的不良反應項目，高於其他兩種第二代抗雄性素藥物

試驗	PROSPER		SPARTAN		ARAMIS	
試驗組別	Xtandi® 160 mg QD (n=930)	安慰劑 (n=465)	Apalutamide 240 mg QD(n=803)	安慰劑 (n=398)	Darolutamide 600 mg BID(n=954)	安慰劑 (n=554)
任何不良反應	87%	77%	96.5%	93.2%	83.2%	76.9%
任何等級≥3不良反應	31%	23%	45.1%	34.2%	24.7%	19.5%
任何嚴重不良反應	24%	18%	24.8%	23.1%	24.8%	20.0%
因不良反應而停止治療	9%	6%	10.6%	7.0%	8.9%	8.7%
因不良反應而導致死亡	3%	1%	1.2%	0.3%	0.1%	0.4%
常見不良反應(任何組別發生率≥15%)						
無力/疲勞	**33%**	14%	**30.4%**	21.1%	12.1%	8.7%
高血壓	12%	5%	**24.8%**	19.8%	6.6%	5.2%
皮疹	NR	NR	**23.8%**	5.5%	2.9%	0.9%
腹瀉	10%	10%	**20.3%**	15.1%	6.9%	5.6%
噁心	11%	9%	**18.1%**	15.8%	5.0%	5.8%
體重減輕	6%	2%	**16.1%**	6.3%	3.6%	2.2%
關節痛	8%	7%	**15.9%**	7.5%	8.1%	9.2%
跌倒	11%	4%	**15.6%**	9.0%	4.2%	4.7%
甲狀腺低下	NR	NR	8.1%	2.0%	0.2%	0%

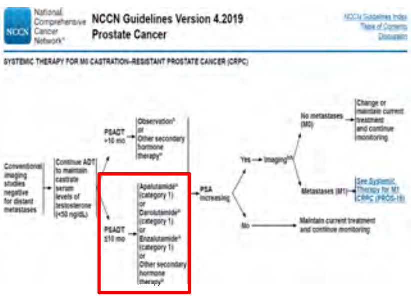
1. Hussain M, et al. N Engl J Med. 2018;378(26):2465-74. 2. Smith MR, et al. N Engl J Med. 2018;378(15):1408-18. 3. Fizazi K, et al. N Engl J Med. 2019;380(13):1235-46.

Drug–Drug Interactions Between Commonly Prescribed Drugs and AR Inhibitors



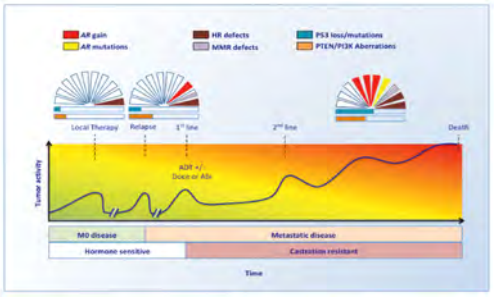
1. US Food and Drug Administration. Drug Development and Drug Interactions. Available at: https://www.fda.gov/Drugs/DevelopmentApprovalProcess/DevelopmentResources/DrugInteractionsLabeling/ucm093664.htm. 2. Norvasc® (amlodipine besylate) [prescribing information]. New York, NY: Pfizer Inc.; 2019. 3. Haldol® (haloperidol) [prescribing information]. Titusville, NJ: Janssen Pharmaceuticals, Inc.; 2019. 4. Procardia® (nifedipine) [prescribing information]. New York, NY: Pfizer Inc.; 2016. 5. ERLEADA. [SmPC]. Janssen Pharmaceuticals, Inc.; 2019. 6. Erleada® [prescribing information]. Horsham, PA: Janssen Pharmaceuticals, Inc.; 2019. 7. Xtandi® [prescribing information]. New York, NY: Astellas Pharmaceuticals; 2018. 8. XTANDI [SmPC]. Astellas Pharmaceuticals; 2019. 9. NUBEQA® (darolutamide) [US package insert]. Whippany, NJ: Bayer HealthCare Pharmaceuticals Inc.; 2019.

NCCN Guidelines: AR pathways inhibitors are recommended if PSA-DT ≤ 10 months



mCRPC: PARP inhibitor; Carbazitaxel

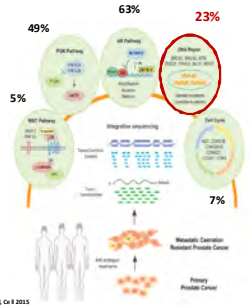
DNA damage response (DDR), homologous recombination repair (HRR)



Homologous recombination repair
is a key mechanism for the repair of DNA double strand breaks

1. Lord CJ and Ashworth A. *Nature.* 2012;481:287-293; 2. Rey R et al. *Nat Rev Cancer.* 2012;12:68–78.
2. Prostate Cancer an dProstatic Diseases (2018) 22:195–205

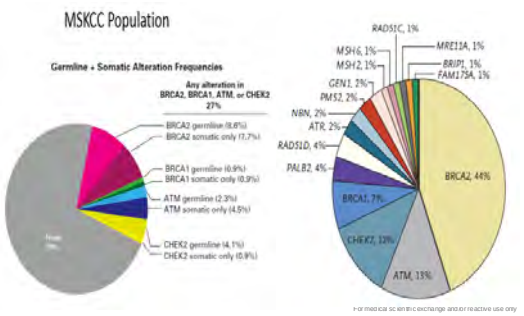
Whole genome analysis reveals heterogenicity in prostate cancer



- Multi-institutional NGS analysis with 150 mCRPC patients?**tumor biopsy** (bone or soft tissue) and **whole blood**
- Approximately **90%** of mCRPC harbor clinically actionable molecular alterations
- **23%** (34/150) of mCRPC harbor DNA repair pathway aberrations

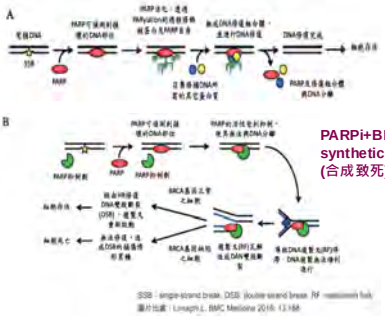
Robinson et al, Cell 2015

Germline mutations in DNA-repair processes among mPCa was around 10 %



For medical scientific exchange and/or reactive use only

The role of PARP in DNA repair pathway



PARPi+BRCA mutation: synthetic lethality (合成致死)

Olaparib has been investigated as a novel monotherapy in mCRPC

Olaparib monotherapy → PARP inhibition **AND** trapping to block DNA repair pathways in cells harbouring HRR defects[1] → **Antitumour activity**

STUDY42[1]

Phase II trial (single arm), gBRCA advanced solid tumours
Olaparib capsules

Included patients with gBRCA mCRPC (N=8)

Study 42 demonstrated tumour responses in patients with gBRCAm advanced prostate cancer

Primary endpoint
- Response Rate defined by any one of the following:
  - Response per RECIST v1.1
  - PSA[4]
  - Conversion of CTC count ≥5 cells/7.5 mL blood at baseline to <5 cells/7.5 mL

Key Secondary endpoints
- Radiological PFS
- OS
- Time to PSA progression
- PFS
- Safety and tolerability

Biomarker assessment
- DNA Repair Defects, PTEN, TMPRSS2:ERG mutations

RP[2,3]

mCRPC post-docetaxel
tablets

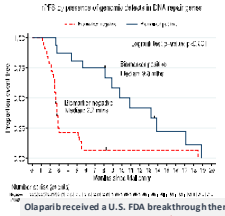
TOPARP-B
Prospectively recruited patients mCRPC + DNA damage repair defects (tumour)

Validated TOPARP-A study findings of activity in biomarker-selected mCRPC (incl. HRR gene defects)!

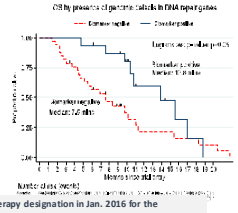
1. Kaufman B et al. Olaparib monotherapy in patients with advanced cancer and a germline BRCA1/2 mutation. J Clin Oncol 2015; 33:244–250; 2. Mateo J et al. DNA-Repair Defects and Olaparib in Metastatic Prostate Cancer N Engl J Med. 2015; 373:1697–1708; 3. Mateo J et al. TOPARP-B: A phase II randomized trial of the poly(ADP)-ribose polymerase (PARP) inhibitor olaparib for metastatic castration-resistant prostate cancers (mCRPC) with DNA damage repair (DDR) alterations. Presented at: 2019 ASCO Annual Meeting; May 31–Jun 4, 2019; Chicago, IL. Presentation 5005.

Phase II TOPARP-A: Longer rPFS & OS are observed in biomarker positive mCRPC patients

rPFS



Overall Survival



Olaparib received a U.S. FDA breakthrough therapy designation in Jan. 2016 for the treatment of patients with **BRCA1/2** or **ATM** mutated mCRPC based on results of TOPARP-A.

Mateo et al. 2015.NEJM

TOPARP-B study design:

Phase II, open-label, 2-arm, randomized study

The purpose of TOPARP B was to evaluate the efficacy of 2 doses (300 mg BID and 400 mg BID) of olaparib in patients with mCRPC with progression after 1 or 2 regimens of chemotherapy and harboring mutations in DDR genes

- Histologically confirmed mCRPC
- Previously received androgen deprivation and taxane-based therapies
- ECOG PS ≤2
- Adequate organ and bone marrow function
- CTC count of ≥5 cells/7.5 mL blood at screening
- **Must have DDR mutation**

1:1 R

Olaparib tablets
300 mg BID
In a 28 day cycle until PD
N=44

Olaparib tablets
400 mg BID
In a 28 day cycle until PD
N=44

Primary endpoint:
Response rate (composite)
Response Rate to olaparib was defined by any of the following

- **Confirmed ORR (RECIST v1.1)**
- **Minimum of a 50% reduction in PSA level (PCWG2)**
- **Conversion of CTC count from ≥5 cells/7.5 mL blood at baseline to <5 cells/ 7.5 mL**

PSA and CTC response needed confirmation by a 2nd consecutive value ≥ 4 weeks later

Secondary endpoints: Radiological PFS ,PFS, Safety and tolerability, OS

Planned subgroup analysis by gens altered: **BRCA1/2(327%), ATM(21.4%), PALB2(7.1%), CDK12(21.4%), others(21.4%)**

Results: Primary Endpoint Analyses

- 98 randomized, 92 evaluable for primary endpoint analysis (6 found ineligible/not evaluable and excluded as per SAP/IDMC).

	Total (n=92)			Dose group					
				300mg (n=46)			400mg (n=46)		
	resp/n	%	95% CI	resp/n	%	95% CI	resp/n	%	95% CI
Composite Response (confirmed)	43/92	46.7%	36.3-57.4	18/46	39.1%	25.1-54.6	25/46	54.3%	39.0-69.1
RECIST Response	14/70	20.0%	11.4-31.3	6/37	16.2%	6.2-32.0	8/33	24.2%	11.1-42.3
PSA Response ≥50%	30/89	33.7%	24.0-44.5	13/43	30.2%	17.2-46.1	17/46	37.0%	23.2-52.5
CTC conversion	28/55	50.9%	37.1-64.6	13/27	48.1%	28.7-68.1	15/28	53.6%	33.9-72.5
RECIST / PSA response	32/92	34.8%	25.1-45.4	13/46	28.3%	16.0-43.5	19/46	41.3%	27.0-56.8

Per design, ≥19 "composite responses" needed in either arm to recommend dose → 400 mg BID cohort meet threshold → biomarker identified in TOPARP-A is considered validated.

Mateo, et al. J Clin Oncol 37, 2019 (suppl; abstr

Results: Primary endpoint per gene subgroup (evaluable n=92)

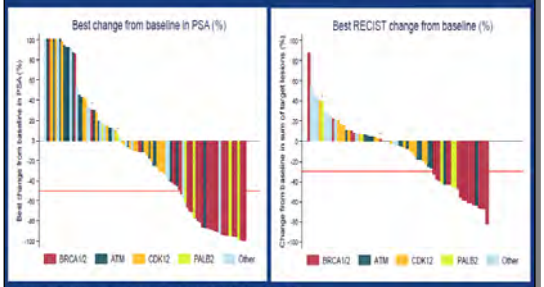
	Group 1: BRCA1/2 (n=30)		Group 2: ATM (n=19)		Group 3: CDK12 (n=20)		Group 4: PALB2 (n=7)		Group 5: Other (n=20)	
	resp/n	%	resp/n	%	resp/n	%	resp/n	%	resp/n	%
Composite Response (confirmed)	25/30	83.3%	7/19	36.8%	5/20	25.0%	4/7	57.1%	4/20	20.0%
RECIST Objective Response	11/21	52.4%	1/12	8.3%	0/18	0.0%	2/6	33.3%	0/17	0.0%
PSA response ≥50%	23/30	76.7%	1/19	5.3%	0/20	0.0%	4/6	66.7%	2/17	11.8%
CTC conversion	17/22	77.3%	5/10	50.0%	5/12	41.7%	0/2	0.0%	3/11	27.3%
RECIST / PSA response	24/30	80.0%	2/19	10.5%	0/20	0.0%	4/7	57.1%	2/20	10.0%

Non-mutually exclusive subgroups - one patient with BRCA1/2+CDK12+Other mutations and two patients with PALB2+Other mutations included in analysis for each subgroup separately.

Other mutations – 4 responders with mutations in: *BRCA2+CDK12+CHEK2* (CTC response), *FANCA* (CTC/PSA response), *WRN* (CTC response), *CHEK2* (PSA response)

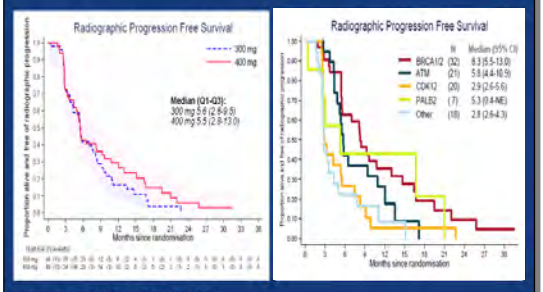
Mateo, et al. J Clin Oncol 37, 2019 (suppl; abstr

Results: Secondary endpoints per gene subgroup (ITT n=98)



Patients with mutations in more than one subgroup are marked in the above figures (*)

Results: Secondary Endpoints Analysis



Analyses performed on ITT population (all 98 patients)

Results: Safety and Tolerability

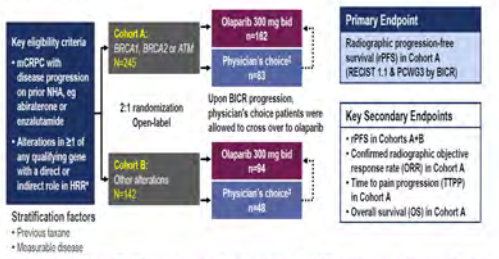
Treatment-Emergent Adverse Events (%)

	Total (N=98)		300mg (N=49)		400mg (N=49)	
	% G1+	% G3+	% G1+	% G3+	% G1+	% G3+
Anaemia	69.4	33.7	63.3	30.6	75.5	36.7
Fatigue	54.1	7.1	44.9	6.1	63.3	8.2
Back pain	31.6	7.1	34.7	8.2	28.6	6.1
Nausea	30.6	1.0	36.7	2.0	24.5	0.0
Thrombocytopenia	26.5	6.1	22.4	4.1	30.6	6.1
Vomiting	25.5	0.0	20.4	0.0	30.6	0.0
Decreased appetite	25.5	2.0	30.6	4.1	20.4	0.0
Weight decreased	24.5	1.0	18.4	2.0	30.6	0.0
Diarrhoea	20.4	2.0	18.4	2.0	22.4	2.0
Arthralgia	18.4	5.1	18.4	2.0	18.4	8.2
Neutropenia	18.4	9.1	22.4	4.1	14.3	6.1
Hypertension	17.3	5.1	18.4	2.0	16.3	8.2
Dyspnoea	17.3	2.0	12.2	2.0	22.4	2.0
Abdominal pain	16.3	5.1	8.2	0.0	24.5	10.2
Urinary tract infection	15.3	6.1	12.2	6.1	18.4	6.1
Creatinine increased	15.3	0.0	18.4	0.0	12.2	0.0
Oedema peripheral	15.3	1.0	12.2	0.0	18.4	2.0

Dose-reductions:
- 36.7% at 400mg
- 12.2% at 300mg

Discontinuations due to AE:
- 26.7% at 300mg
- 10.4% at 400mg

PROfound STUDY DESIGN



*An investigational Clinical Trial Assay, based on the FoundationOne® CDx next-generation sequencing test Developed in partnership with Foundation Medicine Inc, and used to prospectively select patients harboring alterations in *BRCA1, BRCA2, ATM, BARD1, BRIP1, CDK12, CHEK1, CHEK2, FANCL, PALB2, PPP2R2A, RAD51B, RAD51C, RAD51D* and/ or *RAD54L* in their tumor tissue

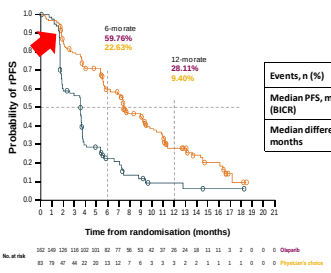
†Physician's choice of either enzalutamide (160 mg qd) or abiraterone (1000 mg qd + prednisone (5 mg bid))
BICR, blinded independent central review

Baseline characteristics were generally well balanced between arms

		Cohort A		Cohorts A+B*	
		Olaparib (N=162)	Physician's choice (N=83)	Olaparib (N=256)	Physician's choice (N=131)
Patients with alteration(s) in a single HRR gene, n (%)	*BRCA1 or BRCA2*	88 (54.3)	52 (62.7)	89 (34.8)†	52 (39.7)
	ATM	60 (37.0)	24 (28.9)	62 (24.2)	24 (18.3)
	Others	-	-	88 (34.4)	44 (33.6)
Patients with co-occurring alterations, n (%)		14 (8.6)	7 (8.4)	17 (6.6)	11 (8.4)
Median age (range), years		**68 (47–86)**	**67 (49–86)**	**69 (47–91)**	**69 (49–87)**
Metastatic disease at initial diagnosis, n (%)		**38 (23.5)**	**19 (22.9)**	**66 (25.8)**	**25 (19.1)**
Site of metastases, n (%)	Bone only	57 (35.2)	23 (27.7)	86 (33.6)	38 (29.0)
	Visceral (e.g. lung/liver)	46 (28.4)	32 (38.6)	68 (26.6)	44 (33.6)
	Other	49 (30.2)	23 (27.7)	88 (34.4)	41 (31.3)
Measurable disease at baseline, n (%)		95 (58.6)	46 (55.4)	149 (58.2)	72 (55.0)
Median (Q1, Q3) baseline PSA, µg/L		**62.2 (21.9, 280.4)**	**112.9 (34.3, 317.1)**	**68.2 (24.1, 294.4)**	**106.5 (37.2, 326.6)**
ECOG performance status, n (%)	0–1	151 (93.2)	80 (96.4)	243 (94.9)	126 (96.2)
	2	11 (6.8)	3 (3.6)	13 (5.1)	4 (3.1)
Prior new hormonal agent	Enzalutamide	68 (42.0)	40 (48.2)	105 (41.0)	54 (41.2)
	Abiraterone	62 (38.3)	29 (34.9)	100 (39.1)	54 (41.2)
	Abiraterone + enzalutamide	**32 (19.8)**	**14 (16.9)**	**51 (19.9)**	**23 (17.6)**
Previous taxane use, n (%)	**Yes‡**	**106 (65.4)‡**	**52 (62.7)**	**170 (66.4)**	**84 (64.1)**
	Docetaxel	74 (45.7)	42 (50.6)	113 (44.1)	59 (45.0)
	Cabazitaxel	2 (1.2)	0 (0.0)	3 (1.2)	0 (0.0)
	Docetaxel + cabazitaxel	**29 (17.9)**	**20 (24.1)**	**51 (19.9)**	**26 (19.8)**

PROfound met its primary endpoint: olaparib significantly improved rPFS by BICR in patients with alterations in BRCA1, BRCA2 or ATM (Cohort A) vs. physician's choice

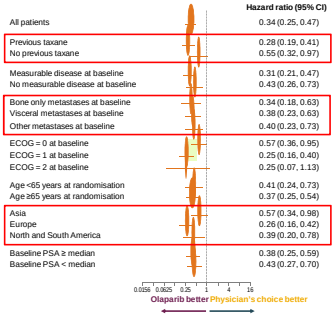
Olaparib reduced the risk of progression or death by 66% vs. physician's choice



	Olaparib 300 mg BID tablets (n=162)	Physician's choice (n=83)
Events, n (%)	106 (65.4)	68 (81.9)
Median PFS, months (BICR)	7.39	3.55
Median difference, months	+3.84	
	HR=0.34, 95% CI (0.25, 0.47) P<0.0001	

For medical scientific exchange and/or reactive use only

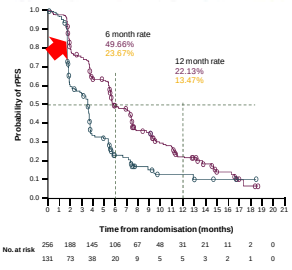
rPFS benefit with olaparib was seen across prespecified subgroups in patients with alterations in BRCA1, BRCA2 or ATM (Cohort A)



Statistically significant and clinically meaningful improvement in BICR-assessed rPFS in olaparib vs. physician's choice-treated patients (Cohort A+B)

Key secondary endpoint

rPFS BY BICR IN THE OVERALL POPULATION (COHORTS A+B)



	Olaparib 300 mg BID tablets (n=256)	Physician's choice (n=131)
Events, n (%)	180 (70.3)	99 (75.6)
Median PFS, months	5.82	3.52
Median difference, months	+2.3	
	HR=0.49 95% CI (0.38, 0.63) P<0.0001	

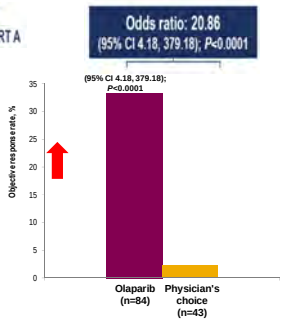
Patients with a qualifying HRRm experienced a significant improvement in median rPFS (+2.3 months)

For medical scientific exchange and/or reactive use only

Significantly more patients with alterations in BRCA1, BRCA2 or ATM (Cohort A) had an objective response whilst on olaparib vs. physician's choice (RECIST v1.1)

Key secondary endpoint

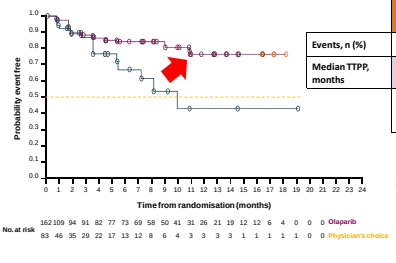
CONFIRMED ORR IN COHORT A



Median time to pain progression (TTPP) was significantly increased for olaparib vs. physician's choice among patients in Cohort A

Key secondary endpoint

TIME TO PAIN PROGRESSION* IN COHORT A



	Olaparib 300 mg BID tablets (n=162)	Physician's choice (n=83)
Events, n (%)	21 (13.0)	14 (16.9)
Median TTPP, months	NR	9.92
	HR=0.44 95% CI (0.22, 0.91) P=0.0192	

Statistical significance in TTPP allowed evaluation of interim overall survival as part of the multiplicity testing procedure

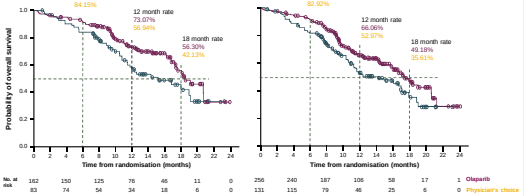
For medical scientific exchange and/or reactive use only

At interim analysis olaparib had a favourable trend in OS in patients with alterations in BRCA1, BRCA2 or ATM (Cohort A), despite >80% cross-over

The current OS is immature. Final OS will be assessed as part of the planned multiplicity testing procedure

Cohort A *Part of MTP*	Olaparib (N=162)	Physician's choice (N=83)
Median OS (months)	18.50	15.11
Hazard ratio (95% CI)	0.64 (0.43, 0.97) P=0.0173†	

Cohort A+B *Exploratory*	Olaparib (N=256)	Physician's choice (N=131)
Median OS (months)	17.51	14.26
Hazard ratio (95% CI)	0.67 (0.49, 0.93) P=0.0063 (nominal)	



PROfound: survival by prior taxane status

Table 2. Subgroup analyses of rPFS by prior taxane status in patients

	Prior taxane	Number of events, n (%) Olaparib	Number of events, n (%) pcNHA	Median rPFS, months Olaparib	Median rPFS, months pcNHA	HR (95% CI)
Cohort A	Yes	72 (67.9)	47 (60.4)	7.4	1.9	0.28 (0.19, 0.41)
	No	34 (60.7)	21 (67.7)	7.4	4.1	0.55 (0.32, 0.97)
Cohorts A+B	Yes	124 (72.9)	70 (63.3)	5.6	2.6	0.39 (0.29, 0.53)
	No	56 (65.1)	29 (61.7)	5.8	4.8	0.77 (0.50, 1.22)

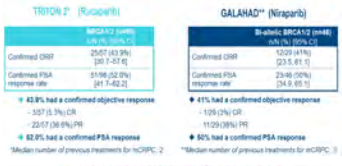
Table 3. Subgroup analyses of OS by prior taxane status in patients

	Prior taxane	Number of events, n (%) Olaparib	Number of events, n (%) pcNHA	Median OS, months Olaparib	Median OS, months pcNHA	HR (95% CI)
Cohort A	Yes	39 (36.8)	30 (57.7)	17.3	11.7	0.57 (0.36, 0.93)
	No	15 (26.8)	9 (29.0)	20.7	19.1	0.84 (0.38, 2.01)
Cohorts A+B	Yes	73 (42.9)	49 (58.3)	15.8	11.4	0.61 (0.43, 0.85)
	No	24 (27.9)	14 (29.8)	20.7	19.1	0.87 (0.45, 1.72)

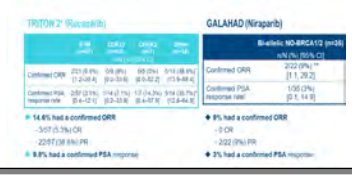
Studies of PAPRi trials in monotherapies for mCRPC

	Olaparib 300mg BID	Rucaparib 600 mg bid	Niraparib 300 mg qd	Talazoparib 1 mg qd	Rucaparib 600mg bid
	AZ/MERCK	CLOVIS	GSK	PFIZER	CLOVIS
Trial name	PROfound	TRITON-2	GALAHAD	TALAPRO-1	TRITON-3
Phase	3	2	2	2	3
N	387	360	301	100	400
Population	Post NHA only requirement (Pre- & post-chemo)	Post NHA and Post-chemo (only x1 taxane)	Post NHA and Post-chemo	Post NHA and Post-chemo	No chemo in mCRPC (allowed for mHSPC)
Primary endpoint	rPFS (BICR)	ORR and PSA50	ORR	ORR	rPFS
Primary endpoint focus	HRRm	DDR alteration	Bi-allelic BRCA1/2	DDR alteration	BRCA1/2,ATM
Specimen tested	Tumor tissue Central	Plasma or tumor tissue Central/Local	Plasma Central with focus on biallelic alterations	Tumor Tissue Central/Local	Plasma or tumor tissue Central/Local
Test used	FoundationOne	FoundationOne Foundation ACT	Resolution-HRD	FoundationOne	NA
Tissue Germline ctDNA	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes	Yes Yes ?	Yes Yes Yes
HRRm gene selected	BRCA1/2,ATM, BARD1, BRIP1, CDK12, CHEK1,CHEK2, FANCL, PALB2 , PPP2R2A, RAD51B, RAD51C, RAD51D, RAD54L	Cohort A and B: BRCA1/2 or ATM Cohort C: ARID1A, BRIP1, CDK12, CHEK2, FANCL, MRE11A, PALB2 , RAD51B, RAD51C, RAD51D, RAD54L	BRCA1/2, ATM, FANCA, PALB2, CHEK2, BRIP1, HDAC2	BRCA1/2,ATM,ATR, CHEK2,FANCA,RAD51C, MRE11A,NBN,PALB2, RAD54L	BRCA1/2, ATM

Response to PARPi in patients with *BRCA1/2* alterations

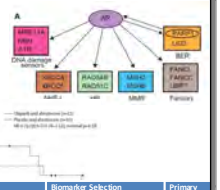


Response to PARP inhibitors in patients with no-*BRCA* DDR alterations



What else?

