



New frontiers in cancer therapy: the 11th International Meeting of the Asian Clinical Oncology Society (ACOS)

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The 11th international conference of the Asian Clinical Oncology Society (ACOS) was held in conjunction with the 19th Taiwan Joint Cancer Conference from May 2 through May 4, 2014. The meeting venue, Taipei International Convention Center, is located besides the Taipei 101 building, one of the highest skyscrapers of the world and icon of Taipei city. The title of this year's ACOS meeting is "New Frontiers in Cancer Therapy: Challenges for Oncologists in Asia," covering a wide range of topics in cancer such as prevention, epidemiology, statistics, multidisciplinary treatment, surgical therapy, chemotherapy, oriental medicine, radiotherapy, as well as highly developed translational research. The Third Kobayashi Foundation Award goes to Soon Thye Lim (Singapore; Peripheral T cell lymphoma and NK/T cell lymphoma: from genomics to therapeutics, a National Translational Lymphoma Research Program), and Li-Ztong Chen (Taiwan; Developing novel treatment strategies for gastrointestinal cancers: progress in the management of pancreatic adenocarcinoma).

The gynecologic oncology part was held on May 3, starting from "meet the profession" followed by a series of outstanding speeches. Professor Barbara A. Goff reviewed the most update clinical trials on ovarian cancer, and long-term results of the Japanese Gynecologic Oncology Group (JGOG) 3016 trial. After a median follow-up of 76.8 months, the patients in dose-dense arm had a significant longer median progression-free survival (28.2 months: 95% confidence interval [CI], 22.3 to 33.8] vs. 17.5 months: 95% CI, 15.7 to 21.7); hazard ratio [HR], 0.76; 95% CI, 0.62 to 0.91; $p=0.004$), and median overall survival (100.5 months: 95% CI, 65.2 to ∞ vs. 62.2 months: 95% CI, 52.1 to 82.6; HR 0.79; 95% CI, 0.63 to 0.99; $p=0.039$). Early

detection of ovarian cancers in order to increase the outcome was carried out in screening program that failed to show benefit.

Prevention of cervical cancer, cervical intraepithelial neoplasm, vaginal intraepithelial neoplasm, external genital warts become possible since debut of human papillomavirus (HPV) vaccine. As the first nation implementing public HPV vaccination, Professor Michael Quinn shared Australian experience on the school-based program and catch-up program. The nation-wide HPV prevalence rate of HPV infection, high-grade cervical intraepithelial neoplasm and genital warts decreased after inauguration of vaccination program, especially in the vaccinated age group and type-specific diseases. They also found a lower coverage rate around 33% in the community catch-up than school-based injection.

Professor Keiichi Fujiwara reviewed the hottest topics in gynecologic cancer trial. Intraperitoneal (IP) chemotherapy was reported a higher overall survival in Gynecologic Oncology Group (GOG) 172, and the new JGOG 3019 trial is looking at if carboplatin (AUC6) given with IP route is better than the intravenous route used in the JGOG 3016 trial. Large molecules are water insoluble and stay longer in the peritoneal cavity, while small molecules can attack the tumor for the 2nd time after entering circulation.

Professor Chyong-Huey Lai of Taiwan focused her talk on molecular imaging on gynecologic oncology. Dual-phase positron emission tomography (PET), PET-computed tomography (CT) has been used widely on the staging and surveillance of primary and recurrent gynecological cancers for its higher sensitivity. The SUVmax also predicts treatment outcome and helps design more suitable treatment modality. PET using [^{18}F]-fluoroestradiol showed difference between estrogen-dependent tumor and normal tissue in some Japanese studies. For ovarian cancer, PET-CT is superior to CT and magnetic resonance imaging (MRI) for recurrent diseases. Metabolic

