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Editorial

Outstanding female cancer research paper awards of the 2018 Hsu Chien-Tien Cancer Foundation



In this May issue of the journal, we are glad to introduce the winners of the 2018 Hsu Chien-Tien Cancer Foundation Outstanding Female Cancer Research Paper Awards, which were selected from among research papers addressing female cancers and being published in 2018, and the first author should be a member of the *Taiwan Association of Obstetrics and Gynecology* (TAOG), as shown before [1]. The 2018 golden award winner is Dr. Huang, for her excellent research paper entitled “Vitamin D-binding protein enhances epithelial ovarian cancer progression by regulating the insulin-like growth factor-1/Akt pathway and vitamin D receptor transcription” [2]. The 2018 silver award winner is Dr. Chen, for his research paper entitled “Immuno-modulators enhance antigen-specific immunity and anti-tumor effects of mesothelin-specific chimeric DNA vaccine through promoting DC maturation” [3]. The 2018 copper award winner is Dr. Chao, for her research paper entitled “Genomic scar signatures associated with homologous recombination deficiency predict adverse clinical outcomes in patients with ovarian clear cell carcinoma” [4]. All winners received their honors at the *Annual Meeting of the Taiwan Association of Obstetrics and Gynecology* on March 9 and 10, 2019, held in Tainan, Taiwan.

The golden award-winner found the important role of vitamin D-binding protein (DBP) in patients with epithelial ovarian cancer (EOC), and it's upregulated (overexpressed) not only affecting therapeutic effect (increased chemoresistance) but also contributing to worse prognosis (shortening progression-free survival [PFS] and overall survival [OS]) [2]. In addition, the authors provided the evidence DBP inhibited the binding of NF- κ B p65 to the vitamin D receptor (VDR) promoter to regulate VDR by activating the insulin-like growth factor-1/insulin-like growth factor-binding protein 2/Akt axis, resulting in suppression of vitamin D-responsive genes [2]. In fact, this finding is not new since vitamin D and its analogs are essential minerals in human health, and overwhelming evidence indicates that vitamin D deficiency not only is directly harmful on skeletal system, but also enhances development and progression of many lethal diseases, such as cardiovascular diseases, diabetes, autoimmune disease, and cancer [5,6]. Vitamin D and its compounds have antiproliferative, pro-apoptotic, anti-cell migration and antiangiogenic activity in a number of preclinical studies in many different cancer types [6,7]. However, epidemiological and randomized control trials in humans do not yet show a conclusive support a definite beneficial role of vitamin D as an economical and safe way to reduce cancer incidence and improve cancer prognosis and outcome [7], but the current study might add evidence to show the need of adequate vitamin D supplement for the human health [8].

The silver award-winning research article by Dr. Chen YL on the hottest topic exploring the role of immune-modulator [3]. The authors generated a chimeric DNA vaccine using antigen-specific connective tissue growth factor lined with mesothelin (CTGF-MSLN) and combined CTGF-MSLN with anti-CD40 antibody and toll-like receptor (TLR) 3 ligand-poly(1:C) in the test for tumor-implanted animal model [3]. Results showed immune-modulator could enhance the antigen-specific vaccination effect [3]. The idea of the current study is not new, since it is well known that enhanced immune-response (increasing antibody formation or titers) need an adjuvant, such as aluminum salts, emulsions such as MF59 and AS03, TLR agonists (CpG or monophosphoryl lipid A (MPL) adsorbed on aluminum salts as in AS04) or combination of immunopotentiators (QS-21 and MPL in AS01) [9]. All share some key characteristics, including the induction of early activation of innate immunity with higher antibody and cellular response to the vaccine antigens, the induction of a wider breadth of adaptive responses able to confer protection against vaccine antigen [9].

The copper award-winning research article by Dr. Angel Chao who used genomic scar signature associated with homologous recombination deficiency (HRD) to predict the outcome of patients with ovarian clear cell carcinoma (OCCC) [4]. The main findings included (1) OCCC has less frequency for genomic scar signature associated with HRD, but presence of both is highly correlated with worse prognosis of the patients; (2) among three types of genomic scar signature associated with HRD, loss of heterozygosity (LOH) is most powerful prognostic factor contributing to the worse outcome [4]. OCCC, one of the endometriosis-associated epithelial ovarian carcinomas (E-EOC) [10–12], often presents as an early-stage disease but relative chemo-resistance and worse outcomes compared to other histologic types of EOC. In addition, the successful treatment of new agents, such as poly(ADP-ribose) polymerase (PARP) inhibitors and immunotherapy or targeted therapy for EOC is often based on the presence of changes of genomic signature (BRCA mutation, HRD) [13,14]. The current study confirmed the less frequency of BRCA mutation and HDR in the patients with OCCC [4]. However, these rare events, especially LOH are still strongly associated with worst prognosis in OCCC patients [4]. Although many trials are ongoing to evaluate the effectiveness of PARP inhibitors on prolonged PFS and OS in EOC, unfortunately, the subjects of these trials are often limited to high-grade serous type EOC [15]. Based on Dr. Chao's report [4], reconsideration of the use of PARP inhibitors in the management of patients with OCCC, especially for those with HRD is needed. These efforts may identify more settings and populations in which these new agents can provide much more clinical benefit.

We are pleased to congratulate three award-winning doctors on their excellent works on the study of female cancers and believe the continuous support of the society, foundation, public, government, and doctors, can provide a better care of women living in Taiwan.

Conflicts of interest

All authors declare no conflict of interest.

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Peng-Hui Wang*

Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taipei, Taiwan

Department of Obstetrics and Gynecology, Institute of Clinical Medicine, National Yang-Ming University, School of Medicine, Taipei, Taiwan

Department of Medical Research, China Medical University Hospital, Taichung, Taiwan

Pei-Fen Lo

Department of Nursing, Taipei Veterans General Hospital, Taipei, Taiwan

Chih-Ping Chen

Department of Obstetrics and Gynecology, National Yang-Ming University, School of Medicine, Taipei, Taiwan

Institute of Clinical and Community Health Nursing, National Yang-Ming University, Taipei, Taiwan

Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taipei, Taiwan

Department of Medical Research, Mackay Memorial Hospital, Taipei, Taiwan

Department of Biotechnology, Asia University, Taichung, Taiwan

School of Chinese Medicine, College of Chinese Medicine, China Medical University, Taichung, Taiwan

* Corresponding author. Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, National Yang-Ming University, School of Medicine, 201, Section 2, Shih-Pai Road, Taipei, Taiwan.
E-mail addresses: phwang@vghtpe.gov.tw, pongpongwang@gmail.com (P.-H. Wang).