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Meeting Report

The American Society of Clinical Oncology 2018 annual meeting: A review and summary of selected abstracts

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1. Introduction

This year, the annual meeting of the American Society of Clinical Oncology met again in Chicago, Illinois. From June 1–5th, 2018, investigators and clinicians from all over the world convened to present data with this year's theme of *Delivering Discoveries: Expanding the Reach of Precision Medicine*. The main plenary session delivered a dramatic shift for women with intermediate risk hormone receptor positive breast cancer in the results of the TAILORx trial. The study demonstrated no benefit to chemotherapy and estrogen antagonism compared with anti-estrogen therapy alone for women with intermediate risk scores. For those in gynecologic oncology, this was a year of increasing complexity. The approval of bevacizumab in 2014 represented the beginning of a rush of new therapeutic options for our patients, and yet another poly (ADP-ribose) polymerase (PARP) inhibitor has found its way to market becoming the fourth drug approved in four years. The presentations this year included many therapeutic trials with two potentially practice-changing pivotal trials (GOG 213 and MITO 16). This year's review will condense selected gynecologic cancer studies presented at the meeting and include data in table form for phase II studies included in the meeting program. (Tables 1 and 2).

2. Surgery in gynecologic oncology – less is more except when more is better

The long awaited results of GOG 213 surgical arm were presented as potentially the most influential abstract at the gynecologic plenary session on June 5th. GOG 213 was a phase III randomized study to evaluate two objectives in platinum-sensitive, relapsed ovarian cancer patients: first, to determine if the addition of bevacizumab to paclitaxel and carboplatin chemotherapy would improve survival compared to chemotherapy alone and second, to determine if secondary cytoreduction followed by chemotherapy would increase overall survival in these same patients. Objective 1 was reported at the Society of Gynecologic Oncology (SGO) last year and showed an improvement in overall survival (OS) of 4.9 months with the addition of bevacizumab to chemotherapy. This year's presentation focused on objective 2, the question of surgical cytoreduction. Due to slow accrual in the US, GOG 213 was opened in the Japan and Korea gynecologic groups and 485 patients were ultimately enrolled. The median OS was much longer than expected extending the trial to over 10 years. Participants judged to be amenable to completed resection were randomized to surgical cytoreduction versus chemotherapy with the chemotherapy options of physician's choice being either carboplatin and paclitaxel or gemcitabine with optional bevacizumab. Bevacizumab maintenance was continued until progression, intolerance, or death. Sixty four percent of women had R0 resection in the intent-to-treat (ITT) analysis group of those randomized to secondary cytoreduction. There was no improvement in OS or progression-free survival (PFS) associated with surgical cytoreduction with HRs of 1.28 (0.92–1.78) and 0.88 (0.70–1.11) respectively. R0 resection was associated with improved PFS compared to non-R0 resection but did not show improvement when compared with no surgery (chemotherapy only), HR of 1.11 (0.74–1.66). The investigators noted that the rate of R0 resection was slightly lower than DESKTOP III (68% vs 72.5% in the per protocol analysis), perhaps due to the lack of pre-surgical requirements to improve the likelihood of resection. Overall survival for DESKTOP III is still immature.

Following closely on the heels of the LACC study presented by Dr. Ramirez at the SGO Annual meeting, another study examined the cost effectiveness and outcomes of patients with early stage cervical cancer treated with primary surgery. Minimally invasive approaches to complex gynecologic surgery have endeavored to bring faster recovery and fewer complications but data about efficacy is only available in corpus cancers. This study examined the cost of open versus robotic or laparoscopic radical hysterectomies performed between 2010 and 2013 in the PREMIUM data set. The authors demonstrated not only a 21% decrease in median total costs with a minimally invasive approach,

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Table 1
Phase II trials of novel drug and cytotoxic treatment strategies in ovarian, fallopian tube, and **primary peritoneal** carcinomas.

