

## 出國報告（出國類別：開會）

# 2018 美國 ASTRO 論文發表心得報告

服務機關：高雄榮民總醫院放射腫瘤部

姓名職稱：劉文山部主任

派赴國家：美國

出國期間：2018 年 10 月 20 日至 2018 年 10 月 25 日

報告日期：2018 年 11 月 16 日

## 摘要

美國放射腫瘤學會(American Society of Radiation Oncology, ASTRO)年會是全世界臨床放射腫瘤與相關學科最具規模與最重要的會議。每年有來自全球有超過一萬人出席，其中專業領域包括醫師、物理師、放射師、腫瘤護理師等。今年是 ASTRO 第 60 屆會議，開會地點是美國德州聖安東尼奧的國際會議中心，會議主軸是「將發現轉為治癒，Translating Discovery to Cure」，強調研究發現的重要性，因為沒有研究就沒有新發現，沒有新發現就無法提高治癒率。

會議課程涵蓋各種癌症領域，如頭頸癌、中樞神經癌、乳癌、胃腸道癌、泌尿生殖癌、婦癌、肺癌、小兒癌等完整全癌症領域。除此之外，腫瘤護理、輻射生物學、和輻射物理學也有獨立的討論議題。

關鍵字：2018 ASTRO, American Society of Radiation Oncology

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## 一、目的

美國放射腫瘤學會(ASTRO)年會是全世界臨床放射腫瘤與相關學科最具規模與最重要的會議，此會議發表的重要結果，常成為 National Comprehensive Cancer Network (NCCN, 美國綜合癌症網絡)更新放射治療指南的根據。每年投稿於此年會的研究論文超過 3000 篇，但最後被接受的論文僅約三分之一，所以能夠在 ASTRO 發表論文是全世界放射腫瘤醫師的榮耀與肯定！此行主要目地為發表研究成果：The impact of image guided radiotherapy for nasopharyngeal cancer patients，次要目的為觀摩頭頸癌領域其他發表者研究結果，與了解放射腫瘤研究趨勢與未來可能發展方向。除了發表我們的研究結果外，利用此機會充分學習世界頂尖同儕的研究成果與方向亦是非常重要的學習項目。藉由發表我們研究成果與觀摩世界頂尖研究，期待提昇放射腫瘤部的研究素材與品質，使高榮在南部醫學中心更具競爭力。



## 二、過程

第一天(2018/10/20)：飛航。

第二天(2018/10/21)：第 60 屆 ASTRO 會議正式開始，一早 8 點就是大會重點會議 Presidential Symposium，第一場講述 The Radiation Oncology/Immunotherapy Interface，這是近年來最熱門的免疫治療議題，大會邀請了 Dr. Formenti 探討免疫治療與放射治療的關聯性及如何利用放射治療加強免疫治療的效果。接下來 Presidential Symposium 大會安排的題目有：Virally-induced Cancers 2018 and Beyond，Artificial Intelligence Meets Radiation Oncology，與 Liquid Biopsies and Cancer Care。相信安排免疫治療、liquid biopsy 及病毒相關議題是拓展放腫會員的視野，而人工智慧議題則是期待會員不要落後與忽略了未來人工智慧在放腫學界的影響與發展。這也讓職驚訝地憶起，院長在約半年前曾經問到放射治療要如何與人工智慧接軌？院部長官的視野確實值得欽佩！職也於 11 月 9 日與楊宗龍主任請教討論相關議題，期望將來能有明確構思。

第三天(2018/10/22)：大會排定今日 10:45 至 12:15 是頭頸癌 poster 論文報告時間，這也是非常好的機會可以報告我們論文外，觀摩來自世界各優秀醫院的研究成果。我們研究高榮 2012 至 2017 年 207 位鼻咽癌的病人，分析比較影像導引是否影響治療的結果？研究發現整體病人的五年存活率為 79.3%，多變項分析發現  $N0-2(=0.007)$ 與使用影像導