- **PARPi + ARTA**



Trial	N	Setting	Experimental Arm	Control Arm	Biomarker Selection	Primary Outcome
PROpel NCT03732820	720	mCRPC 1st line	Olaparib + abiraterone	Placebo + abiraterone	All comers	rPFS
MAGNITUDE NCT03748641	1000	mCRPC 1st line	Niraparib + abiraterone	Placebo + abiraterone	Cohort 1 (N = 400): BRCA1, BRCA2, FANCA, PALB2, CHEK2, BRIP1, HDAC2, ATM Cohort 2 (N = 600): no DRD	rPFS
TALAPRO2 NCT03395197	872	mCRPC 1st line	Talazoparib + enzalutamide	Placebo + enzalutamide	All comers	rPFS

From PARP inhibitor studies we learn: in mCRPC....

DNA repair related gene deficiency could benefit from PARP inhibition.

BRCA1/2 mutation carriers might have better response/durability toward PARP inhibition in comparison to other HRR mutations.

Most common AEs: **anemia, nausea, fatigue** and other **hematological side effects**.

Higher dose, higher rate of AEs: There's correlation between dose and efficacy.

PROfound & PARPi monotherapy study:

- BICR **rPFS, ORR, TTPP benefit** compared with physician's choice of enzalutamide/abiraterone + prednisone In patients with HRRm
- A **favorable trend of OS** in *BRCA1/2* and/or *ATM* (HR=0.64), and in the overall population (HR=0.67)

Phase 3 trials of combinations of **PARP inhibitors with AR pathway inhibitors & immune check-point inhibitors** are underway in selected and unselected patients

Chemotherapy in mCRPC Update: Cabazitaxel (CARD trial)

CARD trial

CARD STUDY DESIGN

- Multicenter, randomized, open-label study
- Enrollment: Nov 2015 – Nov 2018
- Median follow-up: 9.2 months

Patients with mCRPC who progressed ≤ 12 months on prior ARTA (before or after docetaxel) N = 255

RANDOMIZE 1:1

- Cabazitaxel (25 mg/m² Q3W) + P + G-CSF n = 129
- Abiraterone (1000 mg QD) + P OR Enzalutamide (160 mg QD) n = 126

Endpoints

Primary: rPFS

Key secondary: OS, PFS, PSA response, tumor response

Other secondary: Pain response and progression, time to SSEs, safety, FACT-P, EQ-5D-5L, biomarkers

Stratification factors:

- ECOG PS (0/1 vs 2)
- Time to progression on prior alternative ARTA (0–6 vs > 6–12 months)
- Timing of ARTA (before vs after docetaxel)

- Duration of one cycle was 3 weeks in each arm
- Treatment until image-based progression, unacceptable toxicity or further study treatment

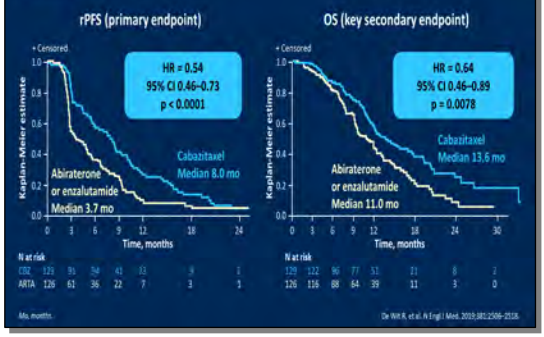
De Wit R, et al. N Engl J Med. 2019;381:2506–2518.

PATIENT CHARACTERISTICS

	Cabazitaxel (N = 129)	Abiraterone or enzalutamide (N = 126)
Median age, years (range)	70.0 (46–85)	71.0 (45–88)
≥ 75 years, n (%)	45 (34.9)	34 (27.0)
ECOG PS 0–1, n (%)	123 (95.3)	119 (94.4)
Disease location at study entry, n (%)		
Bone	74 (57.4)	76 (60.3)
Lymph nodes	8 (6.2)	6 (4.8)
Visceral metastases	21 (16.3)	25 (19.8)
Type of progression at study entry, n (%)		
PSA only	11 (8.5)	10 (7.9)
Radiologic (± PSA), no pain	23 (17.8)	16 (12.7)
Pain (± PSA, ± radiologic)	86 (66.7)	90 (71.4)
Gleason 9–10 at diagnosis, n (%)	73 (56.6)	81 (64.3)
M1 disease at diagnosis, n (%)	49 (38.0)	60 (47.6)
Prior life-extending therapies, n (%)		
Docetaxel	129 (100)	126 (100)
Abiraterone	56 (43.4)	67 (53.2)
Enzalutamide	72 (55.8)	59 (46.8)
Prior denosumab or bisphosphonate use, n (%)	27 (20.9)	46 (36.5)

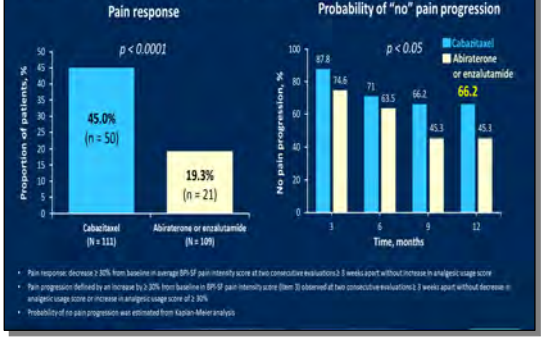
De Wit R, et al. N Engl J Med. 2019;381:2506–2518.

MAIN CLINICAL RESULTS

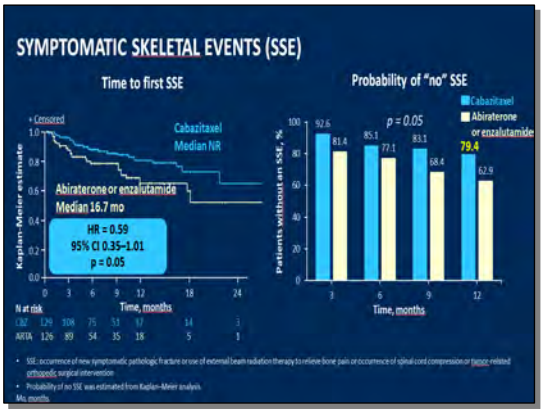


De Wit R, et al. N Engl J Med. 2019;381:2506–2518.

PAIN RESPONSE AND PAIN PROGRESSION

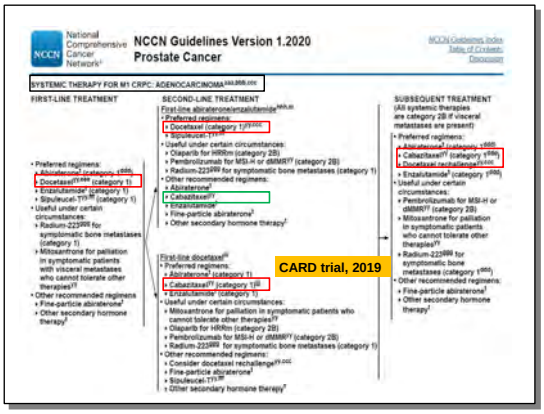


- Pain response: decrease ≥ 30% from baseline in average BPI-SF pain intensity score at two consecutive evaluations ≥ 3 weeks apart without increase in analgesic usage score
- Pain progression defined by an increase by ≥ 30% from baseline in BPI-SF pain intensity score (item 3) observed at two consecutive evaluations ≥ 3 weeks apart without decrease in analgesic usage score or increase in analgesic usage score of ≥ 30%
- Probability of no pain progression was estimated from Kaplan-Meier analysis



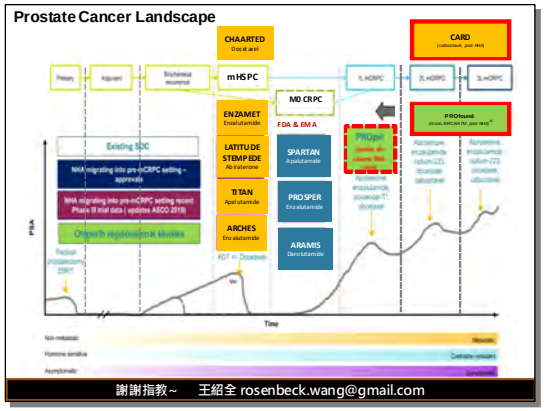
Summary of update mCRPC, 2020

1. DNA repair related gene deficiency, especially **BRCA1/2** could benefit from PARP inhibitor (Olaparib, nuliparib, rucaparib…) with manageable common AEs: **anemia, nausea, fatigue** and other **hematological side effects**.
- **rPFS, ORR, TTPP benefit** compared with physician's choice of enzalutamide/abiraterone + prednisone In patients with HRRm
  - A **favorable trend of OS** in *BRCA1/2* and/or *ATM* (HR=0.64)
2. Phase 3 trials of combinations of **PARP inhibitors with AR pathway inhibitors & immune check-point inhibitors** are underway in selected and unselected patients
3. Docetaxel is indicated in metastatic prostate cancer
- High volume mCSPC
- mCRPC: **symptomatic, visceral metastasis, previous ARAT**
4. By CARD trial, Cabazitaxel is indicated in mCRPC
- Post docetaxel (2nd line)
- Better response (**rPFS, OS, pain response, QoL**) post docetaxel and abi/enza (3rd line)



全民健康保險藥品給付規定
第9節抗癌瘤藥物 Antineoplastics drugs

9. 3. Docetaxel：(87/7/1、92/11/1、93/8/1、95/8/1、96/1/1、99/6/1、100/1/1、101/6/1、108/1/1)
1. 乳癌：
(1)局部晚期或轉移性乳癌。
(2)與 anthracycline 合併使用於腋下淋巴結轉移之早期乳癌之術後輔助性化學治療。(99/6/1)
(3)早期乳癌手術後，經診斷為二陰性反應且無淋巴轉移的病人，得作為與 cyclophosphamide 併用 doxorubicin 的化學輔助療法。(101/9/1)
2. 非小細胞肺癌：局部晚期或轉移性非小細胞肺癌。
3. 前列腺癌：於荷爾蒙治療失敗之轉移性前列腺癌。
4. 頭頸癌：限局部晚期且無遠端轉移之頭頸部鱗狀細胞癌且無法手術切除者，與 cisplatin 及5-fluorouracil 併用，作為放射治療前的引導治療，限使用4個療程。(100/1/1)
5. 胃腺癌：晚期胃腺癌患者，包括胃食道接合處之腺癌。(108/1/1)
9. 4. Gemcitabine (如 Gemzar)：(92/12/1、93/8/1、94/10/1、96/5/1、99/10/1、105/2/1)
限用於



【TAA President Lecture】

The Clinical Difference between Testosterone Restoration and Testosterone Replacement

Hong-Chiang Chang
張宏江醫師
台大醫院泌尿部

For Late onset hypogonadism, there are two strategies of treatment, one is replacement with exogenous Testosterone, one is restoration of endogenous Testosterone. Exogenous testosterone has been the standard treatment for hypogonadal men, but is associated with suppression of spermatogenesis. Clomiphene Citrate (CC), an inexpensive generic drug, was approved by the FDA in 1967, which is originally designed for female infertility.

Clomiphene is one of selective estrogen receptor modulator(SERM) this is a group of pharmaceutical agents that act by the competitive inhibition of estrogen receptors in the hypothalamus and pituitary. SERM can increase release of GnRH and gonadotrophins thus increase intra-testicular testosterone production and enhance spermatogenes. It remains uncertain whether there is also an additional direct effect of antioestrogens on spermatogenesis or steroidogenesis at the testicular level. Although there was no FDA (Food and Drug Administration) approved for hypogonadism, it has been used off label for many years. Side effects are typically minor and may include nausea, dizziness, weight gain and fluid retention. Nonsteroidal SERMs, e.g. Tamoxifen, Toremifen and Raloxifen, can effectively treat male hypogonadism by indirectly increasing serum testosterone and increasing the ratio of testosterone to estradiol.

Till now, the situation of Clomiphene still need more clinical data to clarified. More reliable data are need to conclude whether testosterone restoration is as effective as testosterone replacement in the resolution of hypogonadal symptoms? The rise of testosterone was not maintained after cessation of clomiphene therapy, so long term therapy was needed.

【Symposium I】

Implication of Sperm DNA Fragmentation in Male Factor Infertility

Tsung-Yen, Lin
NCKUH

Abstract

Male infertility, defined as a male's inability to cause pregnancy in a fertile female, affects about 7% of all men. Male infertility is solely responsible in 20% of infertile couples and contributed partially to another 30~40%. Until now, the only recommended and routine diagnostic test for male infertility has been conventional semen analysis which includes measurement of sperm concentration, motility, morphology, and special component of seminal plasma. The imperfection of conventional semen analysis is the incomplete discrimination of infertile male from fertile male that up to 40% infertile male have semen parameters within normal reference values. Therefore, additional diagnostic tools to improve diagnosis of male infertility and prediction of male fertility is needed.

Sperm DNA fragmentation (SDF), a term used to indicate abnormal genetic material within the sperm, is an inspection direction that has received more and more attention on its impacton male infertility. In recent years, there are increasing researches proposed the significant correlation between SDF and male subfertility, miscarriage, failure of artificial reproduction including IUI and IVF/ICSI. The role of sperm DNA integrity on reproductive outcomes is repeatedly emphasized and the assay of SDF gives us a new horizon in clinical andrology. Although SDF testing is still not routinely recommended in the latest American Urological Association (AUA), European Association of Urology (EAU), and American Society of Reproductive Medicine (ASRM) guidelines, the potential contribution of SDF to male factor infertility and the value of the SDF test have been acknowledged.

Other associations like European Society for Human Reproduction and Embryology (ESHRE) and Society for Translational Medicine (STM) have different opinions and provide evidence-based guidance for SDF testing. ESHRE stated that “assessing SDF in couples with recurrent pregnancy loss (RPL) – defined by two or more pregnancy losses from the time of conception until 24 weeks of gestation – can be considered for explanatory purposes, based on indirect evidence”. STM recommends SDF testing for infertile males with clinical varicocele or risk factors for oxidative stress, and couples with unexplained infertility, or RPL, or failure of IUI or IVF/ICSI without specific causes.

There are still controversy and discrepancy on clinical use of SDF such as the choice of testing method and the cut-off value for treatment guidance. We believe that with more evidence, the recommendations on SDF will be continuously revised.

【Symposium I】

The Appropriate Timing to Consider Testicular Sperm over Ejaculated Sperm in Male Infertile Patients

張效駿醫師
亞東紀念醫院

Intracytoplasmic sperm injection (ICSI) is well established and provides patients with severely impaired sperm quality with an opportunity to father a child. Cryptozoospermia who have extremely low sperm count and sperm motility require ICSI. Sperm quality, including sperm count and motility influence the outcome of ICSI.

However, previous studies do not clearly indicate whether male with cryptozoospermia should use testicular sperm or ejaculated sperm for ICSI. A recent systematic review and meta-analysis focusing on pregnancy rate and fertilization rate concluded that evidence does not support the recommendation that patients with cryptozoospermia should prefer testicular sperm over ejaculated sperm for ICSI. Testicular or ejaculated sperm produces better outcomes of ICSI, assessed as fertilization rate, embryo quality, implantation rate, and pregnancy rate still remain controversial. But the recent systematic review of this topic gave a controversial conclusion that was based on incorrect pooling result.

The present systemic review and meta-analysis showed that among patients with cryptozoospermia undergoing ICSI. The use of testicular sperm leads to higher good-quality embryo rate, implantation rate, and pregnancy rate in compared with ejaculated sperm.

The existing evidence suggests that testicular sperm is better than ejaculated sperm for ICSI in male with cryptozoospermia. Testicular sperm obtained through surgical retrieval for ICSI may be suggested.

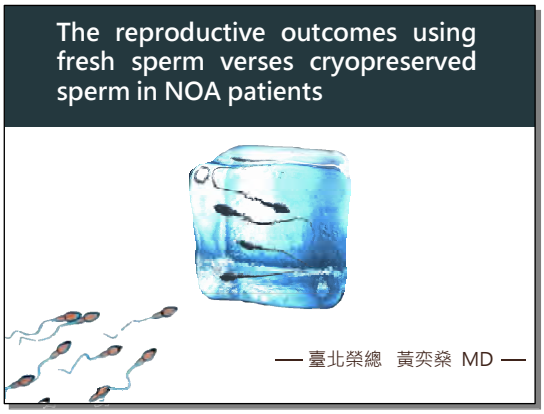
Damage to the sperm DNA along the genital tract might further explain why testicular sperm leads to better fertility outcomes than does ejaculated sperm. During ICSI the technician always attempts to select the sperm with highest motility and healthiest morphology through thorough examination. Therefore, the maturation of sperm is no longer a factor affecting fertilisation ability.

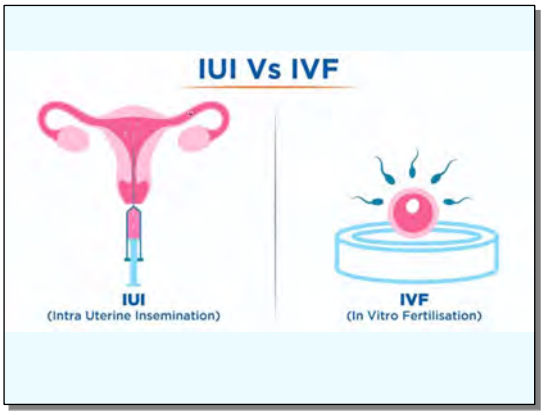
But guidelines and evidence in favour of testicular sperm/ ICSI in cryptozoospermia are not yet universally supported in reproductive community.

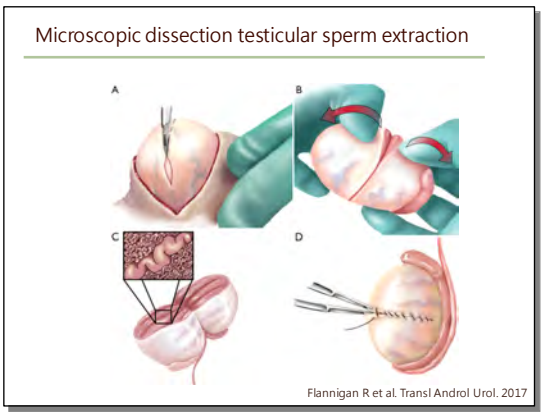
【Symposium I】

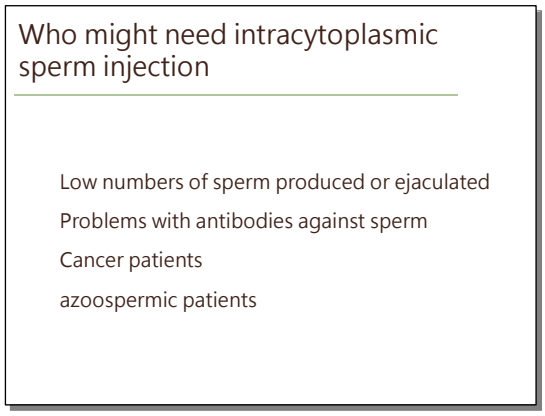
The Reproductive Outcomes using Fresh Sperm versus Cryopreserved Sperm in NOA Patients

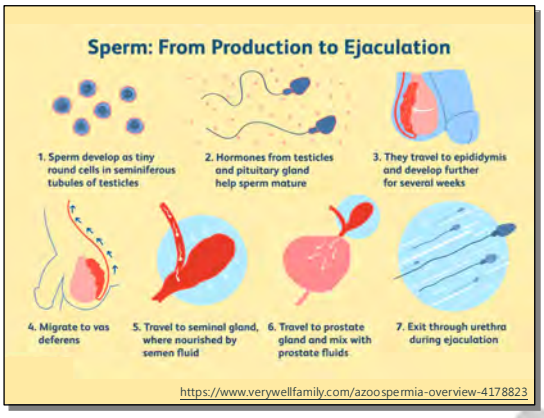
黃奕燊醫師
臺北榮民總醫院

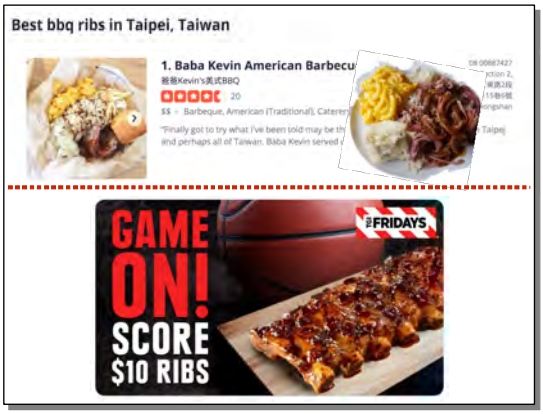


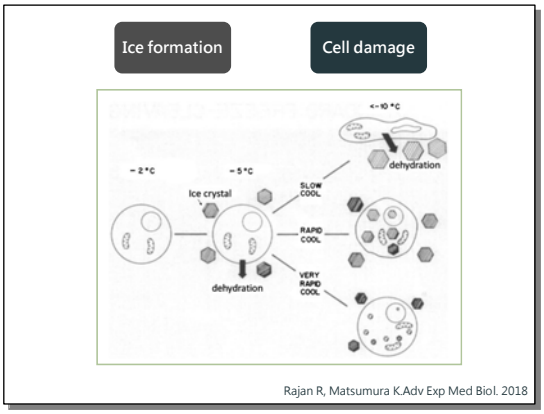




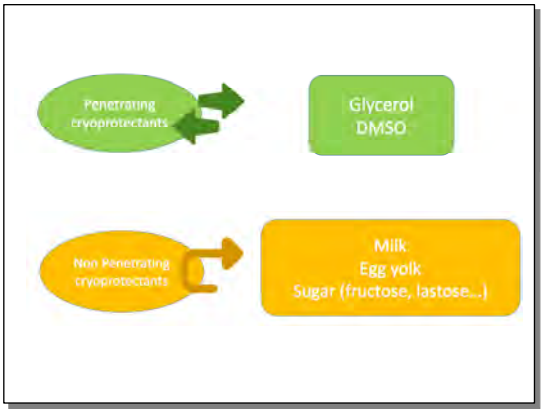


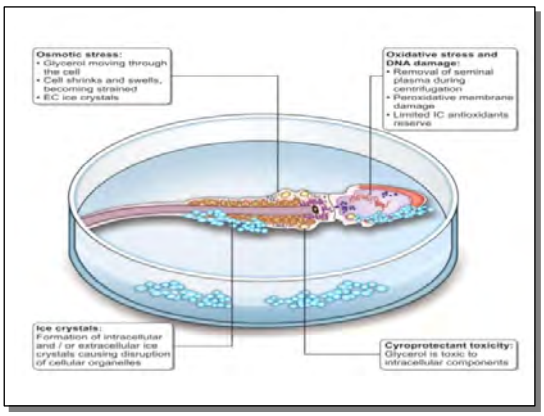




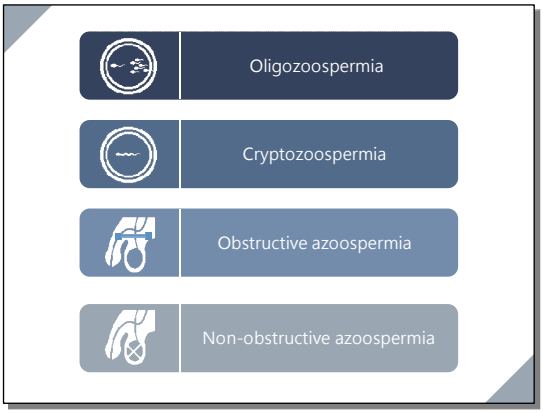


Rajan R, Matsumura K.Adv Exp Med Biol. 2018





Characteristic	Procedure	
	Slow freezing	Vitrification
Working time	More than 3 h	Fast, less than 10 min
Cost	Expensive, freezing machine needed	Inexpensive, no special machine needed
Sample volume (μL)	100–250	1–2
Concentration of CPA	Low	High
Risk of freeze injury, including ice crystal formation	High	Low
Post-thaw viability	High	High
Risk of toxicity of CPA	Low	High
Status of system	Closed system only	Opened or closed system
Potential contamination with pathogenic agents	Low	High
Manipulation skill	Easy	Difficult



Outcome definition

Fertilization: 2 pronuclei (PN) (16-18 hrs)

Pregnancy: beta-hCG (12 days)

Implantation: intrauterine gestational sac (4 wks)

Ongoing pregnancy: heart beat (7 wks)

Live birth

Oligo/Astheno/Oligoastheno

Retrospective: 158 patients
Fresh: 79 cycles Cryopreserved: 61 cycles

Normal fertilization, implantation, and pregnancy rates in cycles with different sperm characteristics.

Variables evaluated	Normal-fertilization rate	Implantation rate	Pregnancy rate
Normozoospermia			
Fresh (%)	74.9	16.3	39.3
Cryopreserved (%)	70.6	16	25
P value	.284	.977	.484
Oligozoospermia			
Fresh (%)	73.5	26.6	60
Cryopreserved (%)	73.6	25.9	50
P value	.991	.964	.714
Asthenozoospermia			
Fresh (%)	75.3	12.5	60
Cryopreserved (%)	50.5	15.5	50
P value	.001	.702	.741
Oligoasthenozoospermia			
Fresh (%)	72.7	15.1	45
Cryopreserved (%)	57.9	13.5	45.5
P value	.004	.702	.741

Borges E jr et al. Fertil Steril. 20

Oligo/Astheno/Oligoastheno

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Asthenozoospermia			
Fresh (%)	75.3	12.5	60
Cryopreserved (%)	50.5	15.5	50
P value	.001	.702	.741
Oligoasthenozoospermia			

Semen with abnormalities in the motility may be more susceptible to sperm cryopreservation damage

Borges E jr et al. Fertil Steril. 2007

Oligo

Prospective/Randomized

	Group A (N=118)	Group B (N=122)
Mean number of embryos transferred ± SD	2.0 ± 0.6	2.0 ± 0.5
Number of transfers per number of cycles (%)	114/118 (96.6)	119/122 (97.5)
Cycles with positive HCG (%)	43 (36.4)	52 (42.6)
Clinical pregnancies per cycle (%)	35 (29.7)	47 (38.5)
Clinical abortions (% of clinical pregnancies)	7 (20.0)	4 (8.5)
Ongoing pregnancies per cycle (%)	28 (23.7)	43 (35.2)*
Singleton (% of ongoing pregnancies)	21 (75.1)	29 (67.4)
Twin	6 (21.4)	13 (30.2)
Triplet	1 (3.5)	1 (2.3)
Clinical implantation rate	18.9%	26.0%

Cryopreservation of sperm for men with poor semen quality does not negatively affect fertilization and pregnancy rate after ICSI

Kuczyński W et al. Hum Reprod. 2001

Oligo/Crypto

Fresh sperm

	Group 1 (< 10^3)	Group 2 (10^3-10^5)	Control group	P (Groups 1 versus 2)	P (Group 1 versus control)
Number of ICSI attempts	44	46	43		
Using freshly ejaculated sperm (frequency)	39 (88.7%)	46 (100%)	43 (100%)	0.025	0.025
No of injected Oocytes (mean ± SD)	283 (6.9 ± 4.7)	315 (6.4 ± 3.9)	337 (7.9 ± 2.8)	ns	0.03
Two pronuclei (fertilization rate)	140 (49.47%)	192 (60.95%)	222 (65.87%)	<0.001	<0.001
Good quality embryos/total embryos	59/136 (43.38%)	88/192 (45.83%)	(104/234) (44.44%)	ns	0.03
Transferred embryos (mean ± SD)	71 (1.7 ± 0.9)	83 (1.8 ± 0.7)	90 (2.1 ± 0.6)	ns	<0.05
Implantation rate	9/71 (12.68%)	12/83 (14.46%)	20/90 (22.22%)	ns	0.03
Clinical pregnancy/pick up	5/44 (11.36%)	10/46 (21.74%)	16/43 (37.20%)	ns	<0.001
Clinical pregnancy/pick up ≥ 4 MII Oocytes	5/32 (15.63%)	9/40 (22.50%)	16/41 (39.02%)	ns	<0.05
Delivery of children*/pick up	5/44 (11.36%)	8/46 (17.39%)	13/43 (30.23%)	ns	<0.05

Fertilization and pregnancy rate were lower compared to the control

Koscinski I et al. Hum Reprod. 2007

Crypto

< 10^3 sperm /ml

Fertilization rate: 49%
Pregnancy rate: 5/44

Fertilization rate: 55%
Pregnancy rate: 1/5

Koscinski I et al. Hum Reprod. 2007

Crypto

< 10^3 sperm /ml

Fertilization rate: 49%
Pregnancy rate: 5/44

Banking of ejaculated sperm is helpful for cryptozoospermic patients.

