出國報告（出國類別：開會）

International Conference on Hypertension 2025 and Mechanical Support and Thoracic Transplantation Summit

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摘　要

此次美國一共參與兩場會議，一場為 Hypertension 2025，另一場為 Mechanical Support and Thoracic Transplantation Summit. Hypertension 2025 由 American Heart Association(AHA)主辦，Mechanical Support and Thoracic Transplantation Summit 則由 American Association for Thoracic Surgeon(AATS)，兩者皆為美國該領域最大的學。醫學生時期就對心臟科十分有興趣，並且開始做相關研究，這次很榮幸兩篇學術海報皆有獲得發表的機會。其中發表在 Hypertension 2025 的學術摘要，更是獲得 2025 Paul Dudley White International Scholar Award 獎項。Paul Dudley White (June 6, 1886 – October 31, 1973)被視為美國心臟科之父，為美國麻州總醫院(Massachusetts General Hospital)心臟科醫師，畢業於哈佛醫學院 (Harvard Medical School). 該獎項主要頒發於 AHA 各大會議中，會從各個國家的投稿人中挑選一位獲獎。學生時期就對心臟科知識十分感興趣，這次有機會可以同時參加心臟內科與心臟外科會議自然相當興奮，雖然仍有許多專業知識尚未涉獵，此次會議依然大開眼界且收穫豐富。

關鍵字：Hypertension 2025, Mechanical Support and Thoracic Transplantation Summit.

目　次

一、 目的

本次參加會議，除發表學術海報研究以外，希望可以認識世界頂尖級大師，了解該領域最前線的研究，並學習會議相關研究主題，並希望可以對往後職涯獲得一些啟發。

二、 過程

(一) 09/02: 出發前往巴爾地摩
(二) 09/03-04: 參加 Hypertension 2025 會議
(三) 09/05-06: 出發前往波士頓參加 AATS: Mechanical Support and Thoracic Transplantation Summit

三、 心得

由於這次參加兩項會議，且兩項會議性質規模上都有所差距，更能了解彼此間的差異。Hypertension 2025 會議以介紹目前 Hypertension Guideline、血壓量測的最新研究、以及血壓的生理機轉為主。參加的人員種類較多，包含各實驗室的博士生，博士後研究員、計畫主持人、藥師、醫師、以及醫學生為主。參加人員大多為各大學實驗室人員。也因為大家的背景不盡相同，演講者經常會用較為引導的方式切入介紹，以確保大家都能有一定程度的理解。演講主題包羅萬象，許多主題因從未接觸到而相當有趣。由於本次發表的研究主要為比較 ABPM 與 HBPM，就有美國的教授與我討論該如何確認病人測量的血壓是真的準確的，他們做過研究確實會產生許多誤差。AI 的議題也經常在最近的研討會被討論到，今年大會甚至有請一位 statistician 與一位臨床醫師共同辯論 AI 的優缺點與發展性，十分有趣。

AATS 參加的人員則多為各個醫院的心臟外科，以及胸腔外科醫師，以及少數住院醫師與醫學生。彼此都較為熟識，演講主題也較為深入。此次出國發表很感謝吳詠斯醫師的指導，從去年開始就陸陸續續給我許多指導，分享許多論文、定期討論以及參加 seminar 都令我收穫豐富。本次大會討論主題對我來說相當新穎，主題包含：DCD heart transplant, DCD lung transplant, ECPR, and mechanical circulatory support 等等。我的研究主題主要為 ECPR and mechanical circulatory support，因此 DCD transplant 對我來說是完全是一個全新的領域，甚至在開會前才稍微讀了一下 DCD heart transplant 原來是 DCD (Donation After Circulatory Death) heart transplant，以往心臟移植以 DBD (Donation After Brain Death)為主，但因爲 donor pool 不夠，除了發展 xenotransplant 外，也有人發展 DCD。美國的第一例 DCD 為 2019 年由 Duke hospital 的團隊開啟，手術醫師也有蒞臨大會。發展 DCD 需仰賴許多團隊以及技術的整合：政策環境的配合、perfusion system 發展與創新、外科移植團隊的手術、以及術後的病人照顧與改善。本次一共聽了眾多演講，其中一場 Stanford Healthcare 移植團隊的演講於我最為印象深刻。演講主題為 First En-Bloc Heart and Lung Rapid Recovery combined with Abdominal Normothermic Regional Perfusion Donation After Circulatory Death Procurement，Stanford 醫師分享他們的經驗，

如何團隊整合與溝通、克服困難。Speaker 為 Dr. Chawannuch Ruaengsri。她的 training 過程較為特別，她是在泰國 training 完心胸外科，再到美國做 fellowship。最後才到 Stanford 做外科醫師。赴美行醫替她完成了許多在泰國無法完成的夢想。

參加會議除可在忙碌的臨床工作抽空出外看看，亦是一個很棒的學習機會，看看國外最新研究發展到哪，雖然許多東西在台灣受限環境或現實考量無法發展，有機會看看還是可以增進許多臨床思考。除此之外，有機會認識國外大師並了解他們的職涯與想法，也可以對平時工作有莫大的啟發。此次會議很讓我了解到 Think outside the box，許多看似不可能的事都可以有解決的方法。此次發表很感謝台中榮總吳詠斯醫師的指導，回國將繼續努力。因筆者 clerk 時期曾至 UCSD 實習，很有幸在會議中又看到當時手術的醫師。