引技術(p=0.02)五年存活率可以有統計學上較佳結果。其他發表有趣研究如 Washington 大學第二期研究，病理 neck negative (pN0)病人，在特定疾病與期別下，該頸部不接受 PORT 局部控制率可達 97%，復發率低。澳洲分析 1282 位口腔癌 T1-2N0-2b 病人，只照單邊五年頸部淋巴結復發率為 13.3%，可供臨床參考。費城大學分析 424 位 p16 陽性口咽癌，發現病理特徵 LVI(+), margin (+), 與頸部淋巴結侵犯區域多是預後不良因子。大陸中山醫學大學研究以神經網路方法來預估鼻咽癌治療範圍。UCSD 以 AT84E7 HPV 陽性細胞比較 RT+IO vs. RT vs. IO，RT+IO 可以獲得最好的控制。

第三天(2017/10/23)：會議第三天上午上半場重點是頒獎與紀念卓越貢獻學者，雖然與我們這些國外來的與會者無密切關係，但可以感受到 ASTRO 學會重視歷史傳承與表揚鼓勵卓越研究貢獻學者的用心。上午下半場是由廠商邀請學者演講與中午的投票改選理監事。下午分別在五個教室進行演講，其中有趣的內容有：如何應用 MRI 作為放射治療導引的方式，攝護腺癌大劑量少分次的現在與未來，3D 近接治療在婦癌的貢獻與幫忙等等，有些是釐清不確定的治療，有些則是鼓舞未來應繼續研究開發。

第四天(2017/10/24)：本日主要是教育課程，ASTRO 學會也如國內學員必須要積滿進修時數，所以大會很有系統的安排各種腫瘤的教育

學程，對於資深醫師也是非常好的複習與學習新知的機會。其中也有穿插新領域的議程，例如討論蒐集質子治療的臨床結果，免疫治療結合放射治療的助益與發展，各種轉譯治療的方向等等。

### 三、心得

ASTRO 年會是全世界放射腫瘤相關學科最具規模與最重要的會議，每年都吸引來自全球各地包括醫師、物理師、放射師、腫瘤護理師等專業人士參與盛會。每屆都會訂出開會主軸，今年為「將發現轉為治癒，Translating Discovery to Cure」，強調研究發現的重要性，因為沒有研究就沒有新發現，沒有新發現就無法提高治癒率。由大會安排的 keynote speech 內容，可以看出這一年來最熱門的研究領域與未來可能的發展方向。今年投稿很榮幸獲得接受，大會安排本論文在海報報告議程發表，在電子海報發表會場也認識了相同領域的其他國家同好，不只是讓我們的研究成果讓眾人知道，更可以了解全世界的發展方向，這個收穫遠遠比單獨發表一篇文章或閱讀幾篇研究報告還要更廣與全面！



#### 四、建議事項

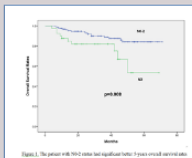
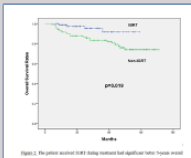
1. 針對頭頸部癌症病人，如何減少因放射治療或放射化學治療的後遺症以提高生活品質，是本單位需要持續研究與改善領域。
2. 持續分析發表高榮鼻咽癌治療成果，包括影像導引的角色、可適性 (adaptive) 放射治療適應症(已進入 SCI 雜誌修改階段)、治療後咽喉功能改變研究等等，以強化高榮在鼻咽癌治療減少後遺症領先角色的確立。
3. 持續與研創中心楊宗龍主任討論未來 AI 或系統性整合方向。
4. 持續發展乳癌體內微管放射治療，以強化高榮在台灣의領先角色。
4. 鼓勵年輕醫師能參加 ASTRO 會議，以刺激研究素材靈感與開拓視野。