Fertilization rate: 55%
Pregnancy rate: 1/5

Koscinski I et al. Hum Reprod. 2007

Efficient treatment of infertility due to sperm DNA damage by ICSI with testicular spermatozoa

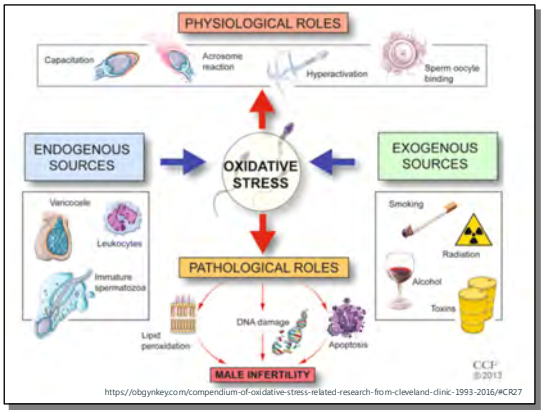
Ermanno Greco[1], Filomena Scarselli[1], Marcello Iacobelli[1], Laura Rienzi[1], Filippo Ubaldi[1], Susanna Ferrero[1], Giorgio Franco[1], Nazareno Anniballo[1], Carmen Mendoza[2,3] and Jan Tesarik[1,4,5]

Patient	Basic sperm parameters			% Spermatozoa with fragmented DNA	
	Concentration ($\times 10^6$/ml)	Motility (%)	Normal forms (%)	Ejaculate	Testis
1	6	11	2	20	3
2	31	52	3	15	5
3	38	71	20	24	4
4	33	40	11	21	3
5	3	19	9	27	2
6	25	65	15	31	6
7	75	42	68	25	4
8	22	3	8	23	1
9	35	15	6	22	18
10	2	14	7	25	5
11	19	29	25	26	4
12	51	41	48	21	3
13	12	63	11	37	6
14	24	32	61	19	5
15	1	42	22	17	6
16	33	21	13	24	4
17	17	56	10	20	5
18	66	44	58	27	3

Sperm source	Attempts	Embryos transferred	Clinical pregnancies*
Ejaculate	18	56	1
Testis	18	58	8

Sperm source	Pregnancy rate*	Gestational sacs*	Implantation rate*
Ejaculate	5.6%*	1	1.8%*
Testis	44.4%*	12	20.7%*

Greco E et al. Hum Reprod. 2005



DNA fragmentation increase by rapid freezing/slow thawing

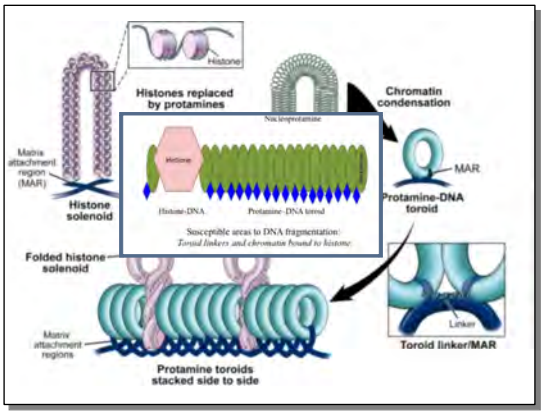
Group	n	DNA fragmentation (%)	P-value (group versus fresh)
Fresh	76	13.94 ± 0.86	n/a
Plunge freeze–thaw at RT	56	17.80 ± 0.89	<0.001
Plunge freeze–thaw at 37°C	34	14.51 ± 0.78	NS
Programmed freeze–thaw at RT	35	14.34 ± 0.91	NS
Programmed freeze–thaw at 37°C	37	14.48 ± 0.73	NS

Thompson-Cree ME et al.Reprod Biomed Online. 2003

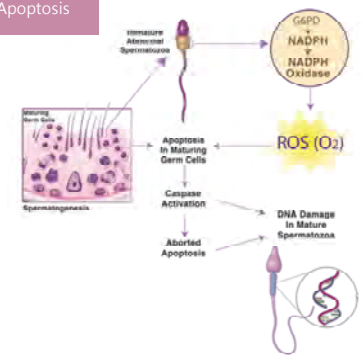
Single-strand DNA break (ss-DB)
Double-strand DNA break (ds-DB)
Base deletion or modification
Inter or intra-strand cross linkage

Increase DNA Fragmentation

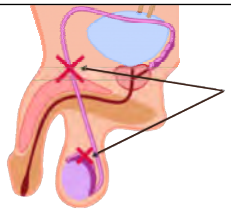
Hamilton TRDS et al. Zygote. 2020



Sperm Apoptosis



https://obgynkey.com/compendium-of-oxidative-stress-related-research-from-cleveland-clinic-1993-2016/#CR27



Obstructive Azoospermia
阻塞性無精症

Box 1
Causes of obstruction of the genitourinary reproductive system

Epididymis
- Infection (acute/chronic epididymitis)
- Previous iatrogenic epididymal incision for sperm aspiration/biopsy
- Previous scrotal surgery (ie, hydrocelectomy)
- Congenital (partial or complete absence of epididymis)
- Young syndrome

Vas Deferens
- Vasectomy
- Iatrogenic: herniorrhaphy or other previous scrotal surgery with accidental vas deferens ligation
- CUAVD, CBAVD
- Vasotomy/vasography with improper technique

Ejaculatory Duct
- Cysts (Mullerian utricular, prostatic, seminal vesicular)
- Traumatic
- Iatrogenic (postoperative)
- Infection (ie, prostatic)

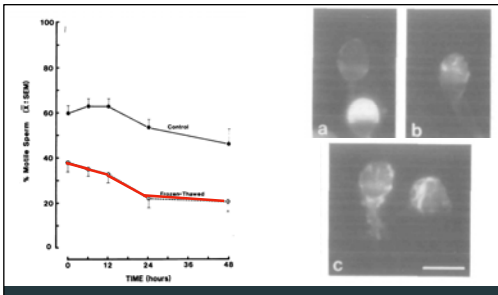
Wosnitzer MS, Goldstein M. Urol Clin North Am. 2014

Obstructive azoospermia

Comparing fresh vs. cryopreserved epididymal sperm for couples undergoing first-time IVF/ICSI.

Characteristic	Fresh (n = 108)	Cryopreserved (n = 33)
Mean (±SD) male age (in years)	38.3 ± 8.8	38.2 ± 11.1
Mean (±SD) female age (in years)	33.2 ± 5.1	33.1 ± 5.5
Mean (±SD) total no. of sperm aspirated	99 × 10^6	82 × 10^6 ± 110
Mean (±SD) no. of vials stored	5.5	4.7 ± 2.5
Mean (±SD) no. of oocytes injected	10.8 ± 5.5	10.1 ± 5.3
Mean (±SD) no. of oocytes fertilized	8.2 ± 5.1	7.9 ± 4.6
Mean (±SD) no. of embryos per transfer	3.3 ± 1.0	3.2 ± 0.8
No. of pregnant couples/total no. of couples (%)*	72/108 (66.7)	20/33 (60.6)

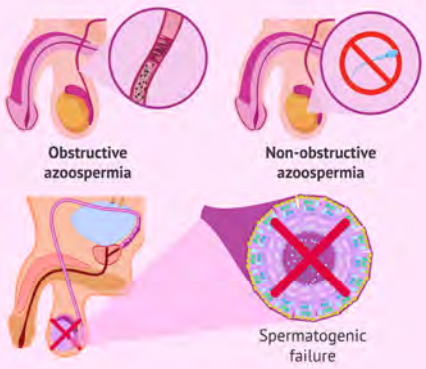
Janzen N et al. Fertil Steril. 2000



Cryopreservation has detrimental effects on sperm motility and sperm acrosomes

Critser JK et al. Fertil Steril. 1987
Cross NL et al. Hum Reprod. 1991

Non-Obstructive azoospermia



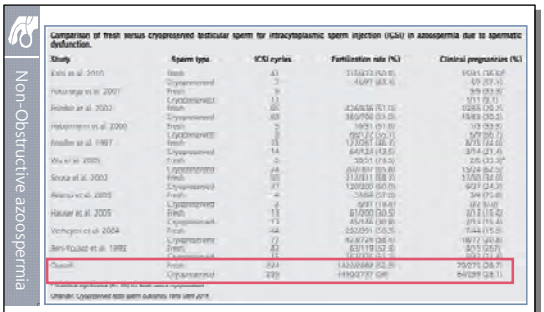
Impact of fresh versus cryopreserved testicular sperm upon intracytoplasmic sperm injection pregnancy outcomes in men with azoospermia due to spermatogenic dysfunction: a meta-analysis

Samuel Ohlander, M.D.,[a] James Hotaling, M.D., M.S.,[a] Eric Kirshenbaum, M.D.,[a] Craig Niederberger, M.D., F.A.C.S.,[a] and Michael L. Eisenberg, M.D.[b]
[a] University of Illinois, Chicago, Illinois; and [b] Stanford University, Stanford, California

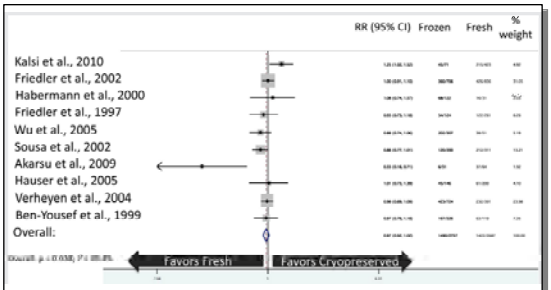
11 studies
574 ICSI cycles: 275 fresh
299 cryopreserved-thawed

Ohlander S et al. Fertil Steril. 2014

Non-Obstructive azoospermia

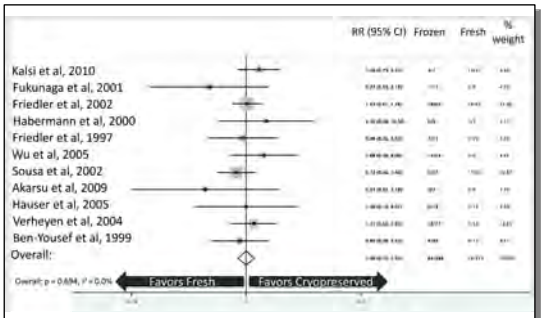


Ohlander S et al. Fertil Steril. 2014



Fertilization (oocytes): Fresh - 1422/52.9%
Cryopreserved - 1490/54%

Ohlander S et al. Fertil Steril. 2014



Pregancy: Fresh - 79/28.7%
Cryopreserved - 84 /28.0%

Ohlander S et al. Fertil Steril. 2014

UT Table Outcomes of ICSI cycles: Frozen-thawed vs. fresh sperm

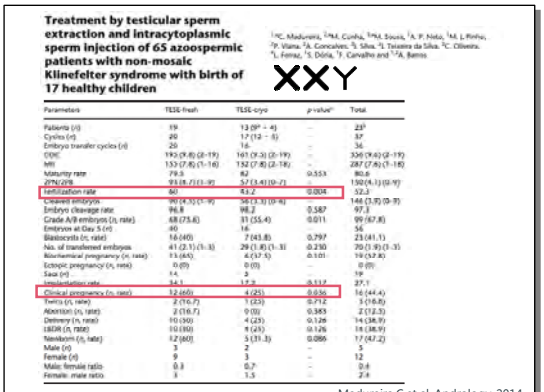
	Frozen-thawed sperm	Fresh sperm	Relative risk
Pregnancy rate	28.1%	29%	1.00 (CI: 0.75, 1.33)
Fertilization rate	54%	53%	0.97 (CI: 0.92, 1.02)

Source: Samuel Ohlander, MD

Ohlander S et al. Fertil Steril. 2014

Treatment by testicular sperm extraction and intracytoplasmic sperm injection of 65 azoospermic patients with non-mosaic Klinefelter syndrome with birth of 17 healthy children

XXY



Madureira C et al. Andrology. 2014

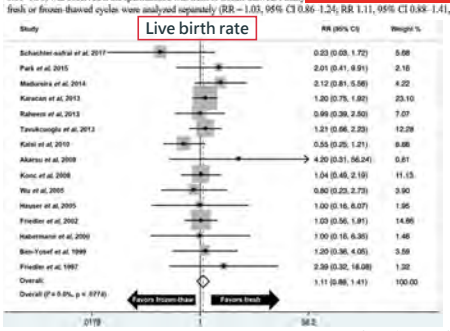
Comparison of intracytoplasmic sperm injection outcome with fresh versus frozen-thawed testicular sperm in men with nonobstructive azoospermia: a systematic review and meta-analysis

Study	Country	Study period	Study design	LE	Study quality*	ICSI cycles
Schachter-safrai et al., 2017	Israel	1999-2011	Retrospective	3	7	70
Park et al.,2015	Korea		Retrospective	3	7	110
Madureira et al., 2014	Portugal	1994-2011	Retrospective	3	7	37
Karacan et al., 2013	Iraq	2006-2012	Retrospective	3	7	209
Raheem et al., 2013	UK	2001-2010	Retrospective	3	7	77
Tavukcuoglu et al., 2013	Germany	2010-2012	Retrospective	3	7	82
Kalsi et al., 2010	UK	1993-2008	Retrospective	3	7	48
Akarsu et al., 2009	Turkey		Retrospective	3	5	6
Konc et al., 2008	Hungary		Retrospective	3	7	157
Wu et al., 2005	USA	2001-2003	Retrospective	3	7	30
Hauser et al., 2005	Israel	1997-2004	Retrospective	3	7	26
Verheyen et al., 2004	Belgium	1998-2002	Retrospective	3	6	86
Friedler et al., 2002	Israel	1995-2001	Retrospective	3	7	128
Sousa et al., 2002	Portugal		Retrospective	3	6	87
Habermann et al., 2000	America		Retrospective	3	5	12
Ben-Yosef et al., 1999	Israel	1995-1998	Retrospective	3	6	57
Friedler et al., 1997	Israel	1995-1996	Retrospective	3	6	39

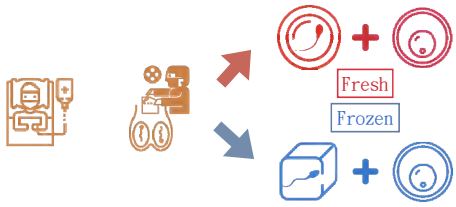
Yu Z et al. J Assist Reprod Genet. 2018

Results A total of 17 studies with 1,261 ICSI cycles were identified. Analysis of the present data showed no difference in the fertilization outcome when comparing fresh versus frozen-thawed spermatozoa (RR = 1.02, 95% CI 0.86–1.09). Similarly, no difference in CR (RR = 1.01, 95% CI 0.96–1.05), good embryo rate (RR = 1.01, 95% CI 0.95–1.09), and IR (RR = 0.93, 95% CI 0.66–1.30) was observed if the spermatozoa was fresh or frozen-thawed. Finally, no difference in CPR or LBR was noted when using fresh or frozen-thawed cycles were analyzed separately (RR = 1.03, 95% CI 0.86–1.24; RR 1.11, 95% CI 0.88–1.41, respectively).

Live birth rate



Yu Z et al. J Assist Reprod Genet. 2018



Similiar pregnancy rate for infertile couples ?

Post-thaw recovery of rare or very low concentrations of cryopreserved human sperm

sperm count < 10^5 (/ml)

Post-thaw outcomes of rare or very low concentrations of cryopreserved sperm categorized by sperm source.

Sperm source	ICSI cycles in which sperm were identified post-thaw (n = 78)	ICSI cycles in which no sperm were identified post-thaw (n = 5)
Ejaculated	13	1 (7.1%)
Testicular	65	4 (5.8%)
Total	78	5 (6.0%)

Kathrins M et al. Fertil Steril. 2017

Post-thaw outcomes of rare or very low concentrations of cryopreserved sperm categorized by pre-cryopreservation sperm quantity.

Pre-cryopreservation sperm quantity	ICSI cycles in which sperm were identified post-thaw (n = 78)	ICSI cycles in which no sperm were identified post-thaw (n = 5)
≤100,000	35	1 (2.8%)
Rare	43	4 (8.5%)

Rare sperm:(one to three) sperm under >20 high-power fields

When including these two additional cases, the overall post-thaw unusable rates for the rare sperm only and <100,000 sperm groups were 10.6% and 5.6%, respectively.

Kathrins M et al. Fertil Steril. 2017

human reproduction update

Techniques for cryopreservation of individual or small numbers of human spermatozoa: a systematic review

Faten AbdelHafez[1], Mohamed Bedaiwy[2,3], Sherif A. El-Nashar[2], Edmund Sabanegh[4], and Nina Desai[1,5]

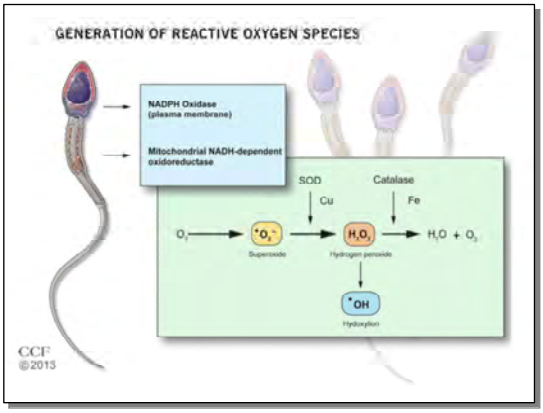
Non-biological	Biological
Straws/mini-straws/open-pulled straws	Empty zonae of different species
5 mm copper loop	*Volvox globator* algae
Cryoloops	
Calcium alginate beads	
ICSI pipette	
Microdroplets on dry ice or plastic dish	
Agarose gel microspheres	

AbdelHafez F et al. Hum Reprod Update. 2009

Fresh	Cryopreserve
Avoid sperm loss	Post thaw recovery
Stress	Multiple attempts
Repetitive op	Avoid OHSS

Fresh	Cryopreserve
Avoid sperm loss	Post thaw recovery
Stress	Multiple attempts
Repetitive op	Avoid OHSS

臺北榮總　黃奕燊 MD



【Symposium I】

The Concern of Fertility Preservation for Young Patients with Klinefelter Syndrome

翁涵育醫師
成大醫院泌尿部

Klinefelter syndrome (KS) is the most frequent chromosomal abnormality of male infertility, with the prevalence of 3% in infertile men and 11% in azoospermic men. It has been reported that only 25% of the expected numbers are ever diagnosed. Wide variation of clinical symptoms and insufficient professional awareness have been mentioned as contributing to underdiagnosis and under-reporting.

Men diagnosed with non-mosaic KS were once labeled as untreatable infertility, and the only option for children rests with adoption. To date, the testicular sperm extraction(TESE) and intracytoplasmic sperm injection (ICSI) has offered these patients to have their biological children. Besides, TESE-ICSI provide similar results in KS as in men with non-obstructive azoospermia (NOA) with normal karyotype, regarding sperm retrieval rate and pregnancy rate.

Despite the various clinical manifestations in patients with KS, their testes share a cardinal feature in germ cell degeneration which accelerates since puberty, resulting in extensive fibrosis and hyalinization of the seminiferous tubules and interstitial hyperplasia in the adults. Given the fertility problem encountered and the varied SRR of 40-70% in adult, some investigators suggested the early fertility preservation for KS adolescents. The underlying assumptions for early fertility preservation are that spermatogenesis starts at the onset of puberty and progressively decline or disappear due to meiotic failure. However, it remains unclear whether early retrieval increases the likelihood of successful sperm retrieval. Further studies regarding the effects of exogenous T on KS testis might serve to advance our treatment of hypogonadism as well as infertility in patients with KS.

【Symposium I】

Male Fertility and Its Impact on the Heath of Future Generation

Cheng Yu-Sheng
成大醫院泌尿部

Impaired sperm quality is usually the first sign indicating male infertility/subfertility. Nevertheless, the etiology is often not clear, nor the impact on the health of future generations.

Nowadays, we might use assisted reproductive technology (ART) to permit conception with spermatozoa that would have been rejected under physiological conditions and help infertile men to achieve their fatherhood. Y-chromosome microdeletions and oxidative stress are two major identified causes of male infertility recently. It is of concern whether the use of spermatozoa carrying these pathological changes results in the consequences for the well-being of the offspring with ART.

This talk will focus on the discussion in major causes of male infertility and the potential impact of genetic defects in spermatozoa on future offspring. The optimal treatment of male infertility requires multi-disciplined experts' cooperation, including reproductive biologists, andrologists, reproductive urologists, OBS/GYNs, and genetic counselors.

【Symposium II】

A Novel Nasal Gel Formula for Testosterone Replacement Therapy in Men with Hypogonadism

黃世聰醫師
長庚紀念醫院 泌尿科

ABSTRACT

Hypogonadism is a clinical and biochemical syndrome usually associated with advancing age and characterized by a deficiency in serum androgen levels with or without a decrease in genomic sensitivity to androgens. Testosterone replacement therapy (TRT) can ameliorate symptoms from low testosterone level. TRT can be administered by oral preparations, injections (intramuscular or subcutaneous implantation), transdermal preparations (gels, axillary solution, and patches) and transmucosal formula (buccal system). Despite the overall effectiveness of TRT, different types of testosterone products are associated with various adverse reactions. Traditional oral 17-alkylated-methyltestosterone products may sometimes have hepatotoxicity. Injections of testosterone preparations may cause pain from injection sites and immediate post-injectional supra-physiologic high testosterone level may cause polycythemia. Local skin irritations and unintentional testosterone transference to women and children had been reported among topical testosterone preparations users.

To resolve these adverse reactions from different testosterone preparations, a novel nasal gel formula product was developed because the nasal mucosa can offer high permeability and high bioavailability, as the drug is not subject to first-pass metabolism. Natesto®, a novel nasal testosterone gel formula, is approved by FDA in May 2014 for “adult males with conditions associated with deficiency or absence of endogenous testosterone, including primary hypogonadism (congenital or acquired) or hypogonadotropic hypogonadism (congenital or acquired).” Natesto® is a 4.5% testosterone gel formulation. The drug is administered from a non-pressurized, manual pump dispenser equipped with a specialized nasal applicator which administers 125 lL (5.5 mg testosterone) of the thixotropic gel directly onto the mucosa of the nasal vestibule of each nostril (total dose 11 mg over both nostrils). The initial dosage is administrated twice a day with total daily dose of 22mg. The maximal dose can be titrated into 3 time a day with total daily dose of 33mg.

In one multicenter, single arm study, 117 patients with hypogonadism who were enrolled from 11 Canadian sites. All subjects with hypogonadism were treated at the starting dose (22 mg/day) and 37% these subjects were titrated to the higher dose (33mg/day) at Day 90 by investigators depended on symptoms. Seventy-seven percent of subjects were in their normal TT range at the end of study with a mean serum TT of 19.4 nmol/L. Patients who were up-titrated to 33mg daily and treated for an additional 30 days also showed significant improvement (via ADAM questionnaire) from baseline (30.9 [5.9]) to the end of the treatment period ($p<0.0001$). There were no serious treatment-related AEs reported during the study period. Mean total cholesterol, LDL, HDL, triglycerides, alanine transaminase (ALT), and aspartate aminotransferase (AST) results were all within normal range and mean values observed after TRT were similar to those observed at baseline (visit 1).

Natesto® administrated by a non-pressurized, manual pump dispenser, is easy to use for TRT in men with hypogonadism. This nasal testosterone gel preparation can effectively ameliorate the hypogonadism symptoms and restore testosterone level. Only mild transient local irritations such as rhinorrhea, epistaxis, nasal discomforts, or congestions had been reported. This novel nasal testosterone gel product can afford an alternative TRT choice for men with hypogonadism.

【Symposium II】

Effect of Enzalutamide on Patient-reported Outcomes, Including Fatigue, in Metastatic Hormone-Sensitive Prostate Cancer: Analyses from the Arches Study

Jian-ri Li[1] presenting on behalf of Arnulf Stenzl,[2] Curtis Dunshee,[3] Ugo De Giorgi,[4] Boris Alekseev,[5] Taro Iguchi,[6] Russell Z. Szmulewitz,[7] Thomas W. Flaig,[8] Bertrand F. Tombal,[9] Robert Morlock,[10] Cristina Ivanescu,[11] Krishnan Ramaswamy,[12] Fred Saad,[13] Andrew J. Armstrong[14]

[1]Division of Urology, Taichung Veterans General Hospital, Taichung, Taiwan; [2]University Hospital, EberhardKarls University, Tübingen, Germany; [3]Urological Associates of Southern Arizona, Tucson, AZ, USA; [4]Istituto ScientificoRomagnolo per lo Studio e la CuradeiTumori (IRST) IRCCS, Meldola, Italy; [5]Hertzen Moscow Cancer Research Institute, Moscow, Russia; [6]Osaka City University Graduate School of Medicine, Osaka, Japan; [7]The University of Chicago, Chicago, IL, USA; [8]University of Colorado, Aurora, CO, USA; [9]Cliniques universitaires Saint-Luc, Brussels, Belgium; [10]Astellas Pharma Inc., Northbrook, IL, USA; [11]IQVIA, Amsterdam-Zuidoost, the Netherlands; [12]Pfzer Inc.,New York, NY, USA; [13]CentreHospitalier de l'Université de Montréal, Université de Montréal/CRCHUM, Montréal, Quebec, Canada; [14]Duke Cancer Institute Center for Prostate and Urologic Cancers, Durham, NC, USA

Introduction: The Phase 3 ARCHES trial (NCT02677896) showed that enzalutamide + androgen deprivation therapy (ADT) improved radiographic progression-free survival (rPFS) versus placebo + ADT in men with metastatic hormone-sensitive prostate cancer (mHSPC). Here we report patient-reported outcome (PRO) data with a focus on fatigue up to week 73.

