出國報告審核表

106年8月修正版

出國報告名稱：15th Annual Conference for Society of Chinese Scholars on Exercise Physiology and Fitness			
出國人姓名 （2人以上，以1人為代表）		職稱	服務單位
周峻忠		助理教授	國立臺北科技大學體育室
出國類別	□考察 □視察 □訪問 □開會 □談判 □研究 □進修 □實習 ■其他 國際學術研討會 （例如國際學術研討會、國際比賽、業務接洽等）		
出國期間：105年07月21日至105年07月22日			報告繳交日期：106年10月17日
經費年度：106	預算金額：4791		聯絡人 email： longer0206@gmail.com
經費來源：■本校□其他政府機關□其他單位或基金(其他單位名稱：)			

出國人員自我檢核	計畫主辦機關審核	審　核　項　目
■	☑	1.依限繳交出國報告
■	☑	2.格式完整（本文必須具備「目的」、「過程」、「心得及建議事項」）
■	☑	3.無抄襲相關資料
■	☑	4.內容充實完備
■	☑	5.建議具參考價值
■	☑	6.送本機關參考或研辦
■	☑	7.送上級機關參考
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□	□	9.本報告除上傳至出國報告資訊網外，將採行之公開發表：
□	□	（1）辦理本機關出國報告座談會（說明會），與同仁進行知識分享。
□	□	（2）於本機關業務會報提出報告
□	□	（3）其他
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出國人簽章（2人以上，得以1人為代表）	計畫主辦機關單位主管簽章	人事室	機關首長或其授權人員簽章
助理教授 周峻忠	體育室 主任 鍾	1061030 人事室 主任 鄒麗華	處理黎文 長

說明：

一、本表依程序奉核後請將出國報告上傳至「國立大專校院出國報告資訊網」(http://nureport.moe.gov.tw)，審核完畢之本表及出國報告請自行留存。

二、審核作業應儘速完成，以不影響出國人員完成出國報告上傳為原則。

出國報告（其他類別：國際會議）

15th Annual Conference for Society of Chinese Scholars on Exercise Physiology and Fitness

服務機關：國立臺北科技大學體育室
姓名職稱：周峻忠 助理教授
派赴國家：香港
出國期間：**2016/07/21-22**
報告日期：**2017/10/17**

摘要

Periodic Changes of Hormonal Profile and Insulin Sensitivity in Elite Male Taekwondo Athletes

Chun-Chung Chou [1], Yu-Chi Sung [2], Wei-Chung Lin [1],Chieh-Min Fang[3]

1. National Taipei University of Technology, Physical Education Office, Taipei, Taiwan
2. Chinese Culture University, Graduate Institute of Coaching Science, Taipei, Taiwan
3. Chang Jung Christian University, Department of Athletics Sports, Tainan, Taiwan

Objective

The aim of this study was to investigate the time course of changes of serum testosterone (T), cortisol (C), dehydroepiandrosterone sulfate (DHEA-S), insulin and blood glucose during two-week taper, immediately after match, and two-week recovery in elite male taekwondo athletes.

Methodology

Eight male taekwondo athletes competing at national level (age: 20.9 ± 0.3 yrs, BMI: 22.0 ± 0.7 kg/m^2) participated in this study. The fasting blood samples were collected at two weeks before match (BM), one day after match (AM) and 2 weeks post-match recovery (PM). The blood glucose was evaluated using portable glucose meter, and the serum levels of insulin, testosterone (T), cortisol (C), and dehydroepiandrosterone sulfate (DHEA-S, D) were measured using commercial ELISA kits. The insulin and blood glucose were used to calculate the homeostatic model assessment of insulin resistance index (HOMA-IR index).

Results & Discussion

The T/C ratio (AM: 0.24 ± 0.01, PM: 0.30 ± 0.03) and HOMA-IR (AM: 1.90 ± 0.21, PM: 1.44 ± 0.17) were significantly lower at AM than PM ($p < 0.05$) but the T/C ratio, D/C ration and HOMA-IR were no difference between BM and AM. The physiological stress status, reflecting by the T/C and D/C ratios, were comparable between tapering and competitive periods, whereas the stress level was rapidly declined at 2-weeks post-competitive recovery. In addition, the insulin sensitivity appeared at impaired state before and during match period, but this situation would improve after two weeks recovery.

Conclusion

We demonstrated, that, in the elite male Taekwondo athletes, the physiological stress status and insulin resistance index were comparable between tapering and competitive periods, whereas the stress level was markedly lower and insulin sensitivity was improved at 2-weeks post-competitive recovery.