# 附錄

## 1. 刊登論文內容，編號 MO\_33\_2777

### The impact of image guided radiotherapy for nasopharyngeal cancer patients

Wen-Shan Liu, Kuo-Wang Tsai, Ju-chun Chien, Yu-Chang Hu  
Department of Radiation Oncology, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan

PURPOSE / OBJECTIVE(s)	RESULTS	SUMMARY / CONCLUSION																																																															
<p>Image guided radiotherapy (IGRT) via cone-beam computerized tomography (CBCT) could improve the geometric accuracy for head and neck cancer radiotherapy. However, there is lacking data of this technique influence the treatment results. This retrospective study aimed to evaluate the impact of IGRT and other risk factors in nasopharyngeal cancer (NPC) patients received intensity modulated radiotherapy (IMRT).</p>	<p><b>Table 1. Patient characteristics (n = 207)</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Characteristic</th> <th>Number</th> <th>Percentage (%)</th> </tr> </thead> <tbody> <tr> <td>Gender</td> <td>197 (95.2)</td> <td>95.2</td> </tr> <tr> <td>Male</td> <td>197</td> <td>95.2</td> </tr> <tr> <td>Female</td> <td>0</td> <td>0</td> </tr> <tr> <td>Age (mean ± SD)</td> <td>52.4 (12.4)</td> <td></td> </tr> <tr> <td>Stage</td> <td></td> <td></td> </tr> <tr> <td>I</td> <td>15</td> <td>7.2</td> </tr> <tr> <td>II</td> <td>45</td> <td>21.7</td> </tr> <tr> <td>III</td> <td>105</td> <td>50.7</td> </tr> <tr> <td>IV</td> <td>42</td> <td>20.3</td> </tr> <tr> <td>Unknown</td> <td>0</td> <td>0</td> </tr> <tr> <td>IGRT</td> <td></td> <td></td> </tr> <tr> <td>Yes</td> <td>197</td> <td>95.2</td> </tr> <tr> <td>No</td> <td>10</td> <td>4.8</td> </tr> <tr> <td>IMRT</td> <td></td> <td></td> </tr> <tr> <td>Yes</td> <td>197</td> <td>95.2</td> </tr> <tr> <td>No</td> <td>10</td> <td>4.8</td> </tr> <tr> <td>Chemotherapy</td> <td></td> <td></td> </tr> <tr> <td>Yes</td> <td>197</td> <td>95.2</td> </tr> <tr> <td>No</td> <td>10</td> <td>4.8</td> </tr> <tr> <td>Unknown</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Characteristic	Number	Percentage (%)	Gender	197 (95.2)	95.2	Male	197	95.2	Female	0	0	Age (mean ± SD)	52.4 (12.4)		Stage			I	15	7.2	II	45	21.7	III	105	50.7	IV	42	20.3	Unknown	0	0	IGRT			Yes	197	95.2	No	10	4.8	IMRT			Yes	197	95.2	No	10	4.8	Chemotherapy			Yes	197	95.2	No	10	4.8	Unknown	0	0	<p>In the CCRT and IMRT era, the factors of longer treatment time (more than 56 days), Stage IV, N3 and non-IGRT technique were the risk factors for NPC patients. Among them, the N3 and non-IGRT technique were the two independent risk factors that would result poorer 5-years survival rates. This study provide the scientific evidence of the role of IGRT for nasopharyngeal cancer patients.</p>
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<p><b>MATERIAL &amp; METHODS</b></p> <p>From January 2012 to June 2017, there were 207 patients diagnosed of NPC. This study enrolled 197 patients without metastasis and previous malignant disease. All patients received IMRT with or without IGRT technique by CBCT method. Most of them received concurrent chemoradiotherapy (CCRT) (87.8%, 173/197) with or without induction and adjuvant chemotherapy. Risk factors of age, gender, T4, N3, Stage IV, treatment time, IGRT and kinds of chemotherapy were examined. The survival rates were calculated by Kaplan-Meier method and the risk factors were evaluated by Log-rank test. The multivariate analysis was evaluated by Cox regression model.</p>	<div style="display: flex; justify-content: space-around;">   </div> <p>The calculated five-year survival rate was 79.3% for the whole population. Using univariate analysis, the factors of long treatment time (&gt;56 days, p=0.046), Stage IV disease (p=0.009), N3 status (p=0.007) and non-IGRT technique (p=0.02) significantly impaired the survival rates. By multivariate analysis, the non-IGRT technique (p=0.031) and N3 status (p=0.012) were the independent risk factors.</p>	<p><b>REFERENCES / ACKNOWLEDGEMENTS</b></p> <p>Liu WS, Li EB, Yu WC, Chou AT. Management of nasopharyngeal carcinoma. <i>Quantitative Imaging in Medical Physics</i>. 2012; 12(1):1-10.</p> <p>Chen YC, Chen CH, Hsu L, et al. Comparison of intensity modulated radiotherapy (IMRT) versus 3D conformal radiotherapy (3D-CRT) for nasopharyngeal carcinoma: a retrospective analysis of 100 patients. <i>Radiotherapy and Oncology</i>. 2011; 119(2):201-206.</p> <p>Chen YC, Chen CH, Hsu L, et al. Comparison of intensity modulated radiotherapy (IMRT) versus 3D conformal radiotherapy (3D-CRT) for nasopharyngeal carcinoma: a retrospective analysis of 100 patients. <i>Radiotherapy and Oncology</i>. 2011; 119(2):201-206.</p> <p>Chen YC, Chen CH, Hsu L, et al. Comparison of intensity modulated radiotherapy (IMRT) versus 3D conformal radiotherapy (3D-CRT) for nasopharyngeal carcinoma: a retrospective analysis of 100 patients. <i>Radiotherapy and Oncology</i>. 2011; 119(2):201-206.</p>																																																															