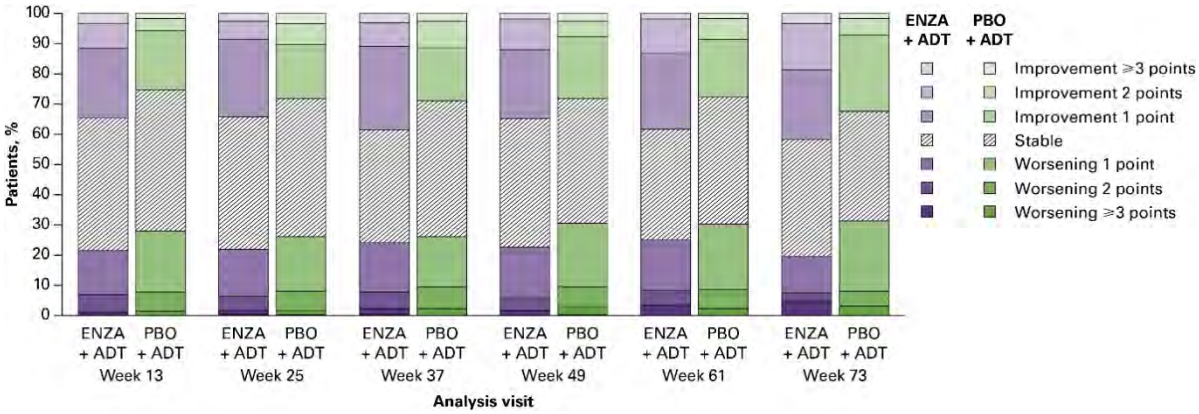
Methods: PROs, including the Functional Assessment of Cancer Therapy–Prostate (FACT-P) and Brief Pain Inventory–Short Form (BPI-SF), were assessed at baseline, week 13, and every 12 weeks until disease progression. Many patients initiated ADT for several months prestudy baseline (>20% of patients in each group had previously used ADT for >3 months). Most patients (63% overall) had high-volume disease and about 20% of patients with high-volume disease initiated enzalutamide or placebo after docetaxel therapy. Change from baseline was assessed using mean scores and mixed model repeated measures. The proportion of patients scoring 0–4 on indicators of fatigue (FACT-P items GP1 ["I have a lack of energy"] and GP7 ["I am forced to spend time in bed"]) were measured over time. The proportion of patients with item scores classified as worsening (by 1, 2, or ≥3 points versus baseline), stable, or improved (by 1, 2, or ≥3 points versus baseline) over time was also measured.

Results: Completion rates (≥1 scale with nonmissing values) were high (88−96%) for FACT-P and BPI-SF up to week73. Both groups were generally asymptomatic at baseline, with good health-related quality of life (HRQoL) [mean (SD) FACT-P total

score:placebo + ADT 112.7 (19.0); enzalutamide+ ADT 113.9 (19.8)] and low pain (worst pain [item 3]:placebo + ADT 1.77[2.3]; enzalutamide+ ADT 1.80[2.4)]). HRQoL and pain scores remained stable over time, with no clinically meaningful between-group differences in change from baseline to week 73. Enzalutamide + ADT maintained HRQoL, as measured with FACT-P total score across 73 weeks, at the same level as placebo + ADT. For item GP1 at baseline, the proportion of patients with more than a little lack of energy (i.e., somewhat, quite a bit, or very much; item score >1) was similar between groups (35.9% of enzalutamide and 37.0% of placebo patients). At week73, the proportion of patients with stable (enzalutamide 39.0%; placebo 36.4%) or improved (enzalutamide 41.5%; placebo 32.4%) lack of energy was similar in both groups (Figure 1). For GP7 at baseline, most patients were not forced to spend time in bed and this was similar between groups (76.4% of enzalutamide patients and 79.6% of placebo patients had a score of 0 [not at all]). At week 73, the proportion of patients who were stable (enzalutamide 73.2%; placebo 82.8%) or had improved (enzalutamide 12.1%; placebo 9.1%) regarding being forced to spend time in bed was similar in both groups (Figure 2).

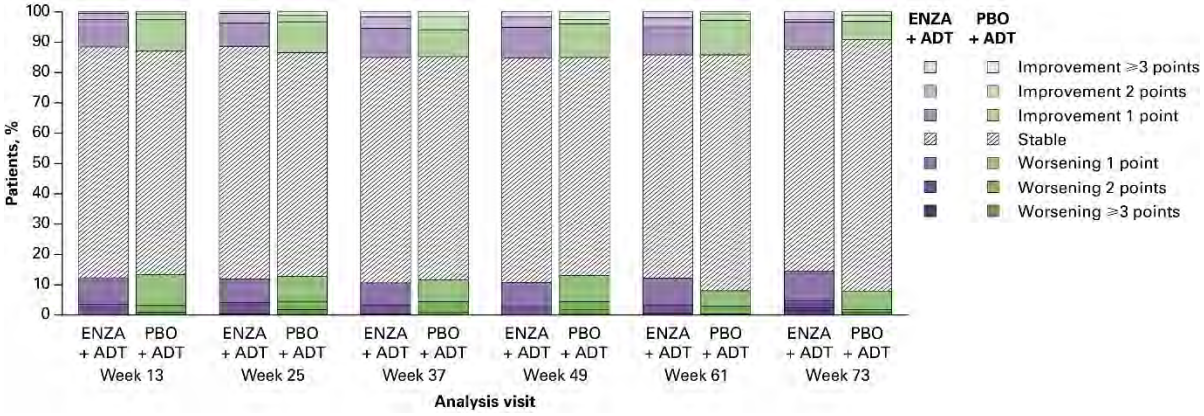
Conclusions: Men with mHSPC were generally asymptomatic, with high HRQoL and low pain at baseline, likely due to many patients initiating ADT several months prestudy. No clinically meaningful differences in HRQoL were observed between enzalutamide and placebo. Similar proportions of patients in enzalutamide and placebo groups reported stable or improved fatigue item scores at week 73.

Figure 1. Distribution of changes in reponses for FACT–P, item GP1 (lack of energy)



Post-baseline item scores were classified as described above, according to response categories of worsening, stable, or improved versus baseline. ADT, androgen deprivation therapy; ENZA, enzalutamide; FACT-P, Functional Assessment of Cancer Therapy–Prostate; PBO, placebo.

Figure 2. Distribution of changes in responses for FACT–P, item GP7 (forced to spend time in bed)



Post-baseline item scores were classified as described above, according to response categories of worsening, stable, or improved versus baseline. ADT, androgen deprivation therapy; ENZA, enzalutamide; FACT-P, Functional Assessment of Cancer Therapy–Prostate; PBO, placebo.

Funding: This study was funded by Astellas Pharma Inc. and Pfizer Inc., the co-developers of enzalutamide. Medical writing and editorial assistance were provided by Tom Lavelle from Bioscript and Folabomi Oladosu, PhD, and Jane Beck from Complete Health Vizion, funded by the study sponsors.

This abstract was accepted and previously presented at the 2019 Society of Urologic Oncology Annual Meeting.

【Symposium III】

The Interplay between Testosterone Level and Prostate Health

陳卷書醫師
台中榮民總醫院泌尿外科

演講摘要

隨著對於男性更年期的了解，有越來越多的熟男開始接受荷爾蒙補充療法，因為我們每個男性學醫師手上應該都會有這樣子的病人，而攝護腺健康更是每位男性病患很關心的議題，所以我們應該要去了解血中睪固酮濃度與攝護腺健康兩者之間的相互影響。本次演講內容主要分成兩大部分，第一部分主要是探討那些接受荷爾蒙補充療法的病人與他們本身的下泌尿道症狀、血清中ＰＳＡ和攝護腺癌風險之間的關係；第二部分去了解身為攝護腺癌的患者其血清中的睪固酮濃度高低是否可以用來作為未來癌症預後的指標，另外這些攝護腺癌的患者若有荷爾蒙低下的情形是否適合接受荷爾蒙補充治療。

【Symposium III】

The Role of Testosterone Replacement Therapy as an Anti-Aging Therapy

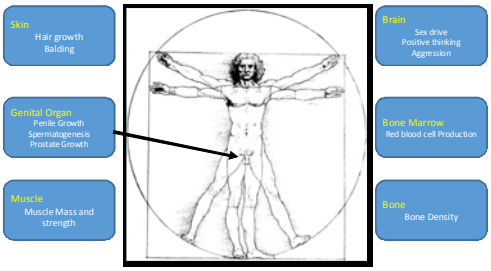
張奕凱醫師
台大醫院泌尿部

The Role of Testosterone Replacement Therapy as an Anti-Aging Therapy

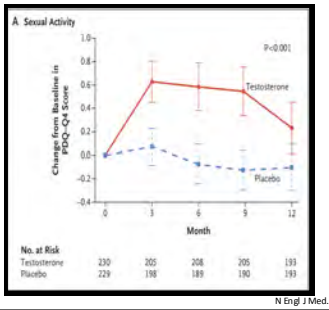
台大醫院泌尿部 張奕凱醫師

2020 @ 張榮發基金會八樓

Testosterone Function (Action)

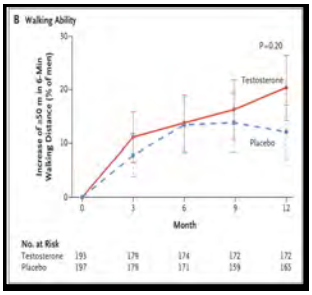


Sexual Function



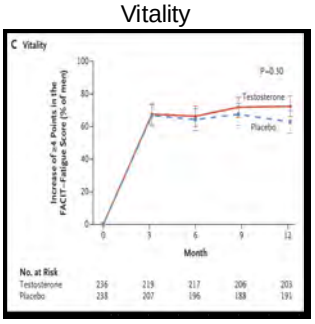
N Engl J Med. 2016 Jul. Laurent MR

Walking Ability



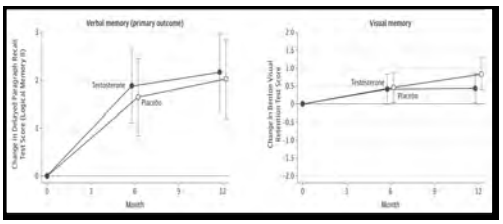
N Engl J Med. 2016 Jul. Laurent MR

Vitality



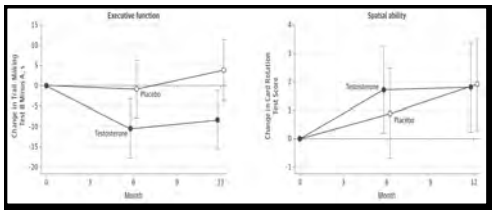
N Engl J Med. 2016 Jul. Laurent MR

Memory



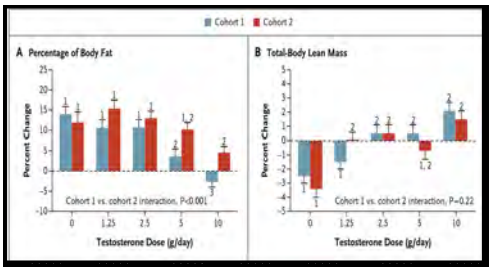
JAMA. 2017 Feb Resnick SM

Cognitive Function



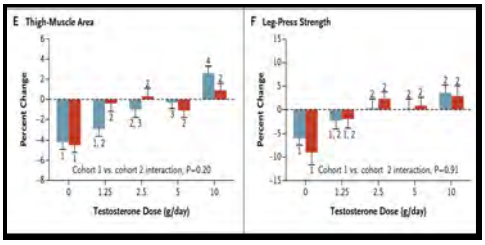
JAMA. 2017 Feb Resnick SM

Body Composition



N Engl J Med. 2013 Dec Finkelstein JS

Body Composition



N Engl J Med. 2013 Dec Finkelstein JS

【Symposium IV】

Common Genital Skin Conditions Encountered at Urologic Office

李嘉文醫師
鳳山李嘉文泌尿科診所

Patients may seek a sexually transmitted disease (STD) evaluation for essentially anything they perceive as abnormal and that is located “below the belt.” Although the presence of an STD should always be considered and ruled out, many patients who seek care for a suspected STD have non-sexually transmitted genital conditions. For this reason, urologic clinicians should have a basic understanding of the spectrum of both normal skin findings and common dermatologic conditions that arise in the genitalia so they can prescribe appropriate therapy, refer the patient to a dermatologist for additional evaluation and management when necessary, or provide reassurance.

Now we discusses the sexually and nonsexually transmitted dermatologic conditions most commonly encountered in the STD clinic setting, as well as normal variants. The discussion of pathologic lesions that follows is organized by morphology and color of lesion.

The symptoms/types of Genital Skin Conditions commonly seen at the urological clinic include:

Men:
Warts/Molluscum contagiosum/herpes; Balanoprosthitis/Zoon’s disease Zoon's balanitis; Angiokeratomas/Cherryt angiomas; Dermatitis; Psoriasis; Lichen Sclerosus; Lichen Planus; Cysts/Median Raphye cyst; Hypospadias; Bechcet’s Disease; Cancer / Premalignant and malignant lesions; STIs Fordye’s spot/Pearl penile papules; Lichen Nitidus; sebaceous cysts; seborrheic keratoses; Anal skin lesions.

Women:
Thrush/murrain; Warts/Molluscum contagiosum/herpes; Vulvitis; Hidradenitis; Erosive Lichen Planus Lichen Sclerosus; Cysts/inflamed cysts; Bechcet’s Disease; Dermatitis; Psoriasis; Vulvo-gingival Disease Cancer; Vestibular Papillae

【Symposium IV】

CURRICULUM VITAE

烏惟新醫師 簡介
Dr. Wei-Hsin Wu

Current Position:
Attending physician, Department of Dermatology, National Taiwan University Hospital

Education:
1997 - 2004 National Taiwan University College of Medicine, Taipei
2003 - 2004 Internship, National Taiwan University Hospital, Taipei
2006 - 2010 Resident, Department of Dermatology, National Taiwan University Hospital, Taipei

Employment Record:
(1) Internship
2003.07 - 2004.06 National Taiwan University Hospital, Taipei
(2) Residency of Dermatology
2006.07 - 2010.06 National Taiwan University Hospital, Taipei
(3) Chief Resident of Dermatology
2009.07 - 2010.06 National Taiwan University Hospital, Taipei
(4) Attending Physician
2010.07 - 2014.08 Keelung Municipal Hospital, Keelung
2014.08 - 2016.07 National Taiwan University Hospital, Yun-Lin Branch, Yun-Lin
2016.07 – present National Taiwan University Hospital
(5) Chief of the Department of Dermatology
2014.09 - 2016.07 National Taiwan University Hospital, Yun-Lin Branch, Yun-Lin
(6) The Dermatology Clinic at National Taiwan University Children's Hospital
2017.07 – present National Taiwan University Children's Hospital

【Symposium IV】

Genital Skin Disorders We need to Transfer to Dermatologists

Dr. Wei-Hsin Wu

Genital erosion and ulcers

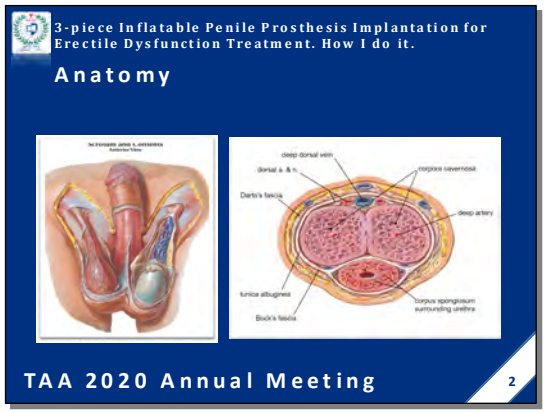
- Sexually transmitted disease
  - ❖ Chancre of primary syphilis
  - ❖ Herpes simplex
  - ❖ Chancroid
  - ❖ Granuloma inguinale
  - ❖ Lymphogranulomavenereum

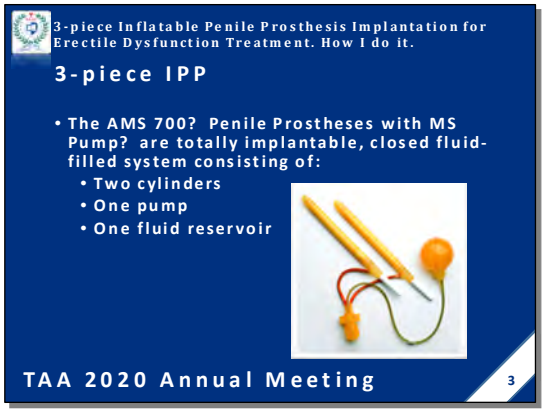
- Noninfectious
  - ❖ Genital Aphthae
  - ❖ Behçet's disease
  - ❖ Lipschutz ulcer
  - ❖ Juvenile gangrenous vasculitis of the scrotum
  - ❖ Drug eruptions
  - ❖ Erosive lichen planus
  - ❖ Hidradenititis suppurativa
  - ❖ Erythroplasia of Queyrat
  - ❖ Extramammary Paget disease

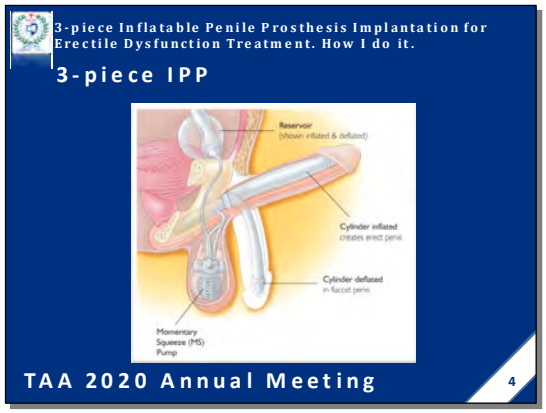
【Symposium V】

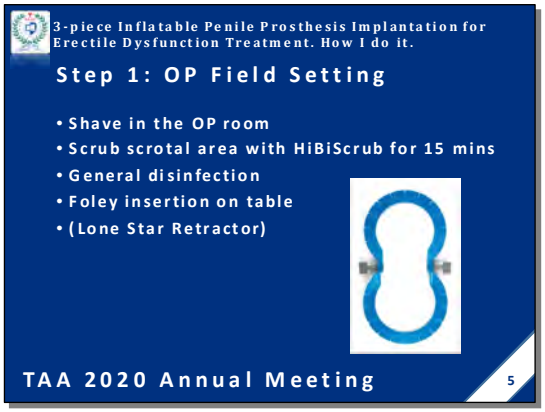
3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it

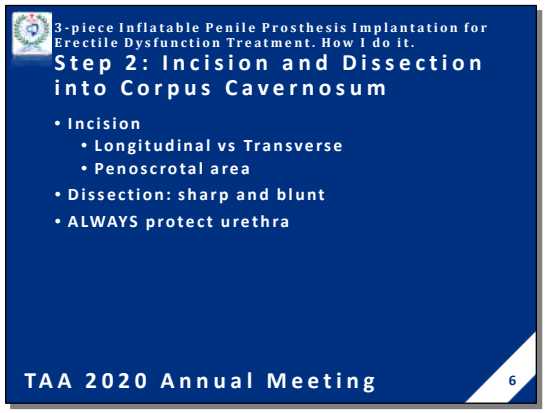
張孟霖醫師
輔仁大學附設醫院泌尿科醫師
輔仁大學醫學系專任講師











3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 3: Corpus Preparation and Cylinder Insertion

- Open Corpus Cavernosum
  - Stay suture
  - Incise tunica albuginea of corpus cavernosum
  - (re-stay suture)
- Dilatation
- Irrigation: NS with Gentamicin or Vancomycin
- Place close suture: Vicryl, Monocryl, PDS

TAA 2020 Annual Meeting 7

3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 3: Corpus Preparation and Cylinder Insertion

- Dilatator

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3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 3: Corpus Preparation and Cylinder Insertion

- Measure length of corpus cavernosum
  - Distal measurement
  - (Coporotomy)
  - Proximal measurement
- Test corpus with Irrigation
- Cylinder
  - Choose tip cap
  - Insertion: needle go out in mid-glans

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3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 4: Create Prevesical Space and Reservoir Insertion

- Make preperitoneal space, next to bladder
  - Through scrotal wound
  - New small incision above pubic bone (direct hernia route)
- Reservoir
  - Fill reservoir to expand space

TAA 2020 Annual Meeting 10

3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 5: Insert Pump into interscrotal space

- Dissection space
  - Under dartus muscle
  - Blunt dissection: dilator, finger, kelly clamp
- Pump position
  - Right/anterior: easy to use
  - Deep/posterior: cosmetic

TAA 2020 Annual Meeting 11

3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 6: Tube Connection

- Tube length
  - Short: cosmetic, comfortable, hard to connect
  - Long: Easy to connect
- Connect
  - Fill water, reduce air bubbles inside tube
  - Use finger, not instrument to prevent damage on tube

TAA 2020 Annual Meeting 12

3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 7: Close Wound and Drain Placement

- Close wound
  - Multiple layer, close with Vicryl, interrupt
  - Skin: Chromic/Vicryl, interrupt or continuous
- Drain (closed)
  - Only placed when blood oozing
  - For 1-2 days

TAA 2020 Annual Meeting 13

3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Step 8: Wound Dressing

- Compress with 3-4 inch Elastic Gauze Bandage
- Mummy Wrap: Cover Penis and Scrotum

TAA 2020 Annual Meeting 14

3-piece Inflatable Penile Prosthesis Implantation for Erectile Dysfunction Treatment. How I do it.

Thanks !

TAA 2020 Annual Meeting 15

【Symposium V】

如何施行局部麻醉完成人工陰莖植入手術?

謝政興[1] 許耕榕[2]
台北慈濟醫院 慈濟大學醫學院 泌尿科花蓮[1]
栩仕診所 顯微手術功能重建暨研究中心 台北[2] 台灣

Penile Prosthesis Implantation under Local Anesthesia. How I do it?

Cheng-Hsing Hsieh[1], Geng-Long Hsu[2]
Department of Urology, Taipei Tzuchi Hospital, The Buddhist Tzuchi Medical Foundation;
School of Medicine, Buddhist Tzu Chi University, Hualien[1],
Microsurgical Potency Reconstruction and Research Center, Hsu's Andrology, Taipei[2], Taiwan

Although local anesthesia for penile prosthesis implants has been reported in the literature, the feasibility, simplicity and reliability remained controversial owing to the paucity of standardized methodology, various operative procedures, different outcome measurement and different follow-up periods. We would report on an innovative penile crural block using local anesthesia in patients who underwent penile prosthesis implantation as an outpatient surgery. From March 1987 to March 1991, a total of 21 organically impotent men, aged from 27 to 77 years, received penile prosthesis implantation. All these were performed under pudendal nerve block as an outpatient procedure. From August 1992 to Dec 2019 a proximal dorsal nerve block with peripenile infiltration and penile crural block was developed to replace the anesthesia method of pudendal nerve blocks in 239 consecutive patients (aged from 35 to 83 years) undergoing penile implants. The anesthetic effects and postoperative results with the crural block were satisfactory. Immediate side-effects included puncture of the vessels, subcutaneous ecchymosis, transient palpitations and dilation pain. However, there were no significant late complications. In the group of pudendal nerve blockage, 42.9% patients (nine of 21) suffered severe aching pain over the perineum for 1 more weeks postoperatively, whereas the newly developed method of crural block remarkably reduced those adverse effects. The local anesthetic method proved to be reliable, simple, and safe with minor and negligible complications. It furnished an advantages of less morbidity, protection of patient's privacy, reduced adverse effects of anesthesia, and a more rapid return to activity with minimal complications.

【Symposium VI】

Androgen Treatment　Guideline and Safety Concerns in Female Sexual Dysfunction

張美玉醫師
小港高美泌尿科診所

Androgen treatment guideline and safety concerns in female sexual dysfunction

1090627 13:00 -13:15
小港高美泌尿科診所
院長 張美玉醫師

Daignosis of androgen deficiency

recommend against making a clinical diagnosis of androgen deficiency syndrome in healthy women
- lack of a well-defined syndrome, and data correlating androgen levels with specific signs or symptoms are unavailable (1QQEE).

J Clin Endocrinol Metab 99: 3489–3510, 2014

Generalized Treatment of Women with Testosterone or Dehydroepiandrosterone (DHEA)

- against the generalized use of T b**y women for infertility**
- **Sexual ysfunction(except for a specific** diagnosis of hypoactive sexual desiredesiredisorder(HSDD)
- Cognitive dysfunction
- cardiovascular dysfunction
- metabolic dysfunction
- bone health
- well-being
- government agency–approved and monitored dose-appropriate preparations are not widely available.

Treatment of Women with Low Androgen level

- against the routine treatment of women with low androgen levels due to hypopituitarism, adrenal insufficiency, bilateral oophorectomy, or other conditions associated with low androgen levels because of the lack of adequate data supporting efficacy and/or longterm safety
- against routinely measuring T in women for diagnosis, because a correlation between symptoms and T levels has not been established
- against routinely measuring T in women for diagnosis, because a correlation between symptoms and T levels has not been established

Testosterone Therapy for Women with HSDD

- suggest a 3- to 6-month trial of a dose of T for postmenopausal women who request therapy for properly diagnosed HSDD
- suggest measuring T levels at baseline and after 3–6 weeks of initial treatment to assess patient overuse
- In cases of ongoing T therapy, we suggest reviewing T levels every 6 months to monitor for excessive use and signs of androgen excess
- suggest cessation of T therapy for women who have not responded to treatment by 6 months.
- No safety and efficacy data for T therapy are available after 24 months

Androgen Therapy and Monitoring

- against the treatment of women with T preparations formulated for men or those formulated by pharmacies due to a lack of data concerning efficacy and safety of these preparations in women
- a woman is to be given a trial of T therapy, we suggest checking baseline T level and the use of an approved non-oral preparation for women (such as a transdermal patch ,gel , or cream) if such a treatment is available
- suggest monitoring T levels 3–6 weeks after initiation of therapy and every 6 months thereafter to assess for patient overuse or signs of androgen excess
- suggest cessation of therapy for women who have not responded to treatment by 6 months.
- Safety and efficacy data for T therapy in women are not available beyond 24 months

Curr Opin Urol. 2020 May;30(3):309-316. doi: 10.1097/MOU.0000000000000759.

Testosterone therapy and other treatment modalities for female sexual dysfunction.

Ingram CF[1], Payne KS[1], Messore M[2], Scovell JM[1,3].

Author information

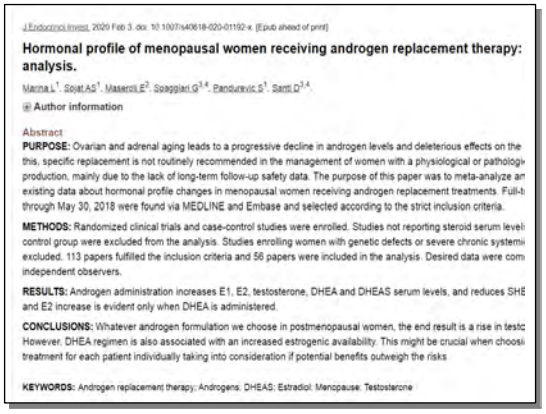
Abstract

PURPOSE OF REVIEW: Recently in October 2019 a Global Consensus Position on the use of Testosterone Therapy for Women was published. The use of testosterone and other agents for female sexual dysfunction (FSD) is an important topic for the urologist focusing on sexual health. This review describes the known causes for FSD, and discusses the role of androgens in this disorder, the evidence for using testosterone treatment, and other current and emerging therapies.

RECENT FINDINGS: A recent meta-analysis, published in The Lancet Diabetes & Endocrinology evaluated a total of 36 randomized control trials spanning 1990-2018 and includes a total of 8480 patients. The primary findings were that testosterone therapy (TTh) increased sexual function including satisfactory sexual event frequency, sexual desire, pleasure, arousal, orgasm, responsiveness, and self-image when compared with either a placebo or drug-control (e.g., estrogen±progestogen). In addition, TTh reduced sexual concerns and distress in postmenopausal women. Side effects included an increase in weight, acne, and hair growth, but there was no increase in serious adverse events. Importantly, TTh duration was greater than 12 weeks in all randomized control trials included in this meta-analysis.

SUMMARY: TTh is effective to treat FSD in postmenopausal women. More data is required to evaluate the long-term safety data on the effects of TTh on cardiovascular health, breast health, cognitive function, and the musculoskeletal system in women.

PMID: 32295812 DOI: 10.1097/MOU.0000000000000759



J Endocrinol Invest. 2020 Feb 3. doi: 10.1007/s40618-020-01192-x. [Epub ahead of print]

Hormonal profile of menopausal women receiving androgen replacement therapy: analysis.

Marina L[1], Sojat AS[1], Maseroli E[2], Spaggiari G[3,4], Pandurevic S[1], Santi D[3,4].