Key words: anabolic hormone, insulin sensitivity

目次

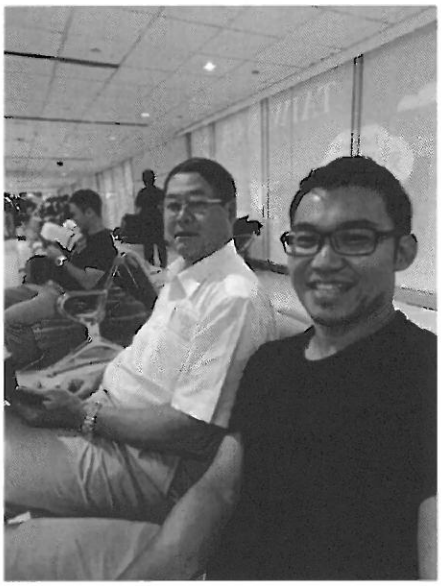
本文

壹、目的

參加2016/07/21-22年於香港浸會大學所舉辦的15th Annual Conference for Society of Chinese Scholars on Exercise Physiology and Fitness。

貳、過程

在前往參與15th Annual Conference for Society of Chinese Scholars on Exercise Physiology and Fitness，除了筆者本身有的發表為 Periodic Changes of Hormonal Profile and Insulin Sensitivity in Elite Male Taekwondo Athletes，並與國立台北護理健康大學運動保健系廖翊宏老師所率領的研究團隊並有合作，合作題目為 Effects of Carbohydrate Supplementation on Exercise Performance and Cerebral Tissue Oxygenation During Acute Exhaustive Exercise Under Normobaric Hypoxia。而這2篇研究均是採用海報形式，來進行發表與交流。為期2天的研討會過程，除了與台灣各地區的學者們相見歡之外，並與許多海外學者進行請教與交流。



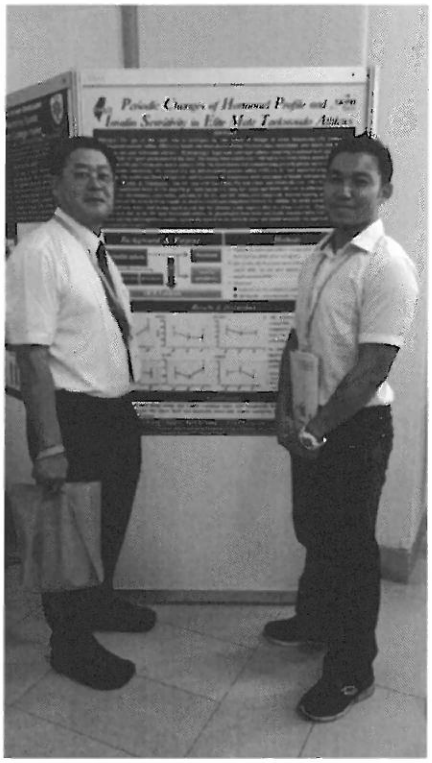
圖一 出發時在桃園國際機場巧遇也將前晚研討會之林政長教授。

圖二 會議中與司波特企業之執行長相見甚歡。

參、心得

本次大會主題: Active Aging, Quality of Life and Physical Activity as Medicine: Where is the Science? 內容涵蓋多元，並且貼近時下流行之穿戴裝置，並結合了「老化」這個議題，如何在現今多國面臨老化人口比例上生的情形之下，透過政策與運動健康之配合，開創與製造出優質且有品質之環境，提供老化人口之健康，並減少醫療經費之開銷。會議中多場演講並探討到需要大規模改變過去用於規劃一老齡化人口的模式。新興的全球老齡化團隊將