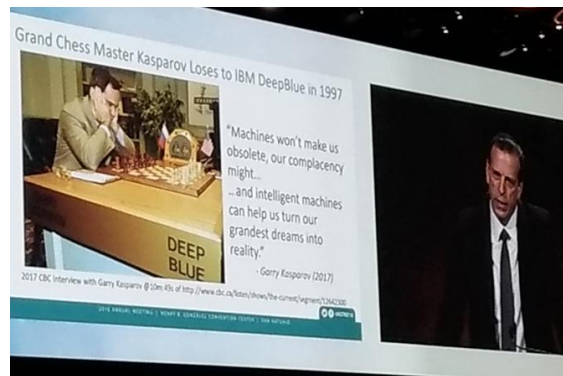
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ASTRO

## 2. 大會演講照片



Keynote speech, 病毒與癌症

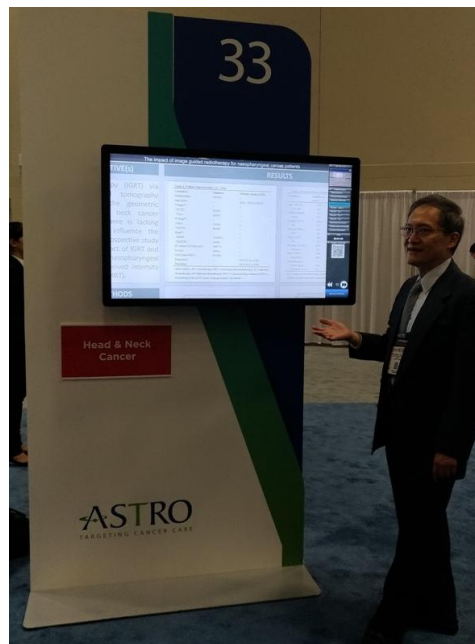


AI 在醫療產業的應用

### 3. 參加大會與報告紀錄



大會大廳 (2018/11/21)