Author information

Abstract

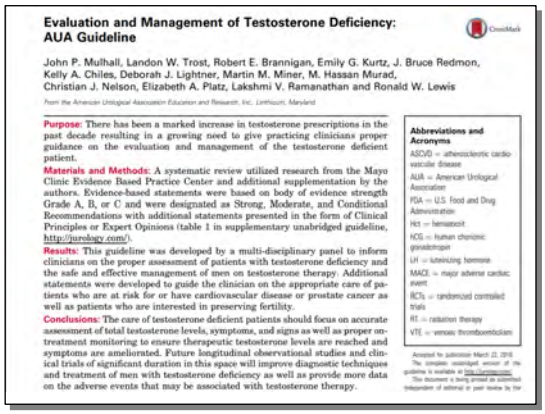
PURPOSE: Ovarian and adrenal aging leads to a progressive decline in androgen levels and deleterious effects on the this, specific replacement is not routinely recommended in the management of women with a physiological or patholog production, mainly due to the lack of long-term follow-up safety data. The purpose of this paper was to meta-analyze an existing data about hormonal profile changes in menopausal women receiving androgen replacement treatments. Full-t through May 30, 2018 were found via MEDLINE and Embase and selected according to the strict inclusion criteria.

METHODS: Randomized clinical trials and case-control studies were enrolled. Studies not reporting steroid serum level control group were excluded from the analysis. Studies enrolling women with genetic defects or severe chronic systemi excluded. 113 papers fulfilled the inclusion criteria and 56 papers were included in the analysis. Desired data were com independent observers.

RESULTS: Androgen administration increases E1, E2, testosterone, DHEA and DHEAS serum levels, and reduces SHE and E2 increase is evident only when DHEA is administered.

CONCLUSIONS: Whatever androgen formulation we choose in postmenopausal women, the end result is a rise in testo However, DHEA regimen is also associated with an increased estrogenic availability. This might be crucial when choosi treatment for each patient individually taking into consideration if potential benefits outweigh the risks.

KEYWORDS: Androgen replacement therapy; Androgens; DHEAS; Estradiol; Menopause; Testosterone



Evaluation and Management of Testosterone Deficiency: AUA Guideline

John P. Mulhall, Landon W. Trost, Robert E. Brannigan, Emily G. Kurtz, J. Bruce Redmon, Kelly A. Chiles, Deborah J. Lightner, Martin M. Miner, M. Hassan Murad, Christian J. Nelson, Elizabeth A. Platz, Lakshmi V. Ramanathan and Ronald W. Lewis

From the American Urological Association Education and Research, Inc., Linthicum, Maryland

Purpose: There has been a marked increase in testosterone prescriptions in the past decade resulting in a growing need to give practicing clinicians proper guidance on the evaluation and management of the testosterone deficient patient.

Materials and Methods: A systematic review utilized research from the Mayo Clinic Evidence Based Practice Center and additional supplementation by the authors. Evidence-based statements were based on body of evidence strength Grade A, B, or C and were designated as Strong, Moderate, and Conditional Recommendations with additional statements presented in the form of Clinical Principles or Expert Opinions (table 1 in supplementary unabridged guideline, http://jurology.com/).

Results: This guideline was developed by a multi-disciplinary panel to inform clinicians on the proper assessment of patients with testosterone deficiency and the safe and effective management of men on testosterone therapy. Additional statements were developed to guide the clinician on the appropriate care of patients who are at risk for or have cardiovascular disease or prostate cancer as well as patients who are interested in preserving fertility.

Conclusions: The care of testosterone deficient patients should focus on accurate assessment of total testosterone levels, symptoms, and signs as well as proper on-treatment monitoring to ensure therapeutic testosterone levels are reached and symptoms are ameliorated. Future longitudinal observational studies and clinical trials of significant duration in this space will improve diagnostic techniques and treatment of men with testosterone deficiency as well as provide more data on the adverse events that may be associated with testosterone therapy.

Abbreviations and Acronyms

ASCVD = atherosclerotic cardiovascular disease
AUA = American Urological Association
FDA = U.S. Food and Drug Administration
Hct = hematocrit
hCG = human chorionic gonadotropin
LH = luteinizing hormone
MACE = major adverse cardiac event
RCTs = randomized controlled trials
RT = radiation therapy
VTE = venous thromboembolism

Accepted for publication March 22, 2018.
The complete unabridged version of the guideline is available at http://jurology.com/.
This document is being posted as submitted, independent of editorial or peer review by the

【Symposium VI】

Cardiovascular Issues in Female Sexual Dysfunction

胡如娟醫師
台北榮民總醫院蘇澳分院

There are plenty of studies in sexual dysfunction in men, but there is a paucity of researches on sexual dysfunction in women. However, the incidence of female sexual dysfunction is higher than male sexual dysfunction. One study published on NEJM in 1978 disclosed that 40% of men had erectile or ejaculatory dysfunction while 63% of women reported arousal or orgasmic dysfunction. Nowadays, the studies and efforts put on the female filed are still limited.

For men, a plethora of data support that (1) atherosclerosis and endothelium dysfunction are the causes of erectile dysfunction (2) Erectile dysfunction is a predictor for the occult cardiovascular disease. Although the evidence is still limited in women, we now could know there probably is a similar phenomenon that a strong link between hypertension and female sexual dysfunction exists.

In this presentation, I would review the current evidence about the associations of female sexual dysfunction and hypertension/cardiovascular disease. The duration of hypertension, receiving treatment or not, and even achieving well-controlled blood pressure or not could even interfere with the sexual function in women. Anti-hypertension medications might also play a negative or positive role in female sexual health.

【Symposium VII】

PSA and 5α Reductase Inhibitor Treatment: Clinical Implications

蔡嘉駿醫師
高雄市立大同醫院泌尿科

5α-Reductase inhibitors (5-ARIs), commonly used to treat benign prostatic hyperplasia (BPH), reduce serum prostate-specific antigen (PSA) concentrations by 50%, even 70% after long-term use. The influence of 5-ARIs with detection of prostate cancer in a PSA-screened population remains equivocal. The use of 5ARIs decrease PSA and in theory, 5ARIs could affect the performance of PSA based screening and the outcome of prostate cancer. One hypothesis suppose that prediagnostic 5-ARIs use is associated with a delayed diagnosis, more advanced disease at diagnosis, and higher risk of prostate cancer-specific mortality and all-cause mortality than use of no PSA-decreasing drugs. Since 2000, there are two large population-based prospective study to examine the long-term consequences of 5ARI on PSA change and prostate cancer risk, Finasteride in the Prostate Cancer Prevention Trial (PCPT) and dutasteride in the REduction by DUtasteride of prostate Cancer Events (REDUCE). In PCPT study, Finasteride provides a substantial reduction in prostate cancer. Although high-grade prostate cancer was more common in the finasteride group than in the placebo group, but after 18 years of follow-up, there was no significant between-group difference in the rates of overall survival or survival after the diagnosis of prostate cancer. In REDUCE study, dutasteride also reduced the risk of incident prostate cancer detected on biopsy. The reduction was shown to be most significant reduction in low-grade prostate cancer; however, the association between dutasteride and high grade prostate cancer cannot be definitely excluded. In recently, some studies rechecked and reviewed the impact of 5ARI on PSA and prostate cancer. Most studies showed that the use of 5ARIs was associated with lower risk of prostate cancer diagnosis, regardless of comparison group. Risk of high grade prostate cancer was higher among both 5ARI users compared with non-users; however, this did not translate into higher risk of prostate cancer mortality. But the study of JAMA Intern Med in 2019 demonstrate that prediagnostic use of 5-ARIs was associated with delayed diagnosis and worse cancer-specific outcomes in men with prostate cancer. These data highlight a continued need to raise awareness of 5-ARI-induced PSA suppression, establish clear guidelines for early prostate cancer detection, and motivate systems-based practices to facilitate optimal care for men who use 5-ARIs.

【Symposium VII】

Sexual Dysfunction in Men with 5ARI

邱鴻傑醫師
中國醫藥大學附設醫院泌尿部
亞洲大學附屬醫院泌尿科

- The Effects of Oral 5-alpha Reductase Inhibitors on Penile Intracavernosal Pressures and Penile Morphology in Rat Model
  - BPH and ED affect more than 50 % of men older than 50 years of age
  - 5-ARIs for the treatment of BPH caused ED in 0.8-15.8% of the patients
  - marked atrophic changes in prostatic epithelial tissues, and prominent collagen deposition in penile cavernosal tissues, no significant effect on penile ICPs was seen
  - DHT is a potent activator of the enzyme nitric oxide synthase and this enzyme is involved in one of the main mechanisms of smooth muscle relaxation
  - The possibility of recovering normal penile morphology after discontinuing these drugs and whether either of the drugs is associated with a faster or more complete return to a normal penile morphology remains unknown
  - Some patients treated with 5AR inhibitors showed persistent adverse effects, even after discontinuing treatment, which is of major concern

- Sexual dysfunction in subjects treated with 5ARI for BPH: a comprehensive review and meta-analysis
  - 5ARIs determined an increased risk of hypoactive sexual desire and erectile dysfunction
  - No difference between finasteride and dutasteride regarding the risk of hypoactive sexual desire and erectile dysfunction
  - risk of hypoactive sexual desire and erectile dysfunction was higher in subjects with lower Qmax at enrollment
  - Patients should be adequately informed before 5ARIs are prescribed

- Meta-analysis of the efficacy and safety of combination of tamsulosin plus dutasteride compared with tamsulosin monotherapy
  - IPSS, PV,TZV, Qmax are superior in combination group
  - AEs, ED, Ejaculaton disorder, retrograde ejaculation, decrease libido, loss of libido, rate higher in combination group, but similar rate in dizziness

- A prospective randomised placebo-controlled study of the impact of dutasteride/tamsulosin combination therapy on sexual function domains
  - significant decrease in total MSHQ score, ejaculation and satisfaction domains but not the erection domain

- Efficacy and Safety of the Coadministration of PDE5i and 5 alpha-reductase inhibitor for 6 Months
  - The incidence of AEs was low, with most being mild to moderate in severity
  - PSS total scores, I-PSS voiding, storage subscores and I-PSS-QoL., IIEF domains significantly improved in coadministration group

【Symposium VII】

How to Avoid Post-op Stress Urinary Incontinence in Patients Receiving Prostate Enucleation Surgery

Speaker: 黃榮堯醫師/張雲筑醫師

Outline of the lecture:

1. Definition of urinary incontinence after prostate treatment
   (1) 2019 AUA guideline: Incontinence after prostate treatment
   (2) ICS definition of SUI
   (3) Transient and persistent SUI
   (4) Severity of SUI

2. Pathophysiology of de novo urinary incontinence
   (1) Bladder dysfunction
   (2) Intrinsic sphincter deficiency
   (3) Intraoperative damage to urethral sphincter or neurological innervations

3. Literature review for the risk factors
   (1) Old age
   (2) DM
   (3) Detrusor overactivity
   (4) Pre-op Foley indwelling
   (5) Thickness of levator ani muscle
   (6) Length of membranous urethra
   (7) Large prostate size
   (8) Surgeon's experience

4. Strategies for continence preserving
   (1) Pre-operative phase
      ◆ Patient selection and integrated shared decision making
   (2) Intra-operative phase
      ◆ Divide prostatic urethra at peri-verumontanum level from proximal sphincter
      ◆ Preserve the anterior urethral valve at prostate apex
      ◆ Achieve hemostasis with low energy at external sphincter
      ◆ Preserve natural bladder neck
      ◆ Prevent capsule perforation to preserve NVB

(3) The surgical techniques for enucleation

- Landmarks: The junction between adenoma and sphincter、
  Surgical capsule
- How to perform a circumferencial incision to mark the limit between the adenoma and the external sphincter

【Symposium VIII】

性別不安個案的精神科評估
Psychiatric Assessment of Gender Dysphoria Patients

劉智民醫師
台灣大學附設醫院精神醫學部
台灣大學精神科助理教授
Chih-Min Liu
Department of Psychiatry
National Taiwan University Hospital

隨著時代的演進，性別議題不斷被關注及討論，昔日通稱的變性患者(transgender)，也隨著美國精神醫學協會出版的 DSM 5 正式改名為性別不安(gender dysphoria)，新的命名去除了障礙(disorder)這個字，減少對該族群的精神醫學化及不必要的標籤及歧見。我們會介紹性別不安的診斷評估，個案常見的性心理發展，其適應困難及適應過程，過程中，精神科醫師如何協助個案減少性別不一致帶來的身心困擾，以及精神科在評估性別不安個案在進一步接受荷爾蒙替代療法，整型手術及性別置換手術所扮演的角色，以及如何與臨床心理師，社工師，以及內分泌科，泌尿科，整型外科，婦產科各相關科系醫師形成整合性團隊一同協助個案，達成個案較為理想的性別狀態，減少個案的身心適應壓力，及增進個案的生活品質及幸福感。

【Symposium VIII】

Hormone Therapy for Transgender Patients

劉妙真醫師
林口長庚醫院新陳代謝科主治醫師
長庚大學新陳代謝科助理教授

Abstract

Transgender people have a gender identity that differs from their sex assigned at birth. Many transgender individuals accessing gender affirming hormone therapy (HT) is an important and medically necessary step in their gender transition. Cross-sex hormone therapy has been shown to have positive physical and psychological effects on the transitioning individual and is considered a mainstay treatment for many patients.

Exogenous testosterone is used in transgender men to induce virilization and suppress feminizing characteristics. In transgender women, exogenous estrogen is used to help feminize patients, and anti-androgens are used as adjuncts to help suppress masculinizing features. Guidelines exist to help providers choose appropriate candidates for hormone therapy, and act as a framework for choosing treatment regimens and managing surveillance in these patients.

Both feminizing and masculinizing regimens are safe when used within established hormone protocols and are associated with significant improvements in mental health outcomes, including reduction in depression, anxiety and gender dysphoria. Bone and cardiovascular health are important considerations in transgender patients on long-term hormones, and care should be taken to monitor certain metabolic indices while patients are on cross-sex hormone therapy.

Clinicians should be aware of the current best practice guidelines for initiating and maintaining patients on HT.

【Symposium VIII】

CURRICULUM VITAE

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臺灣美容外科醫學會專科醫師
國際美容整形外科醫學會醫師 ISAPS (International Society of Aesthetic and Plastic Surgery)
世界跨性別者健康促進教授協會醫師 WPATH (World Professional Association of Transgender Healthcare)

【Symposium VIII】

Male-to-female Sexual Reassignment Surgery-My Personal Experience

沈秉輝醫師
昕彤診所
中心綜合醫院

Sexual reassignment surgery is often the last and the most considered step in the treatment process for transsexuals with gender dysphoria. In male-to-female SRS, the surgical procedures include vulvoplasty and vaginoplasty which are able to achieve the cosmetic and functional satisfactions on these patients. Techniques include orchiectomy, penectomy, penoscrotal flap vaginoplasty, clitoroplasty, and labiaplasty. However, the perioperative complications of penoscrotal flap vaginoplasty and vulvoplasty are not uncommon, which include vaginal stenosis, bleeding, partial preputial flap necrosis and other unusual problems.

From Jan. 2011 through Nov. 2019, we had completed sexual reassignment surgery on 104 individuals who were diagnosed as male-to-female transsexuals with gender dysphoria. Here, I am going to exhibit my personal techniques and share the experience about male-to-female SRS.

【Symposium IX】

Overview of Treatment for Prostate Cancer: Past, Present, and Future

周博敏醫師
台大醫院泌尿部

Abstract

The treatment for advanced prostate cancer has evolved a lot in the last decade. Data from phase 3 trials including COU-AA-301, COU-AA-302, AFFIRM, PREVAIL, ALSYMPCA, CHAARTED, STEMPEDE, LATTITUDE, ARCHES, ENZAMET, and TITAN have changed the standard of care in both mCRPC and mHSPC.

【Symposium X】

Updated Evidence of LI-ESWT in the Treatment of Erectile Dysfunction

劉家駒醫師 MD, PhD
高雄醫學大學附設醫院泌尿科 高雄醫學大學醫學系泌尿學科
衛生福利部屏東醫院泌尿科

Abstract

The application of low-intensity extracorporeal shockwave therapy (LI-ESWT) in the treatment of erectile dysfunction (ED) had drawn a lot of attention from urologists worldwide. It is found to be able to improve the underlying pathophysiology of ED through several mechanisms included enhancing neovascularization, tissue remodeling, nerve repair and regeneration in corpora cavernosa[1]. Recently, updated meta-analysis of 7 RCTs (n= 607) to evaluate the efficacy of LI-ESWT showed that IIEF-EF in treated group is significantly increased 4.23 score compared to sham group at the 1 month follow up (p = 0.012). In addition, the pooled relative risk of EHS improvement (EHS≦2 to EHS≧3) for the treated *versus* sham group was 6.63 (p = 0.0095)[2]. In a series of 156 patients, the long-term efficacy of LI-ESWT in 99 successful responders (63.5%) were reported to be 82.8% at 6 months follow up, 67.6% at 1 year follow up and 53.5% at 2 year follow up[3]. However, the initial severity of ED is the most important factor to determine its long-term efficacy (40.9% in severe ED *versus* 66.0% in non-severe ED: at 2 year follow up)[3]. About the safety issue of LI-ESWT, no significant adverse events were found in the updated meta-analysis[2]. Patients with anticoagulant/antiplatelet use were traditionally viewed as contraindication to receive LI-ESWT. However, new evidence showed that it may be safe in those patients[4].

In summary, most of studies of LI-ESWT in the treatment of ED have shown encouraging results in the improvement of IIEF and EHS. In the future, it could become a new standard of care for men with ED either as an alternative therapy or as enhancer to the current treatment of ED. However, additional studies are still needed to fully evaluate its long-term efficacy, and determine optimal therapeutic protocols in patients with different etiologies of ED.

References:

1. Sokolakis I, Dimitriadis F, Teo P, Hatzichristodoulou G, Hatzichristou D, Giuliano F. The Basic Science Behind Low-Intensity Extracorporeal Shockwave Therapy for Erectile Dysfunction: A Systematic Scoping Review of Pre-Clinical Studies. J Sex Med 2019;16:168-94.
2. Campbell JD, Trock BJ, Oppenheim AR, Anusionwu I, Gor RA, Burnett AL. Meta-analysis of randomized controlled trials that assess the efficacy of low-intensity shockwave therapy for the treatment of erectile dysfunction. The Adv Urol 2019;11:1756287219838364.
3. Kitrey ND, Vardi Y, Appel B, et al. Low Intensity Shock Wave Treatment for Erectile Dysfunction-How Long Does the Effect Last? J Urol 2018;200:167-70.
4. Kalyvianakis D, Memmos D, Mykoniatis I, Kapoteli P, Hatzichristou D. Low-Intensity Shockwave Therapy (LiST) for Erectile Dysfunction: Is It Safe for Patients on Anticoagulant Medication? J Sex Med 2019;16:1478-80.

【Symposium X】

The Potential Role of LI-ESWT in Men with Erectile Dysfunction Following Radical Prostatectomy

William J. Huang
Professor and Director
Department of Urology, Taipei Veterans General Hospital
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Low-intensity extracorporeal shock wave therapy (LI-ESWT) is a novel therapy for erectile dysfunction (ED). Several studies suggest a durable or even curative effects may be achieved after LI-ESWT applied to the corpora cavernosa. It is advocated effective for vasogenic ED by activating the smooth muscle cells and endothelial cells and promoting the repair activity through the function of mesenchymal stem cells. However, the role of LI-ESWT in ED caused by neurogenic etiology, like in condition post radical prostatectomy (RP), is controversial.

In a rat model, LI-ESWT was confirmed to improve the erectile function in post-RP ED. In these studies, angiogenesis in dorsal neurovascular region, endothelial regeneration in cavernous tissues were evident, and also the cellular apoptosis is attenuated (Li et al., 2016; Jeon et al., 2016).

In recent years, there are some randomized controlled trials (RCT) conducted and demonstrated various efficacy. A study included 152 men with muscle invasive bladder cancer receiving radical cystoprostatectomy using LI-ESWT as penile rehabilitation, and showed 16% more patients in LI-ESWT group had recovery of potency as compared to the control group although the difference is not statistically significant (Zewin et al., 2018). Another RCT focusing on 92 patients with prostate cancer receiving radical prostatectomy, showed no particular benefits observed in LI-ESWT treated group (Baccadlini et al., 2020).

In this report, I would like to review the current clinical trials and demonstrate the preliminary results of our pilot study on LI-ESWT for patients receiving robot-assisted radical prostatectomy.

【Symposium XI】

How to Evaluate the Erectile Dysfunction in Legal Cases? Nocturnal Penile Tumescence or Penile Doppler Ultrasonography?

Yuh-Chen Kuo

Erectile dysfunction (ED) is highly prevalent, with 5%-20% of men estimated to suffer from moderate to severe ED. ED is defined as the persistent inability to attain and maintain an erection sufficient to permit satisfactory sexual performance. Most patients with ED can be diagnosed based on medical and sexual history, penile deformities, complex psychiatric or psychosexual disorders, and complex endocrine disorders. Additional special tests such as the nocturnal penile tumescence (NPT) test and penile Doppler ultrasonography (PDU) can be performed to further determine the cause of erection problem. However, in the era of expanding usage of phosphodiesterase type 5 inhibitors these tests are less performed and usually reserved for special purposes according to the latest guidelines.

So far there is no guideline for evaluating erectile function in forensic identification in Taiwan, United states or Europe. Because forensic conclusion usually can be made only once, and it may affect the legal outcome, it is crucial for the forensic evidence to be objective and comprehensive. The NPT test and PDU have been widely used in forensic identification of sexual function for legal purposes. Normal NPT depends on both corticospinal efferent nerve integrity to the penis, and penile tissue vascular responsiveness to these neural signals. As such, nocturnal erections of appropriate duration and strength provide substantiating evidence of intact penile hemodynamic intracorporal regulators as well as central and peripheral neuroregulators, without significant potential for malingering to skew the results. On the other hand, PDU can quantitatively assess vascular impotence severity and is a relatively inexpensive and minimally invasive tool. By measuring peak systolic velocity (cm/s) and end diastolic velocity after intracorporal injection of a vasoactive agent, quantitative measures can be collected for substantiating evidence, or lack thereof, of arterial insufficiency and venous incompetence, respectively.

Such precise evaluation and production of substantiating evidence offers critical legal indications in favor or against judicial decisions in a variety of cases, including but not limited to criminal, worker's compensation, early military discharge, domestic violence, sexual assault, and malpractice charges. At the same time, each of these tests are limited due to the subjective nature of penile measurements which may produce false positive results. In this report, we reviewed the advantages and pitfalls of NPT and PDU.

【Symposium XI】

法律鑑定案件分享

張奕凱醫師
台大醫院泌尿部

法律鑑定案件分享

台大醫院泌尿部 張奕凱醫師
20200627 @ 張榮發基金會8F

大綱

- 性侵案件
- 離婚官司
- 男性學醫師的困境

性侵案件

- 某甲被控性侵一中學男孩，他辯稱自己為性無能，希望法官藉由醫療鑑定他為性無能。

離婚官司

- 某乙與太太婚後不睦，太太宣稱某乙為性無能，希望以此理由訴請離婚。
- 某乙不服 ，認為自己並非性無能，希望法官藉由醫療鑑定他為有性行為能力。

【Symposium XI】

如何解讀法律規定的性無能與性侵

臺灣臺北地方法院
許峻彬法官
東吳大學法律研究所碩士
政治大學新聞研究所碩士

個人經歷：
建業法律事務所律師
臺大醫院法律顧問
臺大醫院臨床倫理委員會委員
聯合報醫藥新聞組記者

演講摘要

一、性無能
（一） 民法如何規定及認定性無能
（二） 刑法如何認定性無能

二、性侵
（一） 刑法對性侵的定義
（二） 從刑事判決看法院如何認定何種行為構成性侵

【Luncheon Symposium II】

Optimizing Treatment in mCRPC Patients with Xofigo (radium-223)

蔡維恭醫師
馬偕紀念醫院泌尿科

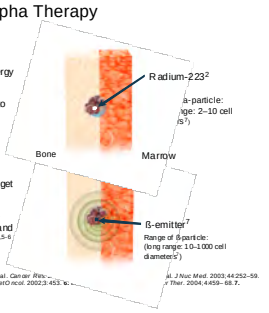
Optimizing Treatment in mCRPC Patients with Xofigo (radium-223)

TSAI, WEI-KUNG MD.
Mackay Memorial Hospital
馬偕泌尿科 蔡維恭 醫師

2020 June.27

Radium-223 Is a Targeted Alpha Therapy

- Radium-223 is a targeted alpha therapy that selectively binds to areas of increased bone turnover in bone metastases and emits high-energy alpha particles of a short range (<100 µm)[1]
- As a bone-seeking calcium mimetic, it is bound to hydroxyapatite into newly formed bone stroma, especially within the microenvironment of osteoblastic or sclerotic metastases[2,3]
- The emission of high-energy alpha particles that cause double-strand DNA breaks, results in a potent and highly localized apoptotic effect in target areas[4]
- The short path of the alpha particles also means that the toxic effects on adjacent healthy tissue and particularly the bone marrow may be minimized[2,5,6]

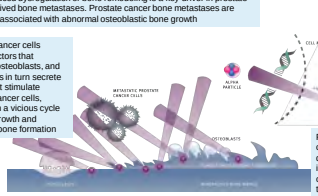


1.Bruland OS., et al. *Clin Cancer Res.* 2006;12:6250s–7s. **2.** Henriksen G, et al. *Cancer Res.* **4.** Suominen MI et al. *Clin Cancer Res.* 2017;23:4335-4336 **5.** Keer C. *Lancet Oncol.* 2002;3:453. **6.** Bacchiabel MW. *Dalton Trans.* 2007;43:4918–4928. *J Nuc Med.* 2003;44:252–59. *r Ther.* 2004;4:459– 68.**7.**

Radium-223 Is a Targeted Alpha Therapy with a Dual-Targeting MoA

Tumor-induced dysregulation of bone remodelling is a key driver in prostate cancer-derived bone metastases. Prostate cancer bone metastases are commonly associated with abnormal osteoblastic bone growth

Prostate cancer cells secrete factors that stimulate osteoblasts, and osteoblasts in turn secrete factors that stimulate prostate cancer cells, resulting in a vicious cycle of tumor growth and abnormal bone formation



Radium-223 induces cytotoxic effects through double stranded DNA breaks in prostate cancer cells, osteoclasts, and osteoblasts, thereby disrupting the vicious cycle of osteoblastic prostate cancer bone metastases

MoA, mechanism of action.
Suominen MI, et al. *Clin Cancer Res.* 2017;23:4335-4336

Radium-223 Phase III Study: ALSYMPCA

PATIENTS

- Confirmed symptomatic CRPC
- ≥2 bone metastases
- No known visceral metastases
- Post-docetaxel, unfit for docetaxel or refused docetaxel

STRATIFICATION

- Total ALP: <220 U/L us ≥220 U/L
- Bisphosphonate use: Yes vs No
- Prior docetaxel: Yes vs No

N=921

Randomized 2:1

TREATMENT

6 injections at 4-week intervals

- **Radium-223 (50 kBq/kg)* + Best standard of care† n=614**
- **Placebo (saline) + Best standard of care n=307**

ALSYMPCA was halted early after the positive efficacy results reported from a planned interim analysis of 809 patients with 314 deaths occurred. An updated analysis of efficacy and safety was performed from all 921 enrolled patients when 528 deaths had occurred.

KEY INCLUSION CRITERIA

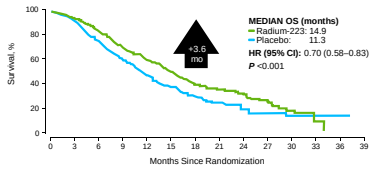
- Histologically confirmed, progressive CRPC with ≥2 bone metastases (on skeletal scintigraphy) and no known visceral metastases
- Patients had either received docetaxel, were not fit enough or willing to receive docetaxel, or did not have docetaxel available

EXCLUSION CRITERIA

- Treatment with chemotherapy within the previous 4 weeks or failure to recover from AEs due to chemotherapy
- Prior hemibody external radiation therapy
- Systemic radiation therapy with radioisotopes within the previous 24 weeks
- Malignant lymphadenopathy >3 cm in short-axis diameter
- History or presence of visceral metastases

ALP, alkaline phosphatase; **ALSYMPCA,** ALpharadin in SYMptomatic Prostate CAncer; **CRPC,** castration-resistant prostate cancer.
*Value is based on data assessed by previously used NIST standard. Updated nominal value of Xofigo is 55 kBq/kg body weight and not 50
†Best standard of care defined as a routine standard of care at each center, e.g., local external beam radiation therapy, corticosteroids, antiandrogens, estrogens (e.g., stilbestrol), estramustine, or ketoconazole.
Parker C, et al. *N Engl J Med.* 2013;369(3):213–223.

