出國報告（其他類別：國際會議）

第 56 屆歐洲糖尿病學會年會
線上會議

European Association for the Study of Diabetes
2020

服務機關：臺中榮民總醫院埔里分院

姓名職稱：賴韻如 主治醫師

派赴國家/地區：線上會議

出國期間：2020/9/21-2020/9/25

報告日期：2020/10/06

目 次

一、 摘要

歐洲糖尿病學會(European Association for the Study of Diabetes, EASD)是一個非盈利的醫學科學學會。它成立於 1965 年，總部設在德國杜塞爾多夫(Düsseldorf)。EASD 是世界上最大的糖尿病專家網路之一，擁有來自世界 130 多個國家的 5000 多名活躍會員。會員包括來自世界各地對糖尿病或相關疾病感興趣的科學家、醫生、學生、博士後和研究員、專職衛生專業人員和護士、衛教師。EASD 旨在通過提供有關糖尿病研究的進展和資訊，提供糖尿病科學研究、教育、診療技術發展、進而達到預防和治療糖尿病、改善糖尿病患者生活品質的目標。

2020 年 9 月 21 日~25 日，歐洲糖尿病研究協會年會(EASD)第 56 屆科學年會因應新冠肺炎疫情，改為線上會議。年會聚集來自全世界 130 多個國家、參與糖尿病研究和管理的 15,000 餘名科學家和醫療專業人員。年會以糖尿病基礎科學及預防、診斷和治療中的重大進展為特色，內容涵蓋糖尿病領域的各種研究。

二、 目的

本次參加 EASD 第 56 屆科學年會線上會議，旨在代表醫院參加國際糖尿病會議，促進國際交流與合作研究，提升醫院學術地位及聲譽。

三、 過程

本屆年會在 EASD 名譽主席 Stefano Del Prato 的帶領下，大會組委會共計從投稿的兩千多篇摘要中篩選出一千多篇展示糖尿病領域的最新成果。大會內容形式多樣豐富多彩，既包括精彩激烈的專題討論，又包括口頭及壁報展示，旨在表彰傑出研究人員突出成就的幾大獲獎講座更是值得期待、不容錯過。

2020 歐洲糖尿病研究協會（EASD）年會公布了 DiRECT(Diabetes UK-funded Diabetes Remission Clinical Trial)研究結果。研究顯示，逆轉的糖尿病人胰腺在逐步恢復正常的形態與大小，說明了 2 型糖尿病的逆轉不僅是功能的恢復，在生理形態也在恢復，有機會走向治癒。英國糖尿病協會研究主席 Robertson 博士甚至表示：2 型糖尿病不是終身性疾病！

一、第 2 型糖尿病人胰腺比正常人小

根據研究開始的檢查，2 型糖尿病人的胰腺的尺寸減小、形態異常。與血糖正常的對照組相比，2 型糖尿病患者的胰腺平均小 20%（對照組平均為 80 立方厘米，糖尿病組為 64 立方厘米），而且胰腺邊界也不規則。這些從大小、形態的改變，說明 2 型糖尿病人的胰腺的整體功能要比正常人顯著不足。過去我們推出肥胖的 2 型糖尿病人應該肥大，類似脂肪肝一樣，但是這項研究發現胰腺是萎縮了。

二、胰腺恢復需要漫長的 2 年時間

研究發現，就算經過 5 個月的減肥，血液檢查發現胰島分泌已經達標，但是胰腺體積沒有出現明顯變化。但是，經過兩年的恢復，逆轉的糖尿病人的胰腺體積從 63 立方厘米增加到了 76 立方厘米，而且脂肪含量也從 1.6%減少到了 0.5%，接近正常水平。同時，血液檢查也發現，胰島 β 細胞的功能在持續改善，胰島素（特別是第一時相，也就是餐後迅速釋放）釋放增加。也就是說，第 2 型糖尿病人通過逆轉，胰腺從功能到形態都恢復了，但是需要長期堅持。