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tumor volume and total lesion glycolysis in the PET-CT correlate inversely with prognosis. For patients with cervical cancer, the apparent diffusion coefficient value in the magnetic resonance diffusion weighted imaging (DWI), combined with conventional MRI, detect cancerous tissue and metastatic lymph node more sensitively (83% vs. 25%). It detects lymph nodes as small as 5 mm in diameter. DWI with 3.0-T MRI also is more accurate in evaluating depth of myometrial invasion of endometrial cancer, even in those with impaired renal function. Some of the newly developed techniques, such as dynamic nuclear polarized-enhanced ^{13}C magnetic resonance spectroscopic imaging, chemical exchange saturation transfer MRI, susceptibility weighted MRI and [^{18}F]-fluorothymidine-PET are promising in cancer treatment.

Professor TC Wu from Johns Hopkins University, USA started the afternoon session with his talk on innovative cancer immunotherapy for gynecological malignancies. Preventive HPV vaccines using L1 capsid protein had been proven safe and effective. E6 and E7 of HPV are true antigens uniquely expressed in HPV-associated tumor cells but not in normal cells, and therefore the targets of therapeutic HPV vaccine. Some phase I/II therapeutic vaccine trials are ongoing, including protein-based, peptide-based, Vaccinia-based, Listeria-based, DNA-based, and DNA-based plus electroporation, hoping to enhance the CD8 and CTL. Heat shock protein and calreticulum are used to enhance the antigen presentation of MHC class I. One of the trials being carried out in Johns Hopkins University is a phase I trial using DNA-vaccinia vaccination in combination with topical imiquimod in patients with high grade cervical dysplasia. Trials using chimeric protein including mesothelin and those with HPV-16 pseudovirion had been proven effective as immunotherapy for ovarian cancer model. Shih-Jen Liu from National Health Research Institutes, Taiwan, used TLR2 agonist-conjugated long peptide as therapeutic vaccine to induce anti-tumor immunity.

Professor John K. Chan studied a large database of Kaiser Permanente on the risk of cancer without thinking of climacteric syndrome, osteoporosis and cardiovascular disease, and found decreased risk of ovarian cancer and peritoneal cancer in patients whose one or two ovaries and tubes were removed during hysterectomy. Personalized therapy for ovarian cancer based on the specific characters of intracellular

signaling, nuclear targets, surface markers of tumor cells, tumor heterogeneity as well as angiogenesis and immune cells of the microenvironment are a new direction of drug development other than chemotherapy. MicroRNA had been used to enhance chemosensitivity and to select proper patient for anti-angiogenic treatment. GOG 262 looking at difference between bevacizumab with dose dense chemotherapy and bevacizumab with 3-weekly chemotherapy had been completed and its data will be published soon.

Researches using health care databases are more and more popular which results might answer questions on epidemiology, health services, effectiveness of government strategy, safety and outcome of different treatment modalities and health economics. Drs. San-Lin You and Yun-Yuan Chen from National Taiwan University reported 26.3-time higher high-grade squamous intraepithelial lesion risk in women with positive HPV test than those without HPV infection. Chun-Ju Chiang reviewed Taiwanese Cancer Registration databases showing increased incidence of uterine corpus cancer (67.8%) and breast cancer (55.7%) during the past 10 years.

Dr. Yi-Jen Chen talked on antiangiogenic treatments. Anti-angiogenic agents of different targeting mechanism, such as bevacizumab (GOG 218, ICON7, OCEANS, AURELIA), cediranib (ICON6), pazopanib (AGO-OVAR16), trebananib (TRINOVA-1) provide longer progression-free survival for front-line or 2nd-line chemotherapy for ovarian cancer, and bevacizumab (GOG 240) provide benefit of progression-free survival and overall survival for recurrent and advanced-stage cervical cancer.

The 11th ACOS Meeting accommodated near 3,000 participants from 28 countries. Two-day workshop and 1-day satellite symposium for young oncologists from Asian countries before the commencement of the formal conference were held. Besides the fruitful meetings, the organizing committee prepared a variety of tours for participants to experience colorful Taiwanese culture and beautiful landscapes.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.