Xofigo Significantly Extends Overall Survival for 3.6 mo



Radium-223 in combination with ADT significantly extends OS in patients with mCRPC without visceral metastases.

ADT Androgen Deprivation Therapy; **CI,** confidence interval; **HR,** hazard ratio; **OS,** overall survival.
SOURCE: Parker C, et al. *N Engl J Med.* 2013;369(3):213–223.

Xofigo Significantly Improved All Secondary Efficacy Endpoints

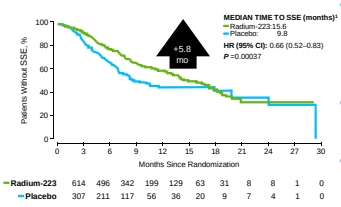
The significant improvement in all main secondary efficacy endpoints provided support for the benefit of radium-223 (+ BSoC) over placebo (+ BSoC).

SECONDARY EFFICACY ENDPOINTS	RADIUM-223 (n=614)	PLACEBO (n=307)	HR (95% CI)	*P* VALUE
Median time to first SSE (months)	15.6	9.8	0.66 (0.52-0.83)	<0.001
Median time to total ALP progression (months)	7.4	3.8	0.17 (0.13-0.22)	<0.001
Median time to PSA progression (months)	3.6	3.4	0.64 (0.54-0.77)	<0.001
Total ALP response (≥30% reduction), n (%)[a]	233/497 (47)	7/211 (3)	—	<0.001
Total ALP normalization, n (%)[a,b]	109/321 (34)	2/140 (1)	—	<0.001

NUMBER OF INJECTIONS RECIEVED	RADIUM-223 (n=614)	PLACEBO (n=307)
Patients receiving all 6 treatments, n (%)	387 (63)	145 (47)
Median	6.0	5.0

a. Number of patients without missing values.
b. In patients who had elevated total ALP at baseline.
ALP, alkaline phosphatase; **BSoC,** best standard of care; **CI,** confidence interval; **ITT,** intention-to-treat; **PSA,** prostate-specific antigen; **SSE,** symptomatic skeletal event.
Parker C, et al. *N Engl J Med.* 2013;369(3):213–223.

Xofigo Significantly Prolonged Time to First SSE



- Radium-223 reduced the overall risk of SSEs (median time to first SSE) compared to placebo regardless of baseline stratification factors:[2]
  - Prior docetaxel use (yes/no);
  - Baseline ALP (<220 U/L vs ≥220 U/L)
  - Bisphosphonate use at study entry (yes/no)] compared to placebo
- Radium-223 led to a longer SSE-free survival vs placebo*
  - (9.0 vs 6.4 months; HR=0.69 [95% CI: 0.57-0.82][2]
- Radium-223 significantly reduced the risk of clinically relevant endpoints, such as use of EBRT (HR=0.67; P=0.00117) or spinal cord compression (HR=0.52; P=0.03)[2]

Radium-223 lowers the risk of SSEs associated with skeletal disease progression in patients with mCRPC.

*Subjects who did not experience an event were censored at the last disease assessment date.
CI, confidence interval; **HR,** hazard ratio; **SSE,** symptomatic skeletal event.**EBRT** External Beam Radiation Therapy
1. Parker C, et al. *N Engl J Med.* 2013;369(3):213–223. **2.** Sartor O, et al. *Lancet Oncol.* 2014;15(7):738–746

ALSYMPCA: Safety Profiles Were Similar Between the Radium-223 and Placebo Arms

- The ALSYMPCA safety population included 901 patients (600 in the radium-223 group and 301 in the placebo group)
- There were few grade 3 AEs and grade 4 AEs were very low, also comparable to placebo.

NUMBER OF PATIENTS WITH AEs OCCURRING IN ≥5% OF PATIENTS IN EITHER TREATMENT GROUP

	RADIUM-223 (n=600)				PLACEBO (n=301)			
EVENT	ALL GRADES, n (%)	GRADE 3, n (%)	GRADE 4, n (%)	GRADE 5,[a] n (%)	ALL GRADES, n (%)	GRADE 3, n (%)	GRADE 4, n (%)	GRADE 5,[a] n (%)
Hematologic AEs								
Anemia	187 (31)	65 (11)	11(2)	0	92 (31)	37 (12)	2 (1)	1 (<1)
Thrombocytopenia	69 (12)	20 (3)	18 (3)	1 (<1)	17 (6)	5 (2)	1 (<1)	0
Neutropenia	30 (5)	9 (2)	4 (1)	0	3 (1)	2 (1)	0	0
Nonhematologic AEs								
Constipation	108 (18)	6 (1)	0	0	64 (21)	4 (1)	0	0
Diarrhea	151 (25)	9 (2)	0	0	45 (15)	5 (2)	0	0
Nausea	213 (36)	10 (2)	0	0	104 (35)	5 (2)	0	0
Vomiting	111 (19)	10 (2)	0	0	41 (14)	7 (2)	0	0
Asthenia	35 (6)	5 (1)	0	0	18 (6)	4 (1)	0	0
Fatigue	154 (26)	21 (4)	3 (1)	0	77 (26)	16 (5)	2 (1)	0
General physical health deterioration	27 (5)	9 (2)	2 (<1)	5 (1)	21 (7)	8 (3)	2 (1)	2 (1)
Peripheral edema	76 (13)	10 (2)	0	0	30 (10)	3 (1)	1 (<1)	0
Pyrexia	38 (6)	3 (1)	0	0	19 (6)	3 (1)	0	0
Pneumonia	18 (3)	9 (2)	0	4 (1)	16 (5)	5 (2)	2 (1)	0

a. Only 1 grade 5 hematologic AE was considered possibly related to study drug: thrombocytopenia in 1 patient in the radium-223 group. **AE,** adverse event.
Parker C, et al. *N Engl J Med.* 2013;369(3):213–223.

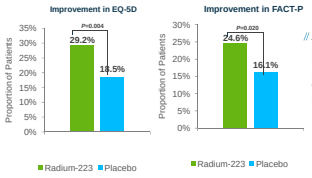
Low Incidence of Grade 3 or 4 Hematologic AEs, Regardless of Prior Docetaxel Use (Safety Population)

- Overall, there was a low incidence of grade 3 or 4 myelosuppression in both docetaxel subgroups.
  - Patients with prior docetaxel use had a higher incidence of grade 3 or 4 thrombocytopenia with radium-223 versus placebo (9% vs 3%, respectively)
  - Incidences of grade 3 or 4 anemia and neutropenia were similar between radium-223 and placebo treatment groups within each docetaxel subgroup

	PREVIOUS DOCETAXEL USE		NO PREVIOUS DOCETAXEL USE	
PATIENTS WITH GRADE 3 or 4 HEMATOLOGIC AEs*, n (%)	RADIUM-223 (n=347)	PLACEBO (n=171)	RADIUM-223 (n=253)	PLACEBO (n=130)
Anemia	50 (14)	24 (14)	27 (11)	15 (12)
Leukopenia	5 (1)	1 (1)	3 (1)	0
Neutropenia	11 (3)	1 (1)	2 (1)	1 (1)
Thrombocytopenia	31 (9)	5 (3)	7 (3)	1 (1)

AEs, adverse events.
*Occurring in at least 5% of patients in either treatment group.
SOURCE: Hoskin P, et al. *Lancet Oncol.* 2014;15(12):1397–406.

Quality of Life Outcomes with Radium-223



- A significantly higher percentage of patients receiving radium-223 had improved EQ-5D utility scores and a meaningful improvement in FACT-P total score on treatment versus placebo
  - EQ-5D: 29.2% vs 18.5%, respectively; *P*=0.004; OR=1.82 [95% CI 1.21-2.74]
  - FACT-P: 24.6% vs 16.1%, respectively; *P*=0.020; OR=1.70 [95% CI 1.08-2.65]

In ALSYMPCA, improved survival outcomes with radium-223 was accompanied by significant QoL benefits, including both a higher percentage of patients with meaningful QoL improvement and a slower decline in QoL over time in patients with mCRPC.

EQ-5D, EuroQol 5D; **FACT-P,** functional assessment of cancer therapy-prostate, **mCRPC,** metastatic castration-resistant prostate cancer.
Nilsson S, et al. *Ann Oncol* 2016;27:868–874.

健保給付規定: Radium-223 (Xofigo)

限用於治療去勢抗性攝護腺癌**(castration resistant prostate cancer)** 病患，其合併有症狀的骨轉移且尚未有臟器轉移者，且病人須符合下列三項條件：

1. 患者須合併有症狀之骨轉移且骨轉移 ≧2 處
2. 每位患者最高使用六個療程
3. 須經事前審查核准後使用，申請時需檢附：
   (1) 用藥紀錄 證明為有症狀的骨轉移、需常規使用止痛藥物
   (2) 三個月內影像報告證明骨轉移 ≧2 處
   (3) 三個月內影像報告證明無臟器轉移
4. 不得合併使用 abiraterone、enzalutamide 及其他治療因惡性腫瘤伴隨骨骼事件之藥品， 如denosumab 、 bisphosphonates等。

3 個月內
2 處以上骨轉移
1 種常規止痛藥
0 處臟器轉移

Conclusions

- Radium-223 delivers a meaningful triple benefit in patients with mCRPC and bone metastases by significantly extending OS and protecting patients' QoL, with a safety profile similar to that of placebo
- In ALSYMPCA, radium-223 significantly prolonged overall survival in patients who had mCRPC and bone metastases, with a 30% reduction in the risk of death (HR=0.70), as compared with placebo
  - The median OS was longer by 3.6 months among patients who received radium-223 compared with placebo
- All secondary efficacy endpoints were significant and favored radium-223, including the clinically defined end point of the time to the first SSE
- The overall incidence of AEs (all grade, grade 3/4, SAEs) was consistently lower in the radium-223 arm than in the placebo group
  - The number of patients who discontinued the study drug because of AEs was also lower in the radium-223 group
  - No clinically meaningful differences in the frequency of hematologic AEs were observed between the treatment groups

AE, adverse event; **HR**, hazard ratio; **mCRPC,** metastatic castration-resistant prostate cancer; **OS,** overall survival; **QoL**, quality of life; **SAE**, serious adverse event.

【Luncheon Symposium II】

黃玉儀醫師 簡介

一、個人資料：姓名、性別、出生年月日

姓名(中文)	黃玉儀	性別	女	出生日期	公元 1976 年 1 月 8 日

二、學歷（自最高或最近學歷往下填寫）

畢業學校	所在地	主修學門	學位	起迄年月
陽明大學	台北	醫學系	學士	1994/9-2001/6

三、住院/專研醫師訓練(由最近往下填寫)

醫院名稱	所在地	住院/專研醫師	起迄年月
和信醫院	台北	住院醫師	2001/8-2005/7
Washington university, Mallinckrodt institute of radiology	St. Louis, Missouri	Visiting fellow	2005/10-2005/12

四、現職及經歷（自最近往下填寫）

服務機關	服務部門	職稱	起迄年月
和信醫院	核子醫學科	主治醫師	2005/8-迄今
和信醫院	核子醫學科	副主任	2012/04-2016/01
和信醫院	核子醫學科	主任	2016/02-迄今
國立陽明大學	醫學系	兼任講師	2016/08-

五、專長：核醫診斷，核醫治療，核醫腫瘤學。

六、學會會員(或附件)中華民國核醫學學會 (編號 A199)

【Luncheon Symposium II】

Clinical Experience Sharing of Ra-223 Therapy in mCRPC Treatment

黃玉儀醫師
和信醫院核子醫學科

Abstract

Ra-223 therapy is the first alpha particle therapy used in cancer therapy. It had been proved to have benefit in overall survival in metastatic castration refractory prostate cancer. The aim of talk is to introduce the rationale of radionuclide therapy in skeletal metastases, the mechanism of Ra-223 alpha therapy, and to share the clinical experience of a cancer center in Taiwan.

Ra-223(Xofigo) was approved by TFDA in June 2015, and was reimbursed in March 2019 by national health insurance of Taiwan, to be used in symptomatic metastatic castration refractory prostate cancer patients with bone metastasis at least for two sites, and without other visceral organ metastasis. We have treated for more than 25 patients since 2015, and will share the result of treatment, and discuss some practical issues about this treatment.

【Workshop I】

Pros and Cons of Laser Circumcision, is it Really Beneficial?

彭元宏醫師
楊梅天成醫院泌尿科

Circumcision is a common procedure in urological practice. The conventional circumcision method is performed via electrocoagulation and suture. Recently, laser machine is widely used for circumcision, including CO2 laser, Nd-Yag laser and Homium laser. However, there is only a few studies to elaborate the pros and cons of laser circumcision. In this section, we will sort out recent studies of laser circumcision and conventional circumcision about the operative time, the complications, the cost-effectiveness and basic sciences of penile nerve tolerance.

【Workshop I】

Semi-Live Surgery: Surgical Techniques Sharing for Circumcision Stapler Device

Hong Chiang Chang
張宏江醫師
台大醫院泌尿部

In this session of case sharing, we will demonstrate our experience of stapler circumcision. The Circumcision Stapler is a new device used to performed circumcision. This device has some advantages, such as shorter operative time, lack of electrocautery, minimal tissue injury, minimal pain and low blood loss. The main disadvantage of this device is the need of staple removal. Although the learning curve of circumcision device is shorter than classic circumcision, operator still need carefully to choose the suitable size of device and avoid the injury to the frenulum and glans.

【Workshop II】

Nerve-Sparing Techniques and Results in Pelvic Surgery

楊晨洸醫師
台中榮總醫院泌尿科

Erectile dysfunction (ED) is a frequent complication in patients treated by radical prostatectomy and radical cystectomy (RC), even through the gynecological procedure and lower anterior resection for rectal cancer. Walsh and Donker suggested that ED was caused by damage to the neurovascular bundles (NVB), which supply the corpora cavernosa. Surgical procedure was modified on the basis of this information to avoid injury to the cavernosal nerves and thus preserve erectile function in patients undergoing pelvic operation. The tremendous variance in the results presented in the literature regarding the preservation of erectile function could be explained by differences in skills, surgical techniques, and patient-selection criteria among studies .The risk of functional morbidity following this procedure is considerable, however, and can delay patient acceptance of pelvic surgery , which can adversely affect the long-term prognosis. For example, some investigators have advocated prostate-sparing cystectomy to improve postoperative continence and potency rates, and this may improve timely patient acceptance of cystectomy.However, valid concerns regarding the oncologic efficacy of this procedure still predominate, and radical prostatectomy with neuromuscular bundles preservation was also described many method and NVB preserved grading.

We present the edited video to demonstrate interfascia and intrafascial dissection techinique in prostatectomy and cystectomy. Potency rates is slightly higher in the intrafascia NVB preservation group, but we still concern the trifecta results during pelvic surgery.

【Workshop II】

Current Penile-rehabilitation Strategies: Clinical Evidence

張博誌醫師
林口長庚醫院泌尿科

Several options exist for the treatment of localized prostate cancer, including surgery, radiation therapy (RT), and active surveillance. Despite advances in surgical techniques, anatomic understanding, and pharmacology, post-prostatectomy erectile dysfunction (ED) remains a common problem, with very high incidence and varies between 14% and 90%.

The concept of penile rehabilitation after radical prostatectomy (RP)is based on the understanding of the mechanisms that lead to ED. It is believed that neuropraxia, ischemic and hypoxic insults, fibrotic remodeling and apoptosis of erectile cells contribute to ED even after meticulous dissection in an attempt to preserve the neurovascular bundle during prostatectomy. Lack of erections associated with neuropraxia following RP can itself set up a cascade of harmful processes that negatively affect erectile tissues. Based on the understanding of these mechanisms, multiple studies have been focused on evaluating ways to increase oxygenation of the cavernosal bodies, decrease tissue fibrosis and apoptosis until the cavernosal nerves recover from neuropraxia with the return of spontaneous un-assisted tumescence. The daily phosphodiesterase 5 inhibitors (PDE5i), unfortunately, does not improve the recovery of spontaneous erections based on self-reported outcomes or Rigiscan study. The meta-analysis also shows that non-oral rehabilitation modalities, such as intracavernosal injection, intraurethral alprostadil and vacuum erection devices (VED) can increase erectile function while the treatment is being used. More striking benefit for rehabilitation to preserve penile size is observed from VED clinical studies with multiple randomized trials and case series. The mechanism of the tissue and size preservation are explained though animal studies that shows daily VED therapy has anti-hypoxic, anti-apoptotic and anti-fibrotic effects through increasing cavernous blood oxygen.

Recommendations from the fourth International Consultation for Sexual Medicine suggest discussing erectile dysfunction and penile rehabilitation options with men prior to and after radical prostatectomy. The panel determined that inadequate data exist to recommend any specific rehabilitation regimen over another. Thus, a critical need exists for further research in the realm of post-prostatectomy penile rehabilitation to determine the most effective strategies. Although the controversy of penile rehabilitation will continue until better modalities become available, we

believe that any rehabilitation is undeniably better than no action at all based on the science and clinical evidence. It seems to critical to inform patients before or/and after RP that there is no standard treatment algorithm of penile rehabilitation but time is tissue.

【APSSM President Lecture】

The Comorbidity between Premature Ejaculation and Erectile Dysfunction

Bang-Ping Jiann
Kaohsiung Veterans General Hospital

Erectile dysfunction (ED) and premature ejaculation (PE) are considered two distinct diseases with differences in definition, evaluation, risk factors and treatment. ED was defined as a man's difficulty in penetration or maintaining penile erection with classical risk factors of diabetes mellitus, hypertension, and dyslipidemia and managed with phosphodeisterase-V inhibitors. PE is characterized by a perceived lacking control over ejaculation, personal distress and a short latency time before ejaculation. In contrast to ED, the pathophysiology and risk factors for PE were far less investigated and delineated. PE is presumably caused by neurobiological, genetic, medical and psychological factors, but none of these etiologies have been confirmed in large-scale studies. ED was reported to be the single greatest risk factor for PE.

PE coexisted in 30.7% of men complaining of ED, possibly because of a vicious circle between PE and ED. A man with PE attempts to control ejaculation by reducing the level of excitation, which can lead to ED. By contrast, a man with ED attempts to achieve an erection by increasing the level of excitation, which can lead to PE. Because PE frequently coexists with ED, it is recommend to screen patients with PE for ED, and vice versa. A missing diagnosis of ED may result in PE treatment failure because the penis cannot maintain an erection until ejaculation. PE and ED often coexist and are associated with higher psychological distress than alone.

Their coexistence highlights the importance of screening for their co-occurrence and the need for combined therapy in clinical practice.

【Special Lecture】

Comprehensive Treatment of Premature Ejaculation

蔡維恭
馬偕紀念醫院泌尿科
TSAI, WEI-KUNG
Urology, Mackay Memorial Hospital

Premature ejaculation (PE) is a highly prevalent male sexual disorder that is largely an unmet therapeutic need. Patients with PE are characterized as having low IELT, lacking control over ejaculation and suffer from negative personal consequences as a result of the condition.

The present choices of PE treatment include Psychological/behavioral strategies and Pharmacotherapy. In lifelong PE, behavioral techniques are not recommended for first-line treatment. (EAU, 2018) They are time-intensive, require the support of a partner and can be difficult to perform.

Pharmacotherapy is the basis of treatment in lifelong PE. Dapoxetine (Priligy™) is the only on-demand pharmacological treatment approved for PE. In RCTs, dapoxetine, 30 mg or 60 mg one to two hours before intercourse, was effective from the first dose on IELT and increased ejaculatory control, decreased distress, and increased satisfaction. Dapoxetine has shown a similar efficacy profile in men with lifelong and acquired PE. Although Off-label chronic using SSRIs and clomipramine can delay ejaculation, Dapoxetine 30 mg treatment has less side effects than other SSRI and its' on demand usage makes it more prominent than the other chronic SSRI. (Balci, 2019)

There are still no strong evidence about which factors influencing the efficacy of dapoxetine for the treatment of (PE). Peng reported those patients with less severe PE based on PEDT and higher NITBE (Number of intravaginal thrusts before ejaculation) seemed to have better efficacy with dapoxetine. (Peng, 2020)

The use of local anesthetics to delay ejaculation is the oldest form of pharmacological therapy for PE. TEMPE(Fortacin™) is a eutectic-like mixture of lidocaine 150 mg/mL and prilocaine 50 mg/Ml approved for use in the European Union and launched in the United Kingdom in November 2016. The metered-dose spray can delay the ejaculatory latency time without adversely affecting the sensation of ejaculation and orgasmic pleasure. (Porst, 2017)

ED and PE are not distinctly separate entities and should be not categorized in rigid diagnostic figures, but should be seen in a dimensional prospective. A RCT study reported that sildenafil increased confidence, the perception of ejaculatory control and overall sexual satisfaction, reduced anxiety. The dapoxetine/PDE5 inhibitors combination therapy significantly improves the IELT values and patient reported outcome measures of PE patients who also suffer from ED with tolerated adverse effects. A new study of combo pill (dapoxetine 30mg /sildenafil 50mg) revealed the geometric mean IELT and PEP index score of the patients significantly increased at the end of the 4-weektreatment period. Non-serious adverse events occurred in 10 patients (18.87%) and 4 (7.55%) of these patients dropped out of the treatment. (Tuken, 2019)

As the effects of PE on a patient and their partners is multifactorial, exclusive treatment may fail to address certain patient needs. (Gillman, 2019) A holistic patient management plan composed of pharmacological management, psychological support and psychosexual behavioral therapy is likely to produce the best outcomes for patients.

【感染課程】

講師簡介

盧柏樑 (Po-Liang Lu, MD)

Education:

M.D. Sep. 1985 ~ June 1992	Kaohsiung Medical University School of Medicine PhD.
Sep. 2005 ~ Jan. 2011	Kaohsiung Medical University, Institute of Medical Research

Current academic and professional membership:

1. Member of Society of Internal Medicine Physician, Republic of China
2. Member of Infectious Disease Society, Republic of China
3. Member of Nosocomial Infection Control Society, Republic of China
4. Member of Taiwan Society of Laboratory Medicine
5. Member of American Society of Microbiology

Current Position:

1. 高雄醫學大學醫學系教授
2. 高雄醫學大學學士後醫學系主任
3. 高雄醫學大學附設中和紀念醫院檢驗醫學部主任
4. 高雄醫學大學附設中和紀念醫院感染內科主任

Experience:

1. 高雄醫學大學附設中和紀念醫院內科住院醫師
2. 高雄醫學大學附設中和紀念醫院內科主治醫師
3. 臺大醫院感染內科研究員
4. 國家衛生研究院感染症臨床及研究訓練計畫學員
5. 高雄醫學大學附設中和紀念醫院檢驗部細菌室主任
6. 高雄醫學大學附設中和紀念醫院檢驗部微生物室主任
7. 高雄市結核病防治委員會委員

【感染課程】

Update of PrEP in HIV Infection

盧柏樑醫師
高雄醫學大學感染科

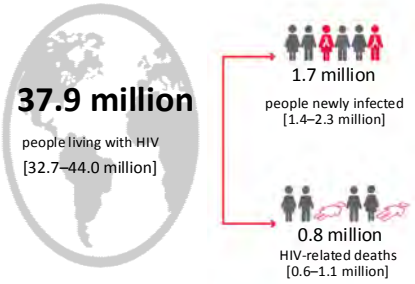
Update of PrEP in HIV Infection

高雄醫學大學感染科主任 盧柏樑醫師

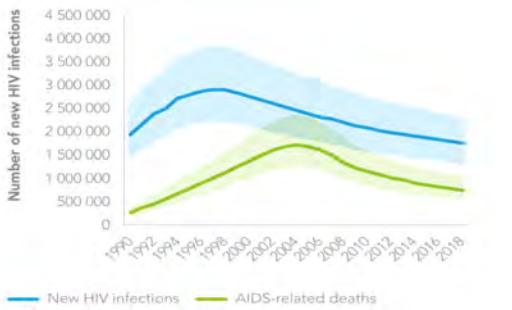
Outline

- HIV疫情現況
- HIV防治新策略- PrEP
- PrEP介紹-效果、吃法、適合族群
- 總結

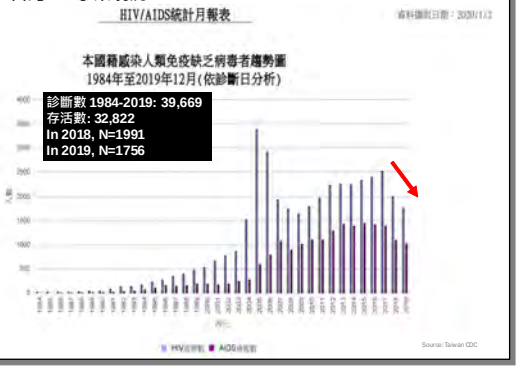
全球HIV疫情 (2018)



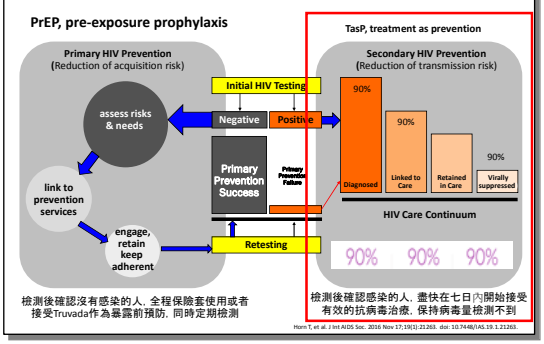
全球新HIV個案數及死亡數趨勢, 1990-2018



台灣HIV感染現況



如何終結愛滋:
全面篩檢、預防、儘速治療和持續維持有效的治療

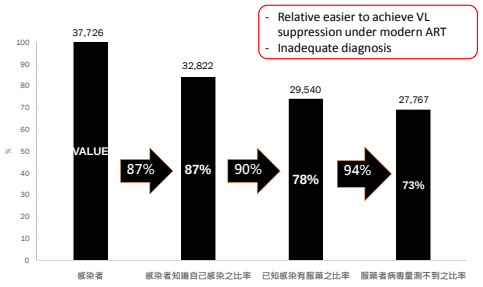


UNAIDS 90-90-90 TARGET

In 2014, UNAIDS set out new targets for reducing HIV by 2020.

台灣: 90-90-90 現況(2019)

- Relative easier to achieve VL suppression under modern ART
- Inadequate diagnosis



當HIV被抑制到檢測不到

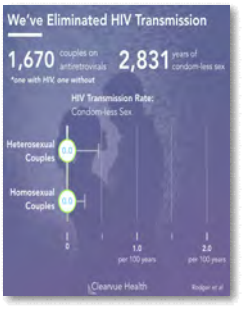
即不會透過性行為傳染！

International AIDS Society

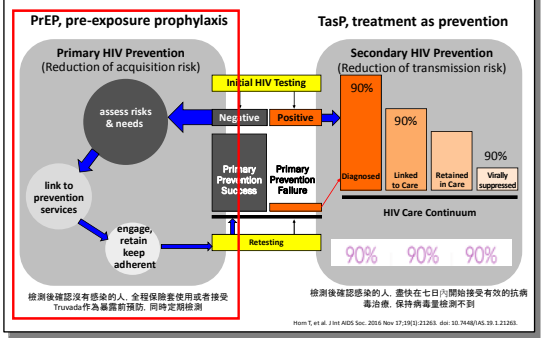
Evidence of U=U:
PARTNER 1 & 2 study

- PARTNER 1
  340對MSM及548對異性戀
  58,000次無套性行為
- PARTNER 2
  782對MSM
  76,088次無套性行為

Zero Transmission !



