Outstanding research paper awards of the 2015 Taiwanese Journal of Obstetrics and Gynecology

In this issue of the Journal, we are pleased to introduce the winners of the 2015 Taiwanese Journal of Obstetrics and Gynecology (TJOG) Outstanding Research Paper Award. The awards were selected from among research papers published in the 2015 print issues of the TJOG. The 2015 TJOG Outstanding Research Paper Golden Award winner was Dr. Wang, for his research paper entitled “The role of nitric oxide in the outgrowth of trophoblasts cells on human umbilical vein endothelial cells” [1]. The 2015 TJOG Outstanding Research Paper Silver Award winner was Dr. Chen, for her research paper entitled “Iron stores and obesity are negatively associated with ovarian volume and anti-Müllerian hormone levels in women with polycystic ovary syndrome” [2]. Both winners received their honors at the Annual Meeting of the Taiwan Association of Obstetrics and Gynecology on March 5, 2016 and March 6, 2016, held in Taipei, Taiwan.

The golden award-winning research article was published in the June 2015 issue. This article was cooperated by two institutes to finish this work, including two directors of the reproductive medicine in both institutes [Dr. Kuan Hao Tsui and Dr. Hsin-Yang Li]. The results showed that N(G)-nitro-L-arginine methyl ester hydrochloride (L-NAME), a competitive inhibitor of nitric oxide synthase (NOS), could diminish spheroid expansion on human umbilical vein endothelial cell (HUVEC) monolayers in a concentration-dependent manner (p < 0.05), suggesting the importance of nitric oxide (NO) availability. However, a higher dose (1mM) of sodium nitroprusside (SNP), an NO donor, significantly suppressed spheroid expansion, suggesting that the overproduction of NO might impede the normal interaction between trophoblast and HUVEC [1]. The study further showed that trophoblast spreading on HUVEC-free culture surface was not affected by NOS inhibitor or NO, confirming that NO is needed on the interaction between trophoblast and HUVEC. Taken together, the authors concluded that the interaction of trophoblasts and HUVEC is dependent on an adequate and approximate NO-containing environment, and either over or under NO environment will deteriorate the interaction between trophoblast and HUVEC [1].

The silver award-winning research article by Dr. Mei-Jou Chen was published in the December 2015 issue [2]. The authors found that polycystic ovary syndrome (PCOS) women with obesity had significantly higher ferritin, and lower anti-Müllerian hormone (AMH) levels than PCOS women without obesity. In the earlier August 2015 issue, Drs. Ming-I Hsu and Chun-Sen Hsu published a similar paper, but this article focused on the relationship between serum ferritin levels and PCO-related complication [3]. The results showed that the correlation of serum ferritin levels and PCO-related complication is strong and positive in PCO women with obesity, but not in PCO women with a normal body weight, because elevated serum ferritin levels were associated with an increased insulin resistance and an increased risk of diabetes mellitus (DM), but this association is only apparent in the obesity group [3]. In fact, both Drs. Chen and Hsu’s studies proposed that “iron overload” (elevated serum ferritin levels) might be common in PCO patients; however, it is often neglected in clinical practice. Based on the findings of both studies, evaluation of patients with PCO for anemia and/or iron metabolism might be important. It is well known that uncontrolled iron overload is associated with serious clinical consequences and further results in considerable morbidity and mortality, regardless of gender [4]. This deteriorated health effect of “iron overload” is also apparent in children [4]. The iron overload-related complications included liver damage, cardiac disease, and endocrine dysfunction. Among the category of endocrine dysfunctions, DM might be one of the most common and important “iron-overload”-related complications. Both articles in the 2015 print issues of the TJOG confirmed the positive correlation between “iron-overload” and insulin resistance or DM [2,3], suggesting that the management of PCO women is complicated and needs more attention [5].

In general, subfertility is commonly reported in PCO women, according to long-term anovulation [6]. However, neither impaired ovarian function nor decreased ovarian reserve has been recognized in PCO women. By contrast, PCO women often had a higher level of AMH compared with healthy controls did [7], suggesting the ovarian reserve might be better in PCO women. AMH is a good indicator to predict the ovarian function and ovarian reserve, with higher levels of AMH for better ovarian reserve and function [7]. Dr. Chen found that “iron-overload” might be associated with lower serum levels of AMH in these PCO women with obesity, hinting to us the possibility these PCO women might have a potential risk of declining ovarian reserve and function, especially for those PCO women with obesity. Based on the fact that overstimulation of the ovary is much more frequent in PCO women than in normal controls when ovulation induction is applied and the observation of low levels of AMH in PCO women with obesity, it suggested that we should pay close attention to the use of assisted reproductive techniques for those PCO women who need ovulation-induction protocols.

We are also happy to introduce the winner of the best paper award of Professor Lee Tzu-Yao’s Foundation for Reproductive

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Medicine, and this honor is also given to Dr. Mei-Jou Chen. In fact, Dr. Mei-jou Chen is the biggest winner at the Annual Meeting of the Taiwan Association of Obstetrics and Gynecology because she obtained two awards this year. In this excellent award, the title of this article is "The effect of androgens on ovarian follicle maturation: dihydrotestosterone suppress FSH-stimulated granulosa cell proliferation by upregulating PPARγ-dependent PTEN expression", which evaluated the effect of androgens on ovarian follicle maturation [8]. The authors found that the dihydrotestosterone (DHT)-treated rats had fewer estrus cycles, higher numbers of large arrested follicles, and an increase in body weight gain compared with dehydroepiandrostenedione (DHEA)- and placebo-treated rats. Further dissecting the mechanism, the authors found that alternation of granulosa cell proliferation might be a key component, and this was mediated through the regulation of enhancing peroxisome proliferator-activated receptor gamma-dependent phosphatase and tensin homolog deleted on chromosome 10/phosphorylated protein kinase B (PPARγ dependent PTEN/p-Akt) expression in the granulosa cells. Dr. Chen's study demonstrated that chronic exposure of DHT or DHEA induces differential effects on body weight change, visceral and subcutaneous fat, and metabolic abnormalities in prepubertal female rats, and showed that only DHT treatment deteriorated the ovarian function [8]. Although their study did not directly support the theory that DHEA might be beneficial for women with poor responders, however, at least, the authors indirectly supported the view that the effect of DHEA on ovarian function might not be totally mediated through the classic way of androgen—androgen receptor (DHT—a most potent ligand for androgen receptor). Based on our previous studies [9–11], DHEA could be applied in women with poor responders, because of its potential benefit in these women with poor responders.

We are pleased to congratulate both of our award-winning doctors on their winning of the TJOG Outstanding Research Article Award, especially Dr. Chen for her extremely important contribution to global health problems—polycystic ovary syndrome. Finally, we welcome the authors' or readers' continuing interest and contribution to the TJOG [12,13].

Conflicts of interest

Both authors declare no conflict of interest.

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References