需要創新與開創的策略來優化健康、教育、居住、公民參與、交通和必要的健保。本次會議提供了 ACTIVE AGING 最全面定義。



圖三 筆者進行海報發表並與林正常教授合影

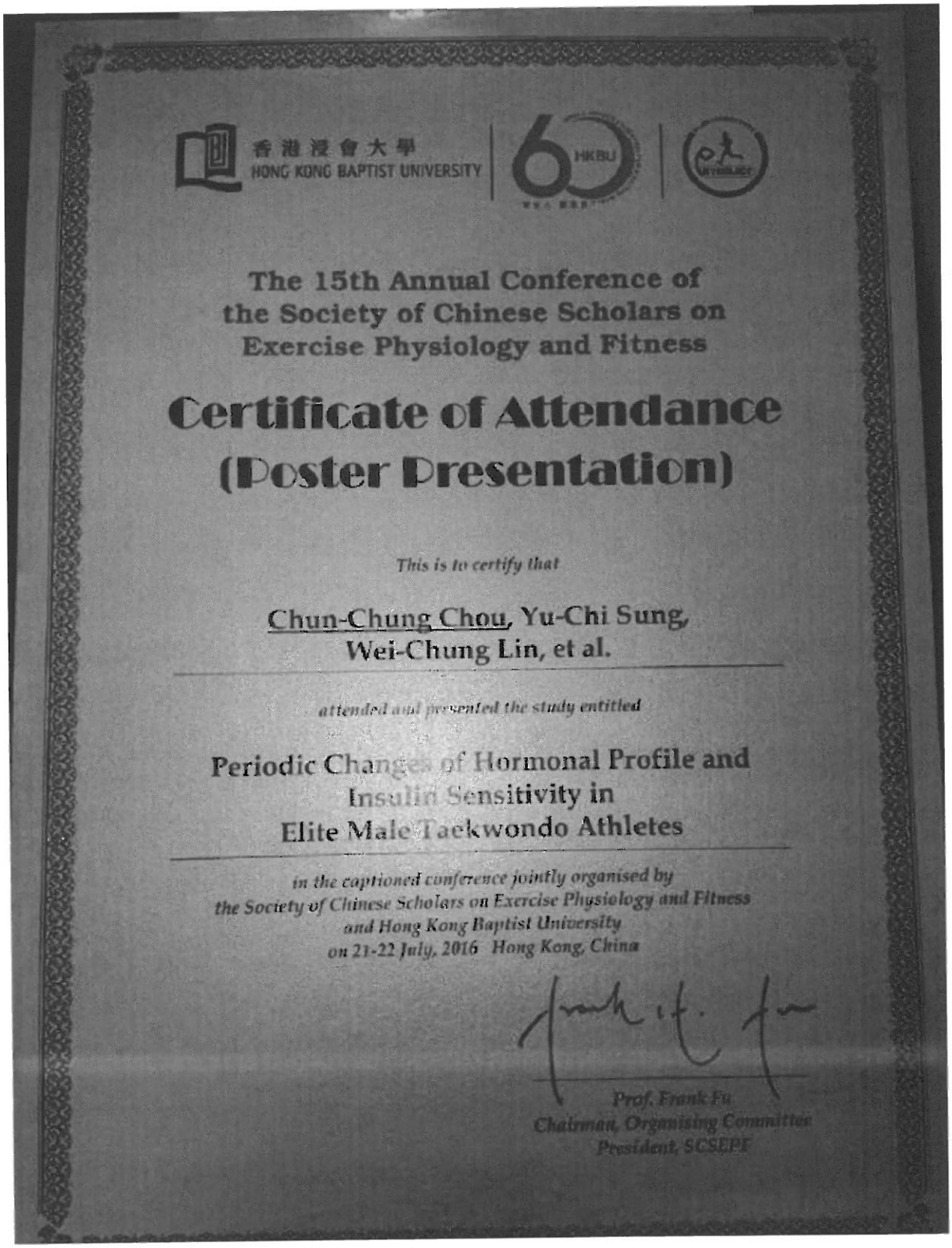
圖四 筆者參與 Dr. Mark P. Kelly 之工作訪

圖五 筆者與國立臺北護理健康大學之研究團隊共同合影

肆、建議事項

由衷感謝國立臺北科技大學能補助筆者前往參與本次會議，過程中收穫良多，且與諸多國際學者間互動良好並開啟合作管道。希冀往後仍能有機會再去參與國際研討會，並提升與國際接軌之動能。

發表證明



香港浸會大學
HONG KONG BAPTIST UNIVERSITY

HKBU

The 15th Annual Conference of
the Society of Chinese Scholars on
Exercise Physiology and Fitness

Certificate of Attendance
(Poster Presentation)

This is to certify that

Chun-Chung Chou, Yu-Chi Sung,
Wei-Chung Lin, et al.

attended and presented the study entitled

Periodic Changes of Hormonal Profile and
Insulin Sensitivity in
Elite Male Taekwondo Athletes

in the captioned conference jointly organised by
the Society of Chinese Scholars on Exercise Physiology and Fitness
and Hong Kong Baptist University
on 21-22 July, 2016 Hong Kong, China

Prof. Frank Fu
Chairman, Organising Committee
President, SCSEPF

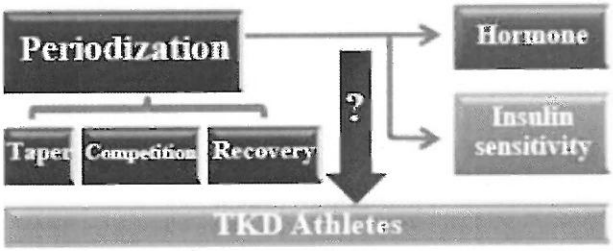
發表海報

Periodic Changes of Hormonal Profile and Insulin Sensitivity in Elite Male Taekwondo Athletes