如何終結愛滋:
全面篩檢、預防、儘速治療和持續維持有效的治療



Horn T, et al. J Int AIDS Soc. 2016 Nov 17;19(1):21263. doi: 10.7448/IAS.19.1.21263.

經臨床證實的HIV預防策略 ：

- HIV 篩檢
- 使用保險套
- 衛生教育及風險諮詢
- 清潔針具交換
- 性傳染病篩檢及治療
- 男性包皮環切術
- 抗反轉錄病毒治療(TasP)
- 暴露前預防性投藥
  Post-exposure prophylaxis (PEP)
- 暴露後預防性投藥
  Pre-exposure prophylaxis (PrEP)

What is PrEP ?

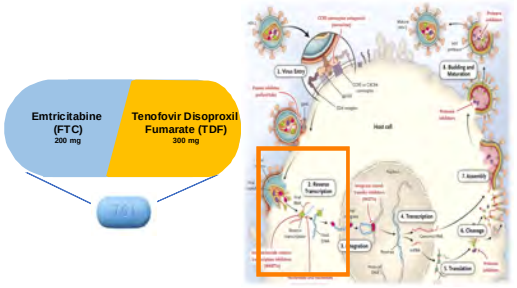
愛滋病毒暴露前預防性投藥

(Pre-Exposure Prophylaxis)

13

Truvada FOR PrEP

Two medications, TDF and FTC, are in one tablet



若維持穩定用藥
PrEP可降低HIV感染風險

90-100%

among cisgender MSM,
heterosexual men & women,
and transgender women.

(**84%** among people who inject drugs)

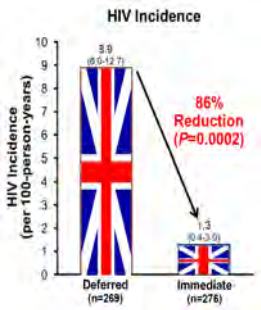
Grant RM, et al. *NEJM*. Dec 2010;363(27):2587-99
Baeten JM, et al. *NEJM*. Aug 2012;367(5):399-410
Grant RM, et al. *Lancet Inf Dis*. Sep 2014;14(9):820-9
Martin M, et al. *AIDS*. Apr 2015;29(7):819-24

暴露前預防性投藥: 全球使用現況

PrEP Initiations by Country, October 2019

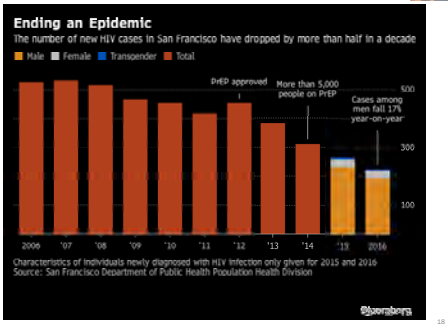
PrEP於真實世界的預防成效: PROUD Study

- Study of men who have sex with men at Sexually Transmitted Infection Clinics in London. Randomization:
  - Group 1: Started daily PrEP immediately
  - Group 2: Deferred PrEP for 1 year
- Significantly fewer new HIV infections with immediate versus deferred PrEP
  - (3 versus 19 cases)
  - 86% reduction (*P*=0.0002)
  - Number needed to treat to prevent 1 infection: 13
- PEP used by 31% in deferred arm
- Preliminary analysis found that risk behaviors were similar between the 2 arms



McCormack S, et al. 22nd CROI. Seattle, 2015. Abstract 22LB.

Real world- 舊金山經驗



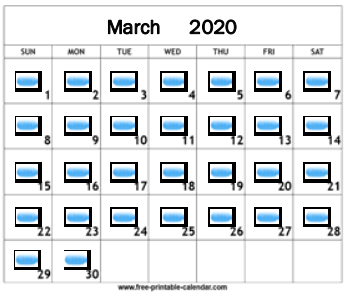
https://www.bloomberg.com/news/articles/2017-08-17/how-a-blue-pill-is-stopping-hiv-from-sydney-to-san-francisco

PrEP兩種吃法：

1. Daily 每天吃
2. On-Demand 依需求吃(限男性)

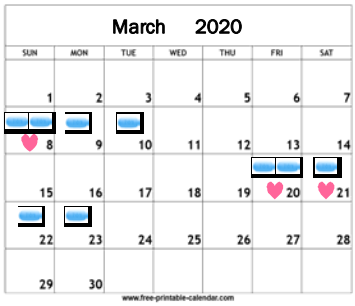
1. Daily PrEP

- 服用方式: 每日服用一錠



2. On-demand PrEP(限男性)

- 服用方式: 依事件使用，" 前2後1+1"



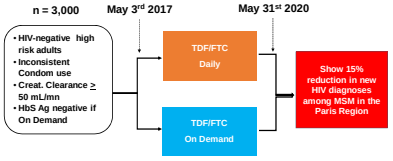
Daily or On-demand

怎麼吃比較好?

Prévenir ANRS Study Design

http://prevenir.anrs.fr/

Open-Label Prospective Cohort Study in the Paris Region



- **Participants opted for either Daily or On Demand PrEP and could switch regimens**
- Follow-up every 3 months with 4th Gen ELISA HIV test and plasma creatinine
- STI screening at physicians' discretion (Guidelines recommend every 3 months in MSM)
- Condoms, gels, risk reduction and adherence counseling, Q on sexual behavior

Prévenir ANRS Baseline Characteristics

Characteristics (Median, IQR) or (n, %)	Daily n = 724 (45.4%)	On Demand n= 870 (54.6%)	P-value
Age (years)	36 (30-44)	36 (30-44)	0.10
MSM	708 (98)	865 (99.4)	
Heterosexual men or women	7 (0.1)	5 (0.6)	<.01
Transgender	8 (1.1)	0 (0)	
No regular sex partner	380 (53)	437 (51)	0.41
History of PrEP use	408 (56.5)	515 (59.2)	0.28
Use of Chemsex*	128 (17.7)	124 (14.3)	0.06
No. condomless sex acts in prior 4 weeks	**3** (1-8)	**2** (0-4)	<.001
No. sexual partners in prior 3 months	**15** (7-25)	**10** (5-15)	<.001

* at last sexual intercourse : cocaine, GHB, MDMA, mephedrone..

Prévenir ANRS

HIV Incidence (mITT Analysis)

Treatment	Follow-Up Pts-years	HIV Incidence per 100 Pts-years (95% CI)
TDF/FTC (Daily)	443	**0** (0-0.8)
TDF/FTC (On Demand)	506	**0** (0-0.7)

經過平均7個月的追蹤，Daily及On-Demand組皆無人感染HIV

Mean Follow-up in this Open-Label Cohort: 7 months (SD: 4)

Incidence of study discontinuation:
3.3/100 PY including 1.5/100 PY who discontinued PrEP

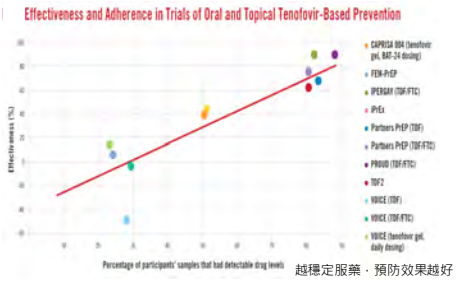
85 HIV-infections averted*

* assuming an incidence of 9.17/100 PY as observed in the ANRS Ipergay study in Paris

ANRS

無論Daily or On-demand
PrEP有效的關鍵是:

臨床研究中藥物濃度與PrEP 保護力比較



越穩定服藥，預防效果越好

AIAC Pre-Exposure Prophylaxis (PrEP) by the Numbers. August 2016

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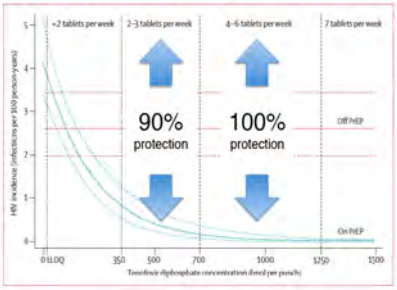
iPrEx OLE confirmed prior estimates

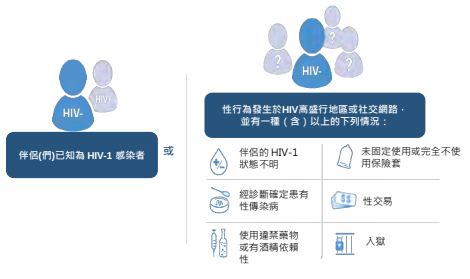


Grant RM, et al. Lancet Inf Dis. Sep 2014;14(9):820-9

誰需要**PrEP?**

找出適合使用 **TRUVADA** 進行 **PrEP** 的族群

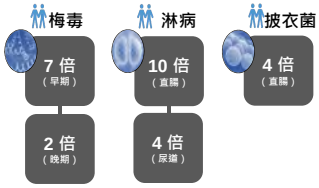
- 經由性行為感染 HIV-1 風險較高的族群可能包括：



TRUVADA Prescribing Information. Gilead Sciences, Inc. 2017.

診斷有性傳染病之男男性行為者，感染 HIV 的風險增加

- 自 2006 年 1 月觀察至 2013 年 6 月，從事男男性行為的族群當中，相較於未感染性傳染病者，曾感染性傳染病者診斷出 HIV 感染的機率[a,b]



男男性行為者診斷出任一性傳染病後，發生 HIV 感染的風險將增加 4 倍。

a. 每 100 人年; b. Study conducted by the Washington State Department of Health and the University of Washington in Washington State. Katz DA, et al. Sex Transm Dis. 2016;43:249–254.

避免漏網之魚：積極找出需預防 HIV 感染的族群

- 辨識HIV感染風險可能較高的個案[1]：
  - 針對個案特性，判斷是否應詢問其性生活史
  - 詢問個案的性生活史，發現潛在之 HIV 感染風險因子
  - 執行個人化的 HIV / 性傳染病預防計畫

建議 15 到 65 歲之族群均應接受 HIV 篩檢[2]。

1. Centers for Disease Control and Prevention. Pre-exposure prophylaxis for the prevention of HIV infection in the United States–2014: a clinical practice guideline. http://www.cdc.gov/hiv/pdf/guidelines/PrEPguidelines2014.pdf. Published 2014. Accessed March 2018; 2. US Preventive Services Task Force. Final Update Summary: Human Immunodeficiency Virus (HIV) Infection: Screening. https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/human-immunodeficiency-virus-hiv-infection-screening. Published April 2013. Accessed March 2018.

TRUVADA for PrEP：開始 PrEP 前的注意事項與 HIV-1 感染的監測

使用 TRUVADA 進行 PrEP 前，應確認 HIV-1 狀態

- 即將開始使用 TRUVADA 進行 PrEP 前，需確認 HIV-1 為陰性狀態。
- 如果出現與急性病毒感染相符合的臨床的徵兆或症狀（如發燒、疲倦、肌痛、皮疹等），且懷疑最近（< 1 個月）曾暴露於病毒風險中，則應將開始進行 PrEP 的時間延後至少 1 個月以上，並再度確認 HIV-1是否為陰性狀態。

如果懷疑感染 HIV-1，應停止 PrEP

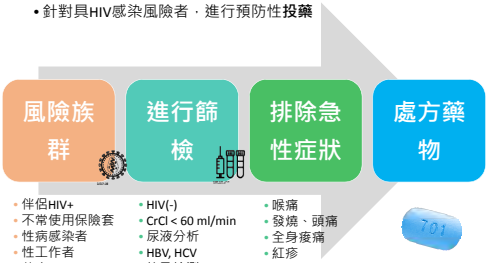
- 在使用 TRUVADA 進行 PrEP 期間，應至少每 3 個月進行一次 HIV-1 篩檢。
- 如果在發生潛在暴露事件後出現與急性 HIV-1 感染相符合的症狀，應停止 PrEP，直到確認HIV-1 為陰性狀態。

未確診之早期 HIV-1 感染者，若僅使用 TRUVADA 可能會出現 HIV-1 抗藥性，因為就 HIV-1 的治療而言，單獨使用 TRUVADA 並不足以構成完整的治療方案。

TRUVADA Prescribing Information. Gilead Sciences, Inc. 2017.

PrEP投藥流程

- 針對具HIV感染風險者，進行預防性**投藥**



- 伴侶HIV+
- 不常使用保險套
- 性病感染者
- 性工作者
- 藥癮

- HIV(-)
- CrCl < 60 ml/min
- 尿液分析
- HBV, HCV
- 懷孕檢測

- 喉痛
- 發燒、頭痛
- 全身痠痛
- 紅疹
- 淋巴結腫大

2018 臺灣華霞前口服預防性投藥使用指引第二版, Taiwan AIDS Society

應將TRUVADA for PrEP視為完整預防策略的一部份

- 保持安全性行為習慣，包括固定並正確地使用保險套，並鼓勵未感染者減少高風險性行為
- 瞭解自己和伴侶的 HIV-1 狀態
- 定期檢查是否感染其他會助長 HIV-1 傳染的性傳染病（如梅毒與淋病）
- 應囑咐未感染者嚴格遵守建議的 TRUVADA 投藥時程

- **TRUVADA 並不一定能100%預防 HIV-1 感染**
- **TRUVADA 降低感染 HIV-1 之風險的有效性和服藥順從性密切相關**

TRUVADA Prescribing Information. Gilead Sciences, Inc. 2017.

總結

- TDF/FTC for PrEP可作為良好HIV**主動**預防工具
- 無論Daily 或 On-demand使用皆有效，關鍵是按時服藥
- 重複性病感染者為HIV高風險族群，建議進行篩檢並提供PrEP資訊作為預防選項
- 開立PrEP前須確認HIV陰性方可開立

【兩性課程】

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同志暨性少數心理健康

【兩性課程】

醫療中的多元性別敏感度

徐志雲 醫師
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摘要：

近年來多元性別議題在社會上及醫學領域中漸受重視，現代醫學皆已證實「非異性戀」(non-heterosexuality)之性傾向、性行為、以及伴侶關係，並非疾病，而是人類發展多樣性之正常展現。2015 年 5 月 NEJM 刊出〈支持同性婚姻〉(In Support of Same-Sex Marriage)，說明從健康促進的角度來看，婚姻關乎穩定而長期的關係，同性婚姻合法化能夠降低疾病所帶來的風險、並促進個人與家庭的健康。本場演講將簡介不同的性傾向及性別認同，並藉由臨床實例說明如何增進對於多元性別的敏感度，進一步提升同志友善的醫療實作。

E-1
男性學論文獎臨床組第一名
財團法人鳳凰泌尿科學文教基金會

網路調查亞洲男性服用改善勃起功能障礙藥物行房時間計畫
Degree of Planning of Sexual Intercourse among Asian Men from China, Japan and Taiwan Taking Medication for Erectile Dysfunction: Findings of an Observational, Cross-Sectional Survey

Bang-Ping Jiann, MD[1], Koichi Nakajima MD, PhD[2], Sonali Dighe,DNB, MSc[3], Chad D. Harshman Smith, MSE, MBA[4], and [4]Tarek A Hassan, MD, MSc[3]

Introduction: Management of erectile dysfunction (ED) is beset with assumptions around spontaneity of sexual intercourse, requiring candor between the physician and patient if appropriate treatment is to be implemented.

Aim: To evaluate the degree to which men who take ED medications plan for and have sex.

Methods: Men from China, Japan and Taiwan aged 40 to 70 years who had taken ED medications within the past 3 months were invited to participate anonymously in an online, self-administered survey that enquired about frequency and advance planning of sex, time between taking ED medication and intercourse, and treatment satisfaction. Data were analyzed using descriptive statistics.

Main Outcome Measures: Frequency of planning of sexual intercourse, planning and ED medication dosing interval, and frequency of ED medication use.

Results: Data from 604 respondents (mean age 50.8 years) from China (n = 254), Japan (n = 250) and Taiwan (n = 100) were collected. Men used ED medications a median of ≤ 4 times per month in all three territories. 76% who used ED medication during the past 3 months planned for sex on specific occasions, with 59% and 52% agreeing that they plan for sex on specific days of the week and times of the day, respectively. Most commonly, men planned for sex up to several hours to a day beforehand, with 94% taking ED medication within 4 hours of sex. Satisfaction with ED medication was generally high and related to erection rigidity, speed of onset and safety.

Conclusion: Knowledge of the degree to which individuals with ED plan for sex may have important implications for the appropriate prescription of ED medication. The high degree of planning around sexual activities exhibited by men taking ED medication suggests there is a need for appropriate counseling to ensure that treatment is aligned with patient behavior.

Sexual Medicine 2019;7:54-60

E-2
男性學論文獎臨床組第二名
財團法人鳳凰泌尿科學文教基金會

The Role of SLC9A3 in Taiwanese Patients with Congenital Bilateral Absence of Vas Deferens (CBAVD)

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[3]School of Medicine, Fu Jen Catholic University, New Taipei City, Taiwan.

Congenital bilateral absence of vas deferens (CBAVD) is a special entity in obstructive azoospermia. Mutations in the cystic fibrosis transmembrane conductance regulator (CFTR) gene are involved in Taiwanese CBAVD but most heterozygous 5T variant. The solute carrier family 9 isoform 3 (SLC9A3) is the Na+/H+ exchanger, which interacts with CFTR and regulates the Ca2+ homeostasis. Loss of SLC9A3 decreases CFTR protein and causes obstructive azoospermia in mice. It also causes mal-reabsorption by the efferent tubules, which leads to the obstructive phenomenon and eventually results in testicular atrophy. In 6-month old SLC9A3 deficiency mice, the atrophy of their vas deferens and seminal vesicles become more prominent. Decreases of CFTR expression in the reproductive organ in the SLC9A3 deficient (-/-) mice prove the interaction between CFTR and SLC9A3 in the reproductive tract. Most of Taiwanese CBAVD have at least one variant of SLC9A3 deletion and CFTR IVS8-5T, which co-contribute to Taiwanese CBAVD. The report indicates SLC9A3 deficiency can reverse the pathological changes in the gastrointestinal tract of CF mice. Further research can explore the definite mechanism of SLC9A3 and its role interacting with CFTR in different organ systems, which can contribute to novel treatment for the patients with cystic fibrosis and CBAVD.

Journal of the Formosan Medical Association

E-3
男性學論文獎基礎組第一名

Dietary Modification is Associated with Normalization of Penile Hemodynamics in Rats Fed a High-fat Diet

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Background: Diet is associated with self-reported indices of sexual health. The mechanisms responsible for these changes remain poorly understood.

Aim: To investigate the hemodynamic and histological impact of dietary change in a rat model of hyperlipidemia-associated erectile dysfunction.

Methods: Forty 2-month old male Sprague-Dawley rats were divided into 4 groups. 10 rats were fed a diet of standard chow and served as negative controls (N group). The remaining 30 age-matched rats were divided at random into 3 groups: (i) high-fat diet for 5 months starting at age 5 months (H group); (ii) high-fat diet for 5 months starting at age 4 months followed by 1 month of standard chow (H+N1M group); and (iii) high-fat diet for 5 months starting at age 2 months followed by 3 months of standard chow (H+N3M group). All rats underwent erectile function testing and sacrifice at age 10 months.

Outcomes: Intracavernous pressure (ICP) and mean arterial pressure (MAP) were measured to evaluate erectile function. Blood sample were collected to measure serum testosterone and lipid levels, and penile tissue specimens were obtained for histological examination.

Results: Total body weight, low-density lipoprotein, and serum glucose were significantly higher in the H group compare with the N and H+N3M groups. Serum high-density lipoprotein level was significantly lower in the H group compared with the N and H+N3M groups. The mean ICP/MAP ratio was significantly lower in the H group compared with the N and H+N3M groups (0.33 ± 0.05 vs 0.79 ± 0.07 vs 0.73 ± 0.13; $p<0.05$ for both). Markers for intracorporal neuronal nitric oxide synthase and endothelial cells were more weakly expressed in the H group compared with the N and H+N3M groups. There was no significant difference in smooth muscle contents among the groups. Mean cavernosal oxidative stress and the apoptotic index were significantly higher in the H group compared with the N and H+N3M groups. No significant between-group differences were noted with respect to serum testosterone; the H group had significantly higher serum glucose and low density lipoprotein levels, effects that were partially mitigated in the H+N1M and H+N3M groups.

Clinical Translation: Administration of a healthy diet is associated with normalization of functional and histological penile defects associated with high-fat diet.

Strengths & Limitations: Metabolic changes were clearly linked to functional improvements in penile blood flow. Differences between rat and human lipoprotein metabolism are a limitation of this study.

Conclusion: Dietary changes may have positive effects on penile hemodynamics in a rat model of hyperlipidemia-associated erectile dysfunction.

The Journal of Sexual Medicine 2019;16:791-802

E-4
男性學論文獎基礎組第二名

SEPT14 Mutations and Teratozoospermia: Genetic Effects on Sperm Head Morphology and DNA Integrity

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The main objective of this study was to evaluate the potential genetic effects of *SEPT14* on male infertility through sequencing the *SEPT14* coding region. To address this research gap, 254 men with sperm abnormalities and 116 normozoospermic men were recruited, and the whole-coding regions of *SEPT14* were sequenced. Two heterozygous mutations, p.Ala123Thr (3/254 vs. 0/116) and p.Ile333Thr (3/254 vs. 0/116), were identified in these cases. A high percentage of defective sperm heads was found in sperm with mutated *SEPT14*. Both mutations are highly evolutionarily conserved among vertebrates. The results of a fine morphological and chromatin structural analysis indicated severely malformed sperm heads with abnormal chromatin packaging through transmission electron microscopy and Toluidine blue staining. Compared with controls, high DNA fragmentation was demonstrated in sperm from cases carrying *SEPT14* mutations using the comet assay. In addition, these two mutations in *SEPT14* affected its polymerization ability in vitro. These data revels that the two *SEPT14* missense mutations impaired sperm head morphology and induced DNA damage. Our study suggests that genetic variant of *SEPT14* is one of the effects for human sperm formation and male fertility.

Journal of Clinical Medicine 2019,8,1297; doi:10.3390/jcm8091297

E-5

江萬煊教授傑出研究論文獎

Hepatocyte Nuclear Factor-4α P2 Promoter Variants are Associated with the Risk of Metabolic Syndrome and Testosterone Deficiency in Aging Taiwanese Men

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Background: Hepatocyte nuclear factor-4α (HNF4A) can influence the risk of insulin resistance that is postulated to be an important link between metabolic syndrome (MetS) and testosterone deficiency (TD) in men.

Aim: To investigate the relationship between single-nucleotide polymorphisms (SNPs) of *HNF4A* and the risk of developing MetS and TD in a population of aging Taiwanese men.

Methods: A free health screening of men over 40 years of age was conducted in a medical center in Kaohsiung City, Taiwan. All participants underwent a physical examination, answered a questionnaire on demographics and medical history, completed the Androgen Deficiency in The Aging Male questionnaire to assess clinical symptoms of TD, and provided 20-mL whole blood samples for biochemical, hormonal, and genetic evaluation.

Main Outcome Measure: 3 common SNPs (rs11574736, rs1884613, and rs2144908) of *HNF4A* were selected and identified using a TaqMan 5′ allelic discrimination assay.

Results: 559 men were enrolled for this study (mean age, 55.8± 4.9 years). Prevalence of TD was significantly higher (P=.031) in subjects with MetS (16.8%) than those without MetS (10.1%). In SNP rs1884613 of *HNF4A*, subjects with the C allele carried a 1.31- and 1.50-times higher risk of developing MetS and TD, respectively, compared to those with the G allele, after adjusting for potential covariates. In addition, subjects with the CC genotype were exposed to a 1.91- and 2.20-times higher risk of developing MetS and TD, respectively, compared to those with the GG genotype.

Clinical Implications: Our findings may point to the importance of the role played by insulin resistance in the link between MetS and TD.

Strength & Limitations: Our current work is the first report with adequate sample size to evaluate the role of genetic variants of *HNF4A* on the risk of both MetS and TD in men. The limitations included subjects enrolled from a free health screening and single measurement of serum testosterone levels.

Conclusion: The rs1884613 SNP marker of *HNF4A* is significantly associated with an increased risk for developing both MetS and TD in aging Taiwanese men. Further population-based studies utilizing larger samples of different ethnicities may be needed to confirm these preliminary results.

J Sex Med 2018;15:1527-1536

E-6
男性學論文獎住院醫師組

The Relationship between Androgen Deprivation Therapy and Depression Symptoms in Patients with Prostate Cancer

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Aim: In this study, we administered a questionnaire to consecutive prostate cancer patients who received androgen deprivation therapy (ADT) for understanding the prevalence of depression symptoms.

Materials and Methods: We retrospectively identified patients with prostate adenocarcinoma who received ADT between January 2015 and February 2018 at Mackay Memorial Hospital. The patients were then asked to complete the Chinese version of the Patient Health Questionnaire-9 (PHQ-9) during an interview. The patients were divided into two groups according to PHQ-9 score: those with depression symptoms (PHQ-9 $\geq$ 6, depression group), and those without depression symptoms (PHQ-9 $<$ 6, non-depression group). Two groups were compared using t-tests and correlation coefficients, as appropriate. Statistical significance was set at $p < .05$.

Results: There were no significant correlations between PHQ-9 scores and any of the parameters in the patients overall. In subgroup analysis, a positive correlation was found between the duration of ADT and PHQ-9 score in the patients with depression symptoms ($p = .03$). In addition, univariate analysis showed a positive association between the duration of ADT and PHQ-9 score, and a longer duration of ADT was further independently associated with increased PHQ-9 score in multivariate analysis in the patients with depression symptoms.

Conclusion: This study demonstrated that in patients with prostate cancer and depression symptoms, the severity of the depression symptoms was positively correlated with the duration of ADT. In contrast, this association was not found in patients without depression symptoms.

The Aging Male. 2019 Jan 16:1-6.
doi: 10.1080/13685538.2018.1560404

I-1

SLC9A3調控水通道蛋白在小鼠副睪的表現

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The Effect of SLC9A3 on Regulating the Expression of Aquaporin 1 (AQP1) in Epididymis of Mice

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Purpose: Solute carrier family 9 member 3 (SLC9A3) is a sodium-hydrogen exchanger protein that facilitates H+ secretion and Na+ absorption and regulates intracellular pH in epithelial tissue. Previous study indicated that loss of slc9a3 caused the dilation of rete testis and efferent ductules atrophy but the mechanism is unclear. We aimed to investigate the effect of SLC9A3 on regulating the expression of aquaporin 1 (AQP1) in epididymis by using SLC9A3 deficiency animal model.

Materials and Methods: Using FVB.129(Cg)-*Slc9a3*^{tm1Ges}/J mice. The genotype of mouse ear was detected by polymerase chain reaction (PCR) assay with genomic DNA. The WT and *slc9a3*$^{-/-}$ mice were sacrificed at 2, 4, and 6 months of age, and their organs were collected. Expression and localization of SLC9A3 were assessed by reverse transcription PCR and immunofluorescence staining.

Results: Disruption of SLC9A3 affected the development of testis and epididymis and leaded to the dilation of the lumen of efferent ductules. We found that the expression of AQP1 was significantly reduced in caput and cauda. In efferent ductules, AQP1 showed intense staining along the brush border of non-ciliated cells in wild type and *slc9a3*-/- mice. In efferent ductules, caput and cauda, we observed that CFTR staining was significantly reduced in SLC9A3 deficiency mice.

Conclusions: Our data suggested that AQP1 may play an important role in efferent ductules of *slc9a3*$^{-/-}$ mice. AQP1 involved in the fluid reabsorption/secretion in the epididymis, playing a pivotal role in the process of sperm maturation and concentration. These findings demonstrate SLC9A3 and AQP1 may interact in the epididymis, which associated with male fertility.