四、 心得

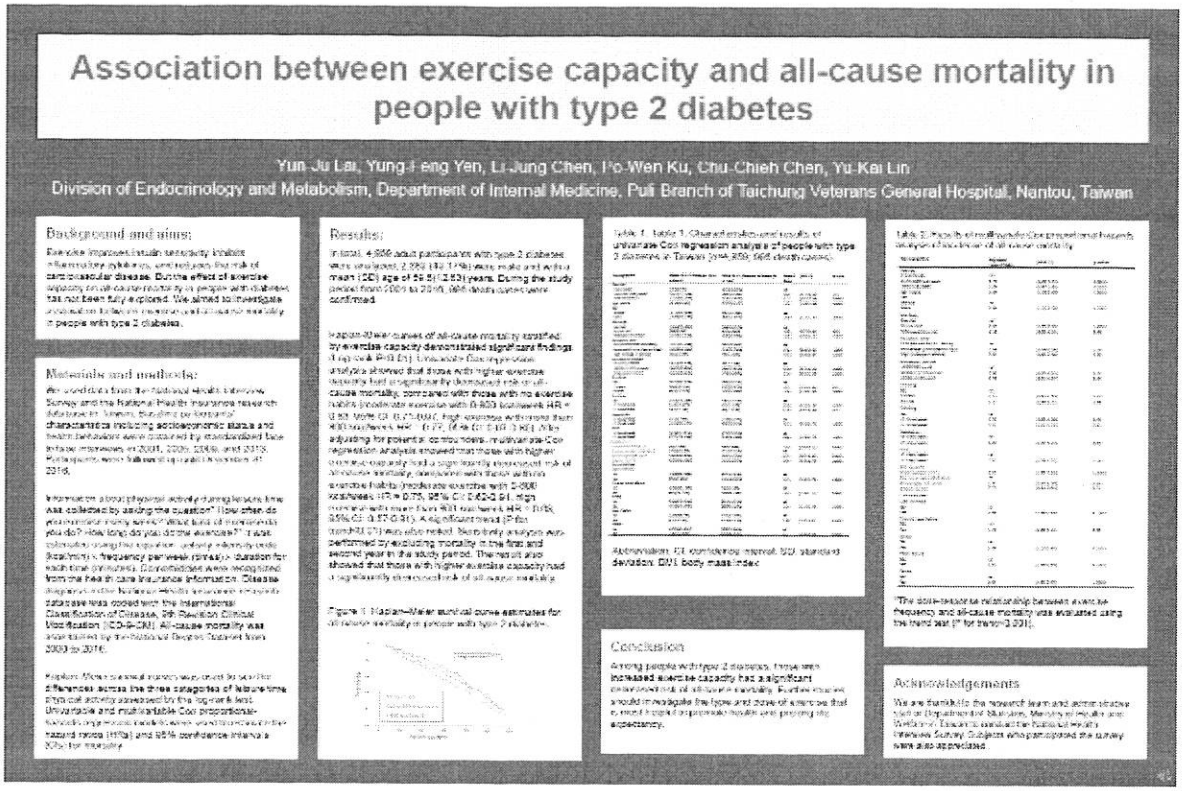
本次會議的參與，除了吸收新知，了解最新的研究發展方向，也增進與世界各地的專家學者之交流，尋找未來研究方向與合作機會。透過了意見的交換，提昇國際視野，體察了先端研究之方向及進展，收穫匪淺。不論是基礎研究、流行病學研究、藥物研發、血糖監測系統，均有日新月異的進展，讓我深深體會到學如逆水行舟，不進則退，未來需要更加持續努力，才能跟上世界的進步與發展。

五、 建議

有此機會參與本次國際研討會議，所吸收到的經驗與新知，十分寶貴，將落實於日後的醫療照護與醫學研究。因此，建議本院人員有機會多多參加國內和國際的大型會議，相信對自己的研究領域、論文撰述能力與活動實施將有實質助益，同時，更能透過交流與互動，進一步擴大國際視野與世界觀。