參加會議照片

四、 建議事項

(一) 增進國際間醫院交流與合作，與外國醫院簽訂合作協議增加人員出外訪視機會

(二) 鼓勵院內同仁參加國際會議，增進學術風氣，獎勵出國開會：本次出國參加會議為自費，美國會議報名費與消費物價均高，短期內可能無法再出國進修

(三) 鼓勵年輕醫師從事研究，增加院內相關研究工作坊，提供專業人員諮詢機會，臨床

醫師工作繁忙，希望可因此減輕研究負擔

(四) 合作團隊建立，如：ECPR 團隊，明確化分各科各專業分工，建立長期合作制度，並持續改善

五、 附錄（參加大會筆記）

Hypertension 2025

1. In adults with uncontrolled hypertension, any reduction of BP is beneficial
2. Strong evidence for CVD benefits in adults treated to an SBP target<130 and <120 mmHg vs. higher SBPs, at least in older adults at higher risk for CVD
3. Also, evidence that lower BPs reduce risk of cognitive impairment and dementia.
4. Implementing the 2025 AHA/ACC guideline recommendations for office BP targets should be a high priority.
5. All first line agents are appropriate.
6. Use ACEI and ARB for patients with DM and CKD, particularly with moderate to severe albuminuria.
7. Consider incretin mimetics (GLP-1 RAs) or bariatric surgery for adults with overweight or obesity as adjuncts to lower BP.
8. Blood pressure is expected to rise postpartum and thus the postpartum period is a particularly important time for blood pressure monitoring and management.
9. During pregnancy, patients with chronic hypertension should have blood pressure treated to an average of 140/90mmHg.
10. Women at risk must be identified early based on the already known risk factors
11. Early interventions: Aspirin, education and multidisciplinary monitoring must be implemented.
12. Pregnancy offers a unique window for identification of women at risk for future CVD and should result in early postpartum and long-term monitoring, risk stratification, and lifestyle modification.
13. BP should be stabilized and normalize by 4 weeks postpartum in normotensive pregnancies and 12 weeks after HDP.
14. Postpartum HTN is defined as new onset (de novo) or persistent elevation after delivery and up to 6 months postpartum.
15. There is no definitive BP target for postpartum HTN.

AATS: Mechanical Support and Thoracic Transplantation Summit

https://events.aats.org/mechanical-25/program

1. Futility: assigning futility is best describe on a spectrum
2. Pre-ECMO and during ECMO predictors can be helpful, but are anything but perfect.
3. Regardless, developing consensus with your patient/patient family to chart a path forward

requires communication and hand holding on a daily basis and starts ECMO day 0.

4. Historically phrenic nerve injury/Diaphragm Dysfunction (PNI/DD) leads to prolonged mechanical ventilation (MV), higher pneumonia rates, increased use of NIV.
5. PNI/DD can lead to BLAD which increases mortality.
6. Diaphragm pacing was successful in reversing PNI/DD in 84% of patients
7. Experienced ECMO and Lung transplant center
8. Early referral for lung transplant
9. Bridge eligible patients before decompensation
10. Choice of ECLS configuration depends on patient status
    i. Main goal=off-load RV
11. Liberal use of Post-op ECMO after lung transplantation- The Columbia Protocol
12. ECMO bridge to transplant is no longer salvage- It's a planned strategy
13. Awake, extubated, and ambulatory ECMO improves outcomes.
14. Survival is comparable to non-ECMO patients when managed in expert centers.
15. Build Shock Team by identifying vision, strategy, and tactics
16. Outline workflows
17. Review not just outcomes but processes
18. Tailored approach to cardiogenic shock likely to improve outcomes, including:
    i. Shock "Teaming"
    ii. Early placement of tMCS
    iii. Active device tailoring to achieve an ambulatory, ventricular specific, unloading platform
19. Neurological injury (HIBI: hypoxic-ischemic brain injury) is a major outcome in patients with ECPR; on ECMO brain injury in addition to HIBI is common.
20. Primary brain injury in ECPR: cannulation time, system of care, and engineering development/refinement.
21. Secondary brain injury
    i. All drug therapy with different mechanisms failed for neuroprotection but ICU care matters
    ii. O2, CO2, cerebral autoregulation and TTM (hypothermia)
    iii. TTM: benefit of immediate hypothermia vs. multiorgan injury in improving overall outcomes; cold war continues
    iv. Early detection of ABI and timely neurological care can improve outcomes->Early imaging is the key!
22. The successful of first U.S. en-bloc heart and lung rapid recovery combined with A-NRP demonstrates that this technique is both feasible and safe.
23. The excellent organ viability and minimal bleeding highlight the critical importance of strong coordination and collaboration among thoracic and abdominal teams.
24. While both heart and lung were procured by the same team, this success demonstrates that,

with careful planning, open communication, and strong collaboration, the procedure can be equally successful when performed by different thoracic recovery team.

25. This case exemplifies how meticulous teamwork can help expand the donor pool and improve transplant success.
26. Who not to transplant????Really tell them we transplant everyone.
27. Cadaveric lobar transplant is indicated in cases of oversized grafts or injured donor lobes.
28. Volume size matching using CXR is useful, but the final decision must be made intraoperatively.
29. Downsizing lobectomy should be performed on the back table prior to implantation.
30. A bronchial stump should not remain in the donor graft, but leaving a stump in the recipient is acceptable.
31. Predicted vital capacity-based size matching is valuable to avoid implantation of excessively small grafts.
32. Various donor lobes can be resected and implanted.
33. Clinical outcomes of cadaveric lobar lung transplant are promising.
34. Vascular anastomic complications are associated with significant morbidity and mortality.
35. More common in recipients with previous lung surgery involving the hilum, restrictive lung disease, female.
36. Prognosis depends on early diagnosis, type of complication, time elapsed after transplantation, clinical status of the patient, and selection of the most appropriate therapy.
37. Avoiding the complication is better than having fancy tricks to fix it.