Abstract

Objective: The aim of this study was to investigate the time course of changes of serum testosterone (T), cortisol (C), dehydroepiandrosterone sulfate (DHEA-S), insulin and blood glucose during two-week taper, immediately after match, and two-week recovery in elite male taekwondo athletes. *Methodology*: Eight male taekwondo athletes competing at national level (age: 20.9 ± 0.3 yrs, BMI: 22.0 ± 0.7 kg/m²) participated in this study. The fasting blood samples were collected at two weeks before match (BM), one day after match (AM) and 2 weeks post-match recovery (PM). The blood glucose was evaluated using portable glucose meter, and the serum levels of insulin, testosterone (T), cortisol (C), and dehydroepiandrosterone sulfate (DHEA-S, D) were measured using commercial ELISA kits. The insulin and blood glucose were used to calculate the homeostatic model assessment of insulin resistance index (HOMA-IR index). *Results & Discussion*: The T/C ratio (AM: 0.24 ± 0.01, PM: 0.30 ± 0.03) and HOMA-IR (AM: 1.90 ± 0.21, PM: 1.44 ± 0.17) were significantly lower at AM than PM ($p < 0.05$) but the T/C ratio, D/C ration and HOMA-IR were no difference between BM and AM. The physiological stress status, reflecting by the T/C and D/C ratios, were comparable between tapering and competitive periods, whereas the stress level was rapidly declined at 2-weeks post-competitive recovery. In addition, the insulin sensitivity appeared at impaired state before and during match period, but this situation would improve after two weeks recovery. *Conclusion*: We demonstrated, that, in the elite male Taekwondo athletes, the physiological stress status and insulin resistance index were comparable between tapering and competitive periods, whereas the stress level was markedly lower and insulin sensitivity was improved at 2-weeks post-competitive recovery.

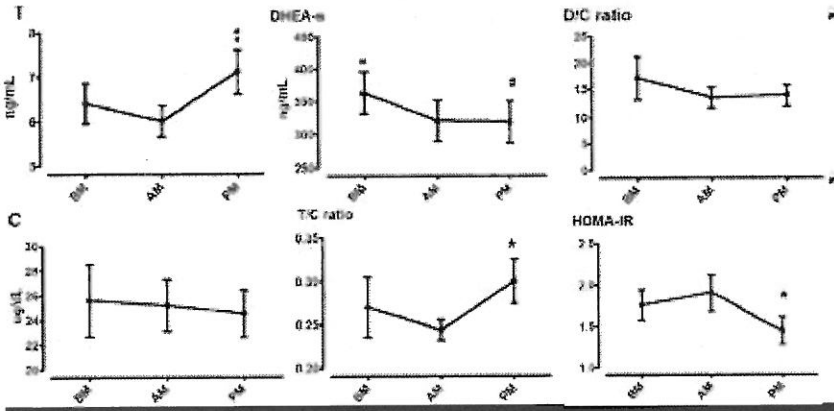
Background & Purpose



Methods

- Eight male taekwondo athletes competed at national level (age: 20.9 ± 0.3 yrs, BMI: 22.0 ± 0.7 kg/m²).
- The fasting blood samples were collected at two weeks before match (BM), one day after match (AM) and 2 weeks post-match recovery (PM).
- We tested:
  - testosterone (T), cortisol (C), and DHEA-S
  - HOMA-IR = [Glucose (mM) x insulin (mU/L) / 22.5]

Results & Discussion



- The physiological stress status were comparable between tapering and competitive periods, whereas the stress level was rapidly declined at 2-weeks post-competitive recovery.
- In addition, the insulin sensitivity appeared at impaired state before and during match period, but this situation would improve after two weeks recovery.

* denotes the significant difference when compared with AM.
# denotes the significant difference when compared with BM.

Conclusion

- The physiological stress status and insulin resistance index were comparable between tapering and competitive periods, whereas the stress level was markedly lower and insulin sensitivity was improved at 2-weeks post-competitive recovery.

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SCSEPF 2016

The 15th Annual Conference

21-22 July, Hong Kong

Theme: Active Aging, Quality of Life and Physical Activity as Medicine: Where is the Science?

Conference Proceedings

第十五屆華人運動生理及體適能學者學會週年大會

論文集

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