I-2

TBC1D21 缺失將導致男性不孕症因精蟲尾部以及粒線體結構受損

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Loss of TBC1D21 Causes Male Infertility with Multiple Morphological Abnormalities of the Sperm Flagella and Mitochondria Sheath

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Background and aims: Male infertility is a global public health issue and contributes to nearly half of all infertility cases. Small GTP-binding proteins are essential for numerous cellular processes including spermatogenesis. We have identified that *TBC1D21* gene (also named as Male Germ Cell RAB GTPase-activating protein, MGCRABGAP) is a novel germ cell specific GTPase-activating proteins and down-regulated in infertile men. Until now, how TBC1D21 involve in mammalian spermatogenesis is still needed to be characterized. In present study, we demonstrate that TBC1D21 is critical for multiple aspects of sperm tail integrity, such as the arrangement and morphology of mitochondria and the integrity of axoneme microtubules.

Methods: *Tbc1d21* knock-out mice and wild-type (WT) male mice were sacrificed and the testis, epididymis and vas deferens were collected and the pathological histology was examined. Sperm number, motility, and morphology were analyzed. The ultrastructure of sperm was assayed by transmission electron microscopy (TEM). In order to identify Tbc1d21-interacting proteins in male germ cell line, the immunoprecipitation (IP) was performed and followed by liquid chromatography-tandem mass spectrometry (LC MS/MS). The interaction between Tbc1d21 and potential candidates was confirmed by co-IP and IFA in male germ cell line and mouse sperm.

Results: In the *Tbc1d21*$^{-/-}$ male mice, the sperm number is only slightly lower than in wild-type mice but most of the sperm from *Tbc1d21*$^{-/-}$ mice display severe impaired tail structure and shorter mitochondria sheath in the midpiece of sperm tail. Ultrastructure examination in detail indicates the disordered arrangement and irregular morphology of mitochondria and disorganized microtubules in sperm flagellum. We also have used the co-IP followed by LC MS/MS to identify the interacting partners of TBC1D21. Among these candidates, translocase of outer membrane 22 (TOM22) and dynein heavy chain 7 (DNAH7) is the components of mitochondria and axoneme respectively. TBC1D21 interacts with TOM22 and colocalizes with TOM22 and DNAH7 in the midpiece of mature sperm tail. Loss of TBC1D21 leads to the dispersed localization of TOM22 and DNAH7 out of the midpiece.

Conclusions: Collectively, these data indicate that TBC1D21 probably achieves its function in cooperation with TOM22 and DNAH7, both of which are critical for sperm motility and tail structure. Our findings establish TBC1D21 as a key regulator during the formation of sperm tail.

I-3

無精症男性睪丸取精失敗風險預測

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A Risk Prediction of Sperm Retrieval Failure with Testicular Sperm Extraction in Males with Azoospermia

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Aim: This study was to evaluate the predictive value of factors in infertile male to retrieve testicular sperm extraction before they receive testicular sperm extraction (TESE) or micro-testicular sperm extraction. (micro-TESE)

Materials and methods: This is a retrospective study. Patients with azoospermia who received TESE or micro-TESE between January 2010 and February 2019 at Mackay Memorial Hospital were included. All data were compared using t-tests and correlation coefficients, as appropriate.

Results: Histological diagnosis of Sertoli cell only syndrome was obtained in 17 patients (17.7%), while patients 3(3.3%) had maturation arrest, 40(41.7%) had hypospermatogenesis, 28 (29.1%)had normal hypospermatogenesis, and 7 (7.2%) had Seminiferous tubule obstruction. Sperm retrieval rate was 1(6%) in Sertoli cell only syndrome, 35(85%) in hypospermatogenesis, 0(0%) in maturation arrest, 100% in both normal hypospermatogenesis and Seminiferous tubule obstruction. There were no significant correlations between positive of sperm retrieval and any parameters in the patients overall. In subgroup analysis, a positive correlation was found between FSH and sperm retrieval rate ($p=0.0006$) in non-obstructive azoospemia. In addition, there was no difference of sperm retrieval rate between TESE and micro-TESE in the patients with non-obstructive azoospemia.

Conclusion: This study demonstrated that in patients with sperm retrieval rate and FSH level in non-obstructive azoospemia, whereas, there was no difference between TESE and micro-TESE. Beside, histology diagnosis is the important role for predictive factor in the sperm retrieval rate.

I-4

非阻塞性無精症患者接受睪丸顯微探查取精手術–使否睪丸縱向切開探查較好?

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Microdissection Testicular Sperm Extraction (mTESE) for Non-Obstructive Azoospermia (NOA) - Is Longitudinal Testicular Incision Better?

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Objectives: Microdissection testicular sperm extraction (mTESE) has been the method of choice to retrieve sperm for men with non-obstructive azoospermia (NOA). However, there are controversies on the orientation of incision on the testis while at doing mTESE. Horizontal incision is advocated to avoid damages of the circumferential sub-tunical arteries. The purposes of this study were (1) to analyze the location of sperm yield at mTESE by using longitudinal incision; and (2) to discuss the impact of longitudinal incision to the change of testicular volume.

Materials and Methods: A total of 108 men with NOA had sperm identified at mTESE in our institute from 2013 to 2018. The procedure typically started from the larger testis with a longitudinal incision of tunica albuginea. If no sperm was identified, the contralateral testis was then explored. The location of positive sperm yield was categorized into three zones: (1) upper pole, (2) middle part and (3) lower pole of testis. All patients received a therapeutic mTESE at a later session and the testicular size was measured again.

Results: Among these men, 87 (80.6%) had sperm identified at the first testicle, and 21 (19.4%) needed to explore the contralateral side. In 71.3% (77/108) men sperm were found only in a single zone and in 28.7% (31/108) sperm were seen in multiple zones. Among patients with sperm retrieval in a single zone, the most popular sites were at the upper pole (45.5%), which was followed by the middle part (31.2%) and the lower pole (23.3%) respectively. Overall, in 38.9% (42/108) men sperm were identified at least in middle area, while in 61.1% (66/108) men sperm were only found at the polar areas. There was no significant difference in demographic data among patients with various sperm presenting patterns. At the later therapeutic mTESE, sperm was successfully retrieved in all patients at the previously registered positive location and there was no testicular atrophy identified.

Conclusions: Based on this study, mTESE using transverse incision might have missed 61.1% chance of sperm retrieval, since sperm are located only at the polar areas in these patients. Therefore, using longitudinal incision for mTESE is more likely to have a thorough exploration of the testicular parenchyma. There was no case of testicular atrophy noted in this series.

I-5

Klinefelter症候群亞洲族群的表現型分析 – 單一台灣機構106位病人

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Phenotype Analysis of Klinefelter Syndrome among Asian Population-106 Patients in One Taiwanese Institute

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Purpose: Klinefelter syndrome (KS) is well known to have some typical phenotypes in involved individuals, including tall stature, scanty beard, female-type pubic hair, and smaller testes. These classic presentations are concluded mostly from data of Caucasian population. However, they are not quite fully presented in Asian people. In this study, we retrospectively reviewed records in our institute to illustrate the phenotypical presentations of KS patients.

Materials and Methods: Data of KS were reviewed in a tertiary hospital with purely Han Chinese ethnicity from 2006 to 2018. We recorded body height, weight, and phenotypes such as gynecomastia, facial hair, pubic hair, and testes volume. Hormone profile, karyotyping, and semen analysis were reviewed as well. For those who underwent microscopic testicular sperm extraction (mTESE), the result of sperm yield and pathology diagnosis were also recorded. Fisher's exact test and Mann-Whitney U test were used for analysis.

Results: Totally 106 patients were included, with mean age 36.1. For phenotype analysis, the average height/weight is 175.1cm/82.1kg, with BMI 26.8. Among them, 29.0% presented gynecomastia, 46.0% showed poor beard growth, and 33.0% featured female pattern pubic hair. The testis size was universally small among all patients, with left side 4.1 cc and right side 3.9 cc. For karyotype analysis, 89 patients (84.0%) were with typical non-mosaic 47XXY (NMKS), 9 patients (8.5%) were with 46XY mosaic pattern (MKS), and the other 8 were with other abnormalities. For the 73 patients who underwent mTESE, sperms were found in 22 patients (30.1%). We compared the phenotype of NMKS group to MKS group, and significant difference was noted in body weight and semen pH (Weight: NMKS 83.2 vs MKS 69.5kg, p= 0.034; semen pH: NMKS 8.1 vs MKS 7.6, p= 0.028). We also noted that MKS group showed significantly larger testes (NMKS 3.6 vs MKS 5.9 cc, p= 0.034). There was no difference found in other phenotypes, including hormones, semen analysis parameters, pathology of testicular tissue, and rate of sperm yield. We also compared the phenotype between positive sperm yield group to the negative group, but there was no statistical difference noted.

Conclusions: Based on this Han Chinese population study, KS phenotypes are more heterogeneously presented than those demonstrated in Caucasians. The body height is similar to the general male population, and BMI falls into the overweight category. Small testis is the most universal feature, which is followed by scanty facial hair in around half of the patients. Gynecomastia and abnormal pubic hair are found in 1/3 of patients. Those with MKS had larger testes, but did not show a better chance of sperm yield after mTESE. Phenotype charateristics may not be used as a determinant to predict sperm yield of mTESE.

I-6

H358 細胞株中 MAEL 基因啓動子區域中進行目標甲基化會造成去氧核醣核酸斷裂

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Deoxyribonucleic acid (DNA) Strand Breaks Aggravate after Target Methylation of MAEL Promoter in Human NCI-H358 Cells

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Objective: Mouse maelstrom has been shown to participate in the piRNA-mediated defense system to protect the germ line from retrotransposons. The male MAEL knockout mice are sterile with small testicles and meiotic arrest. In our previous investigation, we found the aberrant methylation of MAEL promoter may lead to de-repression of LINE-1, which may contribute to one of the causes of spermatogenic failure in infertile men. In this study, we investigate the impact on deoxyribonucleic acid (DNA) after target methylation of MAEL promoter in human NCI-H358 cells.

Materials and methods: The targeted DNA methylation system (TDM) of MAEL promoter region(from -188 to +294) in human NCI-H358 cells was established to study the consequences after methylating the MAEL promoter. To investigate the direct impact of dysregulated methylation in MAEL promoter, we checked the Double-Strand Breaks (DSBs) by immunofluorescence with histone γ-H2AX in TDM cells compared with un-methylated cells. The quantification of γ-H2AX foci number is calculated and analyzed. Moreover, we also performed comet assay and compare the result in TDM cells versus un-methylated cells.

Results: After target methylating in MAEL promoter region, MAEL expression levels of TDM cells decreased significantly compared to un-methylated cells. Inversely, LINE-1 transcripts were significantly higher in TDM cells compared to un-methylated cells. In the human testis, the mRNA transcript levels of MAEL were significantly lower in patients with hypospermatogenesis (HS) than normal spermatogenesis(NS). Nevertheless, LINE-1 transcript levels were significantly higher in HS versus NS. There were significantly more γ-H2AX foci numbers detected in TDM cells than in un-methylated cells. Under comet assay, the tails of TDM cells are significant longer than un-methylated cells.

Conclusions: Our study provides evidence that MAEL gene participates in the epigenetic regulation of human spermatogenesis. MAEL promoter hypermethylation may induce human deoxyribonucleic acid strand breaks and might serve as one of the causes in human hypospermatogenesis.

I-7

BOLL啓動子高甲基化跟造精功能異常之間的關聯性

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The Association between Hypermethylation of BOLL Promotor and Spermtagenic Failure

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Purpose: In our previous project, we found that the testis with hypospermatogenesis had hypermethylation status of BOLL than the testes with normal spermatogenesis by using genome-wide methylation array and cDNA microarray. This study aimed to explore the association between BOLL promoter hypermethylation and spermatogenic failure.

Materials and Methods: The possible regulated region of methylation at the CGI (CpG island) promter of BOLL was predicted based on previous result of methylation array. In vitro luciferase reporter assay was used to verify the effects of hypermethylation of selected CGI promoter on promoter activity. We enrolled azoospermic patients with normal spermatogenesis and hypospermatogenesis. After bisulfate treatment, we determined the methylation status of each CpG by pyrosequencing analysis. Quantitative real-time PCR was used to determine the mRNA transcript level. Spermatogenic score was used to determine the severity of spermatogenic failure. Correlation between the percentage of methylation (% methylation) and transcript level and spermatogenic score was determined by calculating Pearson product moment correlation coefficients.

Results: The segment (-1225 to -626) on CGI promoter was selected and inserted into construct for luciferase survey. In vitro luciferase reporter assay, we revealed that significantly decreased luciferase activity was noted in methyltransferase HhaII or SssI treated constructs but not in methyltransferase HhaI treated constructs. The mRNA transcript levels of BOLL were significantly lower in patients with hypospermatogenesis. Of the 33 CpGs in selected segment, seven showed significantly higher % methylation in hypospermatogenesis group, and significantly inverse correlation was found between CpG % methylation and transcript levels in six GpGs. Significant inverse correlation was also found between CpG % methylation and spermatogenic score in seven CpGs.

Conclusions: Our results, for the first time, demonstrate that hypermethylation of CGI promoter of BOLL gene contributes to one of the causes of low expression of BOLL, which may lead to spermatogenic failure in humans.

S-1

達文西機械手臂輔助前列腺根除手術前勃起血流評估及早期性功能回復之探討

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Erectile Hemodynamic Status before Robotic-assisted Laparoscopic Radical Prostatectomy Associates with Tumor Location and Early Erectile Functional Outcome

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Objectives: Erectile dysfunction is common after surgery for prostate cancer. The aim of our study was to examine whether pre-operative erectile hemodynamic status reflects prostate tumor characteristics and affects erectile function recovery after robotic-assisted laparoscopic radical prostatectomy (RaLRP).

Materials and Methods: Between May 2018 and April 2019, a prospective study was designed to investigate men who had penile color Doppler ultrasonography (CDU) before RaLRP. CDU was performed with a single intracavernous injection of alprostadil (PGE1). MRI was performed in all patients for the characterization of disease. Questionnaires of simplified International Index of Erectile Function (IIEF-5) were collected preoperatively, 1 month, 3 months and 6 months after the operation.

Results: Among the 60 patients who received penile CDU and subsequent RaLRP, the median age was 66 years old (range 54-72), median BMI 24.8 kg/m2 (range 18.1-33.4). Median peak systolic velocity (PSV) and resistance index (RI) of both sides were evaluated: right PSV 43.25 cm/s, left PSV 42.95 cm/s, right RI = 0.86, and left RI = 0.86. Patients with right lobe tumor detected by MRI was associated with a higher right/left PSV ratio compared with those of left lobe tumor (1.139 vs 0.812, P=0.035), and a higher right/left RI ratio (1.012 vs 0.973, P=0.044). In patients who underwent bilateral nerve sparing surgery at 6 months after the operation, younger age (64 vs 68, P=0.029) and higher Erection Hardness Score (EHS) recorded during CDU (3 vs 2, P=0.009) were associated with erectile functional recovery, defined by IIEF-5 > 16. Compared with the group of IIEF-5≦16, higher median PSV (55.45 vs 41.65, P=0.089) and more patients with PSV>35 cm/s (90.9% vs 59.1%, P=0.109) were observed in the group of erectile functional recovery, although the trends were not statistically significant.

Conclusions: This prospective study indicates that the hemodynamic laterality of PSV or RI, and EHS of penile CDU might be useful for patient counselling before surgery and to develop new treatment strategies on erectile dysfunction after RaLRP.

S-2

近紅外線光譜儀評估勃起功能障礙之可行性探討

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Near Infrared Spectroscopy: A New Technique for Assessing Erectile Function

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Objectives: Near infrared spectroscopy (NIRS) has been widely used to assess the arterial stiffness and vessel health in recent years. In current study, we evaluated the viability of NIRS to exam the erectile function and penile vessel health.

Materials and Methods: Men with erectile dysfunction at least six months who needed for Penile Doppler ultrasonography were included. Assessment tools included self-reported EHS and IIEF, drug-induced EHS (20 μg Alprostadil, intracavernosal injection), Penile Doppler ultrasonography, and cavernous arterial NIRS. Parameters of Penile Doppler ultrasonography included PSV and RI were collected. Definition of NIRS parameters are mentioned below. Mid-erection period signals are signals obtained 3 minutes after the intracavernosal injection of Alprostadil. End-erection period signals are signals obtained during full erection. The amplitude difference (APD) is the amplitude difference of "mid-erection period" and "end-erection period". The cavernous arterial reflection time is the time difference of systolic peak and diastolic peak in arterial waveform. The augmentation index (AI) is the amplitude difference of systolic peak and diastolic peak divided by systolic peak. The institutional committee on ethics in human investigation has approved the study.

Results: There were 57 men enrolled in this study during Jun 2018 to Jun 2019. Most of our subjects (61.4%) reported EHS score 1 or 2. Results are shown in table 1. There were negative correlation between EHS and "end-erection period" and APD (R= -0.471, P< 0.001 for end-erection amplitude and EHS; R= -0.405, P= 0.002 for APD and EHS). The APD was significantly correlated to RI (R= 0.353, P= 0.008) and nearly correlated to IIEF significantly (R= 0.252, P= 0.060). The cavernous arterial reflection time was significantly correlated to self-reported EHS, drug-induced EHS, and IIEF (R= 0.480, P< 0.001 for self-report EHS; R= 0.356, P= 0.011 for drug-induced EHS; R= 0.44, P< 0.001 for IIEF). The AI was also significantly correlated to self-reported EHS and IIEF (R= 0.400, P= 0.003 for EHS; R= 0.313, P= 0.002 for IIEF).

Conclusions: This is the first study to exam the erectile function via NIRS. The result show that NIRS is a promising and noninvasive technique for measuring the erection function and cavernous arterial health.

S-3

評估研究女性性功能障礙問卷文獻探查

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Evaluating Questionnaires for Female Sexual Dysfunction-A Literature Survey

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Purpose: To assess the tools for evaluating female sexual dysfunction (FSD). We focused on the questionnaires.

Materials and Methods: The printed and online literature in FSD assessment was searched. Journal of Sexual Medicine, Journal of Sex & Marital Therapy and Archives of Sexual Behavior were the main Journal interested.

Results: From this limited survey, 19 assessment questionnaires were collected. They were GRISS-W (The Golombok Rust Inventory of Sexual Satisfaction for women, 1987), BISF-W (The Brief Index of Sexual Functioning for women,1994), SDI(The Sexual Desire Inventory,1996), DISF(The Derogatis Interview for Sexual Functioning,1997), IFSF(The Index of Female Sexual Function,1999), FSFI(The Female Sexual Function Index, 2000), FSDS(The Female Sexual Distress Scale, 2002), SCSF-W(The Symptom Checklist of Sexual Function-women version, 2003), PFSF©(The Profile of Female of Sexual Function, 2004), BSSC-W (The Brief Sexual Symptom Checklist for women, 2004), MSIQ (The Menopausal Sexual Interest Questionnaire, 2004), QSF(The Scale for Quality of Sexual Function, 2005), SSS-W (The Sexual Satisfaction Scale for Women, 2005), SIDI-F (The Sexual Interest and Desire Inventory-Female, 2005), FSQ (The Sexual Function Questionnaire, 2005), SADI (The Sexual Arousal and Desire Inventory, 2006), CSDS (The Cues for Sexual Desire Scale, 2006), HSDD screener (The Hypoactive Sexual Desire Disorder Screener, 2006), and FSDS-R(The Female Sexual Distress Scale-Revised, 2008). The number of items in the questionnaires ranged from 4(BSSC-W, for example) to 54(SADI).

Conclusion: In this limited study, no official evaluating questionnaire is available in Taiwan Urological Association or Taiwanese Association of Andrology. A validated questionnaire is useful for both clinicians and researchers. We suggest to choose a suitable questionnaire for any further study.

S-4

比較年輕(20-39 歲)與老年(40-69)兩族群篩檢器質性因子與心理社會壓力

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Screening for Organic Factors and Psychosocial Distress between Young (20–39 yrs) and Old (40–69 yrs) Age Groups with ED

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Objectives: To investigate the organic factors and psychosocial distress between young (20–39 yrs) and old (40–69 yrs) age groups with erectile dysfunction (ED)

Materials and Methods: The participants were recruited from outpatient clinic who presented with the complaint of ED. Data were retrieved through chart review. Organic factors include obesity, self-reported comorbidities (diabetes, hypertension, dyslipidemia, major cardiovascular disease), hypogonadism and metabolic syndrome. Psychosocial distress was assessed by participants' response to seven dichotomous screening questions. The ED severity was assessed by the 5-item Sexual Health Inventory for Men. The Institutional Review Board approved the protocol and a written informed consent was waived.

Results: From 2009 to 2019, a total of 4563 subjects presented with the complaint of ED at our institution. After excluding subjects with incomplete data and who did not meet the inclusion criteria, 3136 subjects' data were eligible for analysis for this study and were divided into young age group (20-39 yrs, n = 990) and old age group (40-69 yrs, n = 2146) with a mean age of 32.6 yrs and 55.3 yrs, respectively. Although all the organic factors were significantly higher in old age group than in young age group (all $P < 0.05$), only one third of young age group were free of organic factors. The young age group reported a less severity of ED than old age group ($P < 0.001$). In contrast to organic factors, young age group reported a higher psychosocial distress when compared with old age group, especially in emotional aspects ($P < 0.05$).

Conclusions: Organic factors should be assessed in all men with ED irrespective of his age. Young men had a higher psychosocial problem than old men, especially in the emotional aspect.

S-5

脂肪肝指數為台灣老化男性罹患睪固酮低下的新穎預測因子，特別是未罹患代謝症候群族群

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Fatty Liver Index is a Novel Predictor of Testosterone Deficiency in Aging Taiwanese Men Especially Subjects without Metabolic Syndrome

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Abstract

Introduction: Nonalcoholic fatty liver disease (NAFLD) is considered the hepatic manifestation of metabolic syndrome (MetS). Although the link between MetS and testosterone deficiency (TD) is well known, studies investigating the association between NAFLD and TD are still limited**.** Fatty liver index (FLI) is a noninvasive and economic tool to evaluate the risk of NAFLD with good discriminative ability. The aim of this study is to evaluate the association between the risk of NAFLD assessed by FLI and TD in an aging Taiwanese male population.

Materials and Methods: A free health screening of men over 40 years of age was conducted in a medical center in Kaohsiung City, Taiwan. All participants underwent a physical examination, answered a questionnaire on demographics and medical history, completed the Androgen Deficiency in The Aging Male questionnaire to assess clinical symptoms of TD, and provided 20-mL whole blood samples for biochemical and hormonal evaluation. The diagnosis of MetS and TD were according to the modified criteria from the NCEP ATP-III definitions and the 2018 AUA guideline, respectively. The risk of NAFLD was evaluated by using FLI. FLI$<$25 and FLI$\geqq$35 were used to rule out and rule in NAFLD.

Results: A total of 552 men were enrolled for this study (mean age, 54.7$\pm$ 4.7 years). According to the criteria of FLI, there are 281 subjects diagnosed without, 79 at risk of and 192 with NAFLD, respectively. Subjects with NAFLD had significantly higher prevalence of TD (19% vs 4.3%, $p<0.001$) and MetS (25% vs 7%, $p<0.001$), respectively than those without NAFLD. In addition, subjects at risk of and with NAFLD carried a 2.81- and 4.97- times higher risk of developing TD, respectively, compared to those without NAFLD after adjusting for potential covariates. Those relationships were more significant in subjects without MetS.

Conclusion: FLI is a good predictor to evaluate the risk of TD in aging Taiwanese men especially subjects without MetS. Further population-based studies utilizing larger samples of different ethnicities may be needed to confirm these preliminary results.

S-6

血小板血漿對高脂肪食物誘發老鼠性功能障礙的治療效果

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Intracavernous Injection of Autologous Platelet-Rich Plasma Ameliorates Hyperlipidemia-Associated Erectile Dysfunction in a Rat Model

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Objectives: Hyperlipidemia is significantly associated with an increased risk of erectile dysfunction (ED) through endothelial damage. Platelet-rich plasma (PRP) releases a number of angiogenic growth factors. There is still little evidence to support the use of PRP as ED treatment. We investigated whether PRP has therapeutic effects in a rat model of hyperlipidemia-associated ED.

Materials and Methods: Thirty 2-month-old male Sprague–Dawley rats were divided into three groups. Ten rats were fed a standard diet and received supernatant injection into the corpus cavernosum per week for 4 weeks (N group). The remaining 20 rats were fed a high-fat diet for 5 months and were randomly divided into two groups: (i) H group comprising rats who received supernatant injection into the corpus cavernosum per week for 4 weeks or (ii) H + PRP group comprising rats who received PRP injection into the corpus cavernosum per week for 4 weeks. At 7 days after the fourth injection, all rats underwent erectile function testing by measuring intracavernous pressure (ICP) and mean arterial pressure (MAP). Blood serum was collected for determining metabolic variables, and penile tissue was collected for morphological examination.

Results: The mean body weight, low-density lipoprotein, and serum glucose were significantly higher in the H group than in the N and H + PRP groups. Serum high-density lipoprotein and nitric oxide levels were significantly lower in the H group than in the N and H + PRP groups. Insulin-like growth factor-1 (IGF-1), brain-derived neurotrophic factor (BDNF), and vascular endothelial growth factor (VEGF) levels were significantly higher in the PRP than in the supernatant (all $p < 0.05$). The mean ICP/MAP ratios were 0.84 ± 0.127, 0.87 ± 0.082, and 0.46 ± 0.096 in the N, H + PRP, and H groups, respectively ($p = 0.0155$). The mean neuronal nitric oxide synthase and endothelial nitric oxide synthase in the corpus cavernosum were weakly expressed in the H group than in the N and H + PRP groups. The mean intracorporal oxidative stress and apoptotic index were significantly higher in the H group than in the N and H + PRP groups. No significant differences were noted in the serum testosterone and smooth muscle content in the corpus cavernosum between the groups.

Conclusion: Intracavernous injection of autologous PRP can partially recover erectile function and diminish hyperlipidemia-associated pathophysiological consequences.

S-7

低能量體外震波治療對於頑固性慢性骨盆疼痛症候群患者療效的預測因子

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The Predictor of Low-intensity Extracorporeal Shockwave Therapy Efficacy in Patients with Refractory Chronic Pelvic Pain Syndrome

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Objectives: Managing patients with refractory chronic pelvic pain syndrome (CPPS) who failed to respond to traditional 3-As therapy (antibiotics, alpha blockers and anti-inflammatories) is still a challenging task. Low-intensity extracorporeal shockwave therapy (LI-ESWT) was reported recently to be able to improve clinical symptoms of CPPS. The current study was performed to determine the important predictor of LI-ESWT efficacy in patients with refractory CPPS.

Materials and Methods: This was an open-label single-arm prospective study conducted in Kaohsiung Medical University-affiliated hospitals. CPPS patients who could not have more than 6 point decline in the National Institutes of Health-Chronic Prostatitis Symptom Index (NIH-CPSI) total score under a maximal dosage of 3-As therapy were enrolled. Socio-demographic information, personal habits, and detailed medical history were recorded. LI-ESWT treatment consisted of 3000 shock waves once weekly for 4 weeks (Duolith SD1 T-Top). All patients continued or taped their regular therapy. Clinical symptoms were re-assessed using NIH-CPSI score, Visual Analogue Scale (VAS), International Index of Erectile Function-5 items version (IIEF-5) and International Prostate Symptom Score (IPSS) at 1, 3, 6 and 12 months after a complete course of LI-ESWT.

Results: A total of 43 patients were enrolled. 31 of the 43 patients (72.1%) had a successful response at the 1-month follow up after the LI-ESWT treatment. NIH-CPSI score, VAS and IPSS showed significantly improved over the span of a 12-month follow-up. In 31 patients who responded successfully to LI-ESWT at the 1-month follow-up, 26 patients (83.9%) could maintain their response at the 6 and 12-month follow-up. The existence of psychosocial disorder at the baseline characteristics analysis was the only potential factor that may hinder the effectiveness of LI-ESWT.

Conclusions: LI-ESWT has shown to be a safe and effective therapy for refractory CPPS patients who failed to respond to traditional 3-As medications. For patients with successful response at the short-term follow- up, the improvement was still noticeable at the long-term (6 and 12 months) follow-up. History of psychological disorders might be a significant predictor of a successful response. Further studies are needed to determine other important predictors of LI-ESWT efficacy in patients with refractory CPPS.

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