

IGCS 2023

Annual Global Meeting

SEOUL

IGCS 2023 Abstracts:

Short Oral Presentations (Focused Plenary Sessions)

Short oral abstract presentations are included in the below sessions.

The sessions will be recorded for on-demand viewing via the IGCS 360 Educational Portal.

Focused Plenary 01: Quality of Life

Monday, November 6, 2023, 4:15 – 5:45 PM

Grand Ballroom 101+102

Focused Plenary 02: Surgery

Monday, November 6, 2023, 5:50 – 6:50 PM

Grand Ballroom 101+102

Closing Session: The Development of Prognosis and Predictive Markers

Tuesday, November 7, 2023, 3:55 – 5:00 PM

Auditorium

SO001 / #159

Topic: *AS19. Survivorship*

EXPLORING THE ASSOCIATION BETWEEN FRAILTY AND GYNECOLOGIC CANCER SURVIVORSHIP: A CROSS-SECTIONAL ANALYSIS OF THE CANADIAN LONGITUDINAL STUDY ON AGING

FOCUSED PLENARY 01: QUALITY OF LIFE

Melissa Lavecchia¹, Maura Marcucci², Parminder Raina³, Waldo Jimenez⁴, Julie Nguyen⁴
¹McMaster University, Division Of Gynecologic Oncology, Hamilton, Canada, ²McMaster University, General Internal Medicine, Hamilton, Canada, ³McMaster University, Health Research Methods, Evidence, And Impact, Hamilton, Canada, ⁴Juravinski Cancer Centre, McMaster University, Hamilton, Gynecologic Oncology, Hamilton, Canada

Introduction: Patients with gynecologic cancers are living longer after diagnosis, but the consequences of aggressive treatments may render them susceptible to future health concerns. The Canadian Longitudinal Study on Aging (CLSA) is a large population-based cohort of >50,000 individuals between the ages of 45-85 and provides a distinct opportunity to evaluate the impact of psychosocial and functional factors on health outcomes. We sought to examine the prevalence and impact of frailty among community-dwelling older individuals with a history of gynecologic cancer.

Methods: We performed a cross-sectional analysis of CLSA participants who self-identified as female. Frailty was operationalized using the deficit accumulation model (where frailty is defined as frailty index (FI) > 0.21). Associations were evaluated using multivariate regression analyses, adjusting for sociodemographic, lifestyle and social support factors.

Results: Datapoints to measure frailty were available for 15,149 of 15,320 (98.8%) female participants. The prevalence of frailty was 19.9% in those with a history of gynecologic cancer compared to 9.1% in those without ($p < 0.001$; OR 2.2, 95%CI 1.6-2.9). Gynecologic cancer survivors classified as frail were more likely to require assistance from family members (OR 3.4, 95%CI 2.0-5.7) and professional community supports (OR 7.9, 95%CI 4.2-15.0) than those who were not frail.

Conclusion/Implications: In this large national prospective cohort study, frailty was found to affect approximately 20% of gynecologic cancer survivors. Further studies are required to evaluate the impact of frailty on oncologic outcomes and to elucidate strategies for early recognition and risk mitigation of frailty.

SO002 / #460

Topic: *AS20. Symptom Management/Supportive Cancer Care*

A NOVEL ARTIFICIAL INTELLIGENCE ALGORITHM TO EVALUATE THE QUALITY OF LIFE USING HEART RATE VARIABILITY

FOCUSED PLENARY 01: QUALITY OF LIFE

Nozomi Higashiyama, Ken Yamaguchi, Yoshihide Inayama, Ayami Koike, Akihiko Ueda, Sachiko Kitamura, Mana Taki, Koji Yamanoi, Ryusuke Murakami, Junzo Hamanishi, Masaki Mandai
Kyoto University Graduated School of Medicine, Gynecology And Obstetrics, Kyoto, Japan

Introduction: Management of quality of life (QOL) is important for patients with cancer. The critical issue in evaluating QOL is the low adherence to recording patient reported outcomes (PROs). Heart rate variability (HRV), which is associated with the autonomic nervous system, is easily measured. This study aims to develop an artificial intelligence (AI) algorithm to evaluate QOL using HRV.

Methods: 180 data from 50 patients and 50 data from 15 patients with gynecological cancer were used as test and validation datasets, respectively. HRV and PROs (EORTC qlq-C30, FACT-G, PHQ9, PRO-CTCAE) were collected daily and weekly, respectively. A binary AI classification model that generates SHAP values was developed to predict whether symptoms related to QOL were severe using HRV. A clustering model was developed by clustering the SHAP values into three groups using Parametric Umap. Serum metabolites that contribute to HRV variation were identified.

Results: Clustering derived from HRV indicated high, middle, and low QOL groups (Group A, B, and C, respectively). The total score of FACT-G was 82.4, 72.7, and 67.3 for Group A, B, and C, respectively. The scores of fatigue and other symptoms were also worst in Group C and best in Group A. Metabolites in serum contributing to HRV variation are Arachidonic acid and Dopamine, which are associated with inflammation and depression.

Conclusion/Implications: Monitoring QOL over time using HRV may allow us to detect early deterioration in QOL, such as side effects of chemotherapy.

SO003 / #274

Topic: *AS05. Fertility/Pregnancy*

ATTITUDE OF BRCA1/2 MUTATION CARRIERS TOWARDS FERTILITY PRESERVATION, FAMILY PLANNING AND PREIMPLANTATION GENETIC TESTING (PGT) FOR THE NEXT-GENERATION PRIMARY PREVENTION OF BREAST AND OVARIAN CANCER

FOCUSED PLENARY 01: QUALITY OF LIFE

Chen Nahshon^{1,2}, Ofer Lavie^{1,2}, Shirly Lahav-Baratz^{1,2}, Galia Oron^{1,2}

¹Technion-Israel Institute of Technology, Ruth And Bruce Rappaport Faculty Of Medicine, Haifa, Israel, ²Carmel Medical Center, Obstetrics & Gynecology, Haifa, Israel

Introduction: BRCA1/2 mutation carriers encounter many dilemmas during their life such as when to undergo risk reduction surgeries, how to plan their family, whether to undergo fertility preservation and whether to perform preimplantation genetic testing (PGT) for the selection of non-carrier embryos.

Methods