六、 附錄

海報論文：



Association between exercise capacity and all-cause mortality in people with type 2 diabetes

Yun-Ju Lai, Yung-Feng Yen, Li-Jung Chen, Po-Wen Ku, Chu-Chieh Chen, Yu-Kai Lin
Division of Endocrinology and Metabolism, Department of Internal Medicine, Puli Branch of Taichung Veterans General Hospital, Nantou, Taiwan

Background and aims:

Exercise improves insulin sensitivity, inhibits inflammatory cytokines, and reduces the risk of cardiovascular disease. But the effect of exercise capacity on all-cause mortality in people with diabetes has not been fully explored. We aimed to investigate the association between exercise capacity and mortality in people with type 2 diabetes.

Materials and methods:

We used data from the National Health Interview Survey and the National Health Insurance research database in Taiwan. Sociodemographic characteristics including socioeconomic status and health behaviors were obtained by standardized face-to-face interviews in 2001, 2005, 2009, and 2013. Participants were followed up until the end of 2016.

Information about physical activity during leisure time was collected by asking the question "How often do you exercise during your spare time and it makes you sweat? How long do you do the exercise?" Total metabolic energy consumption (kcal/week) = frequency per week (times/) × duration for each time (minutes). Comorbidities were recognized from one year in care insurance information. Disease diagnosis codes in the National Health Insurance research database was coded with the International Classification of Disease, 9th Revision Clinical Modification (ICD-9-CM). All-cause mortality was ascertained by the National Death Register from 2003 to 2016.

Kaplan-Meier survival curves were used to examine differences across the three categories of leisure-time physical activity assessed by the log-rank test. Univariate and multivariable Cox proportional-hazards regression models were used to estimate the hazard ratios (HRs) and 95% confidence intervals (CIs) for mortality.

Results:

In total, 4,606 adult participants with type 2 diabetes were analyzed, 2,359 (51.21%) were male and with a mean (SD) age of 56.5 (12.43) years. During the study period from 2005 to 2016, 996 deaths were confirmed.

Kaplan-Meier curves of all-cause mortality stratified by exercise capacity demonstrated significant findings (Log-rank P<0.001). Univariate Cox regression analysis showed that those with higher exercise capacity had significantly decreased risk of all-cause mortality, compared with those with no exercise habits (moderate exercise with 0-500 kcal/week: HR = 0.83, 95% CI: 0.71-0.96; high exercise with more than 500 kcal/week: HR = 0.77, 95% CI: 0.67-0.90). After adjusting for potential confounders, multivariate Cox regression analysis showed that those with higher exercise capacity had a significantly decreased risk of all-cause mortality, compared with those without exercise habits (moderate exercise with 0-500 kcal/week: HR = 0.75, 95% CI: 0.62-0.91; high exercise with more than 500 kcal/week: HR = 0.68, 95% CI: 0.57-0.81). A significant trend (P for trend<0.001) was also noted. Sensitivity analysis was performed by excluding mortality in the first and second year in the study period. The result also showed that those with higher exercise capacity had a significantly decreased risk of all-cause mortality.

Figure 1. Kaplan–Meier survival curve estimates for all-cause mortality in people with type 2 diabetes.

Table 1. Table 1. Characteristics and results of univariate Cox regression analysis of people with type 2 diabetes in Taiwan (n=4,606; 996 deaths during...

Abbreviation: CI, confidence interval; SD, standard deviation; BMI, body mass index

Table 2. Results of multivariable Cox proportional hazards analysis of association of all-cause mortality

The dose-response relationship between exercise frequency and all-cause mortality was evaluated using the trend test (P for trend<0.001).

Conclusion

Among people with type 2 diabetes, those with increased exercise capacity had significant decreased risk of all-cause mortality. Further studies should investigate the types and doses of exercise that could help and promote health and prolong life expectancy.

Acknowledgements

We are thankful to the research team and administrative staff in Department of Statistics, Ministry of Health and Welfare, Executive Yuan for the Public Health Interview Survey. Subjects who participated the survey were also appreciated.