報告論文 (2018/11/22)

### 4. 大會議程

Sunday, October 21, 2018	
6:45 a.m. - 8:00 a.m.	International Attendee Welcome Breakfast (open to international attendees only)
7:45 a.m. - 8:00 a.m.	Welcome to San Antonio
8:00 a.m. - 9:00 a.m.	Practical Radiation Oncology (PRO) Session*
8:00 a.m. - 9:05 a.m.	Presidential Symposium
8:00 a.m. - 9:30 a.m.	eContouring Session*
9:00 a.m. - 10:00 a.m.	Practical Radiation Oncology (PRO) Session*
9:05 a.m. - 10:15 a.m.	Presidential Symposium
10:00 a.m. - 5:00 p.m.	Innovation and Solution Showcase Open
10:30 a.m. - 12:00 p.m.	eContouring Session*
10:30 a.m. - 12:15 p.m.	Presidential Symposium
12:15 p.m. - 1:15 p.m.	Nurses' Luncheon
12:15 p.m. - 1:15 p.m.	ARRO Annual Luncheon**
1:15 p.m. - 2:45 p.m.	Poster Q&A Session
	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	eContouring Session*
	International Session
	Practical Radiation Oncology (PRO) Session*
3:15 p.m. - 4:45 p.m.	Clinical Trials Session
4:45 p.m. - 6:15 p.m.	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	eContouring Session*
	International Sessions
	Joint Session
	Young Physicians' Workshop
4:45 p.m. - 6:15 p.m.	ARRO Meet the Professors Reception**

Monday, October 22, 2018	
7:45 a.m. - 9:00 a.m.	Oral Scientific Sessions
	Education Sessions
	International Session
	ASTRO Research Awards Winner Breakfast
	Science Highlights
9:15 a.m. - 10:15 a.m.	Keynote Address
10:00 a.m. - 5:00 p.m.	Innovation and Solution Showcase Open
10:45 a.m. - 12:15 p.m.	Poster Viewing Q&A
	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	eContouring Session*
	International Sessions
12:15 p.m. - 1:30 p.m.	ARRO Poster Walk with a Professor**
12:30 p.m. - 1:30 p.m.	AAWR/ASTRO Luncheon
1:30 p.m. - 2:15 p.m.	Presidential Address
2:15 p.m. - 3:45 p.m.	Plenary Session
4:15 p.m. - 5:45 p.m.	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	eContouring Session*
	International Session
	Joint Session

Tuesday, October 23, 2018	
7:45 a.m. - 9:00 a.m.	Scientific Sessions
	Education Sessions
	Science Highlights
9:15 a.m. - 10:15 a.m.	Keynote Address
10:00 a.m. - 5:00 p.m.	Innovation and Solution Showcase Open
10:15 a.m. - 11:30 a.m.	Awards Ceremony
11:30 a.m. - 1:00 p.m.	Business Meeting Luncheon (Open to ASTRO Voting Members Only)
1:00 p.m. - 2:30 p.m.	Poster Viewing Q&A
	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	Workshop
2:45 p.m. - 4:15 p.m.	Poster Viewing Q&A
	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	Workshop
4:45 p.m. - 6:15 p.m.	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	Joint Session

Wednesday, October 24, 2018	
<b>Exhibit Hall is closed. Dismantle continues in the Exhibit Hall.</b>	
7:45 a.m. - 9:00 a.m.	Oral Scientific Sessions
	Education Sessions
	Science Highlights
9:15 a.m. - 10:00 a.m.	Keynote Address
10:00 a.m. - 10:45 a.m.	ASTRO Guidelines Highlight
11:00 a.m. - 12:30 p.m.	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
	Joint Session
1:30 p.m. - 3:00 p.m.	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions
3:15 p.m. - 4:45 p.m.	Oral Scientific Sessions
	ePoster Sessions
	Panel Sessions
	Education Sessions