Type	Abs no.	Agents/dose	Mechanism	Type of patients	Results	HR	P-value	Major toxicities
Phase II single agent	5511	IV pembrolizumab (200 mg) day 1, q3 weeks for 2 years	Anti-PD-1 antibody	Advanced, recurrent EOC/FTC/PPC following 1st-line platinum therapy, ECOG PS 0/1; Cohort A: ≤2 prior ct lines + PFI/TFI 3–12 months; Cohort B: 3–5 prior ct lines + PFI/TFI ≥3 months (n = 97)	ORR = 9% Among PDL-1+ CPS ≥1 (n = 8) - ORR 14% Among PDL-1+ CPS ≥10 (n = 5) - ORR 25%	–	–	AEs in 73%, >Gr3 in 17%; 1 treatment-related death (Stevens-Johnson syndrome)
	5514	Oral niraparib (300 mg) daily	PARP inhibitor	Gr2/Gr3 serous, relapsed OC, ≥3 prior lines ct, measurable disease (n = 463)	Among HRD+, platinum-sensitive without prior PARP inhibitor (n = 51) - ORR 14 (27.5%) - DCR 35 (68.6%) - DOR 9.2 months BRCAm (n = 18) vs BRCAwt (n = 33) - ORR 7 (38.9%) vs 7 (21.2%)	–	–	≥Gr3 in 260 (56.2%): PLTS (27.9%), An (24.9%), ANC (12.4%); AEs worse in 1st month; PLTS at 300 mg (27.5%), 200 mg (4.7%), 100 mg (2.7%)
	5515	Oral apatinib (500 mg) daily + oral etoposide (50 mg) days 1–14 in 21-day cycle; max 6 cycles	VEGFR2 tyrosine kinase inhibitor; topoisomerase II inhibitor	Platinum-resistant (PROC) or platinum-refractory OC (n = 35)	ORR 19 (54.3%), DCR 30 (85.7%), median PFS 8.1 months PD in 10 (28.6%), discontinuation of study in 20 (57.1%) at data cutoff	–	–	Gr3/4: ANC (41.2%), f (32.4%), An (29.4%), mucositis (23.5%); dose-reduction of apatinib in 82.4% and etoposide in 76.5%
	5524	Oral anastrozole (1 mg) daily	Aromatase inhibitor	Post-menopausal ER/PR+ recurrent/metastatic granulosa cell/sex-cord stromal tumors of ovary with measurable disease or elevated inhibin (n = 41)	CBR at 3 months (n = 40) 80%, PR 1 (2.5%), SD 31 (77.5%), PD 8 (20%), median PFS 8.6 months, delayed PR >3 months in 4 (9.8%), 23 pts. had PFS at 6 months	–	–	Gr3 arthralgia in 1 (2.4%)
Phase II combination	106	Oral niraparib (200 mg) daily + IV pembrolizumab (200 mg) q21d	PARP inhibitor; anti-PD-1	Recurrent platinum-resistant OC (PROC); ≥6 month response to 1st-line platinum therapy (n = 60)	ORR 15 (25%), DCR 41 (68%) Among BRCAm (n = 11) - ORR 5 (45%) - DCR 8 (73%) Among PROC (n = 38) - RR 11 (29%) Among platinum-refractory (n = 11) - RR 2 (18%) Among platinum-sensitive (n = 10) - RR 1 (10%)	–	–	≥G3 An (19%) and PLTS (9%)
	5510	SC DPX-Survivac (two 0.25 mL priming doses), q3 weeks + up to 6 boosting doses (0.1 mL), q8 weeks + oral metronomic cyclophosphamide (50 mg) bid, alternating weeks + epacadostat (up to 300 mg) bid	T-cell response against survivin; cytotoxic; indoleamine 2,3-dioxygenase 1 inhibitor	Advanced, stage IIC-IV OC, evidence of disease progression (n = 10)	PR 3 (30%), 1 in first 8 weeks SD followed by PR in 2 (20%) Best response of SD in 3 (30%), 1 with SD after initial PD	–	–	–
	5519	Oral cediranib (30 mg) daily + oral olaparib (200 mg) bid	VEGFR tyrosine kinase inhibitor; PARP inhibitor	High-grade serous or BRCA-related OC (platinum-sensitive or resistant), no prior PARP or angiogenesis inhibitors, measureable disease (n = 70)	Among platinum-sensitive (n = 35) - ORR 27 (77%) with 22 (81%) PFS at 7 month median follow-up - CR 3 (9%), PR 24 (69%) - DCR 91% Among platinum-resistant (n = 35) - ORR 7 (20%), all 7 were PRs - DCR 43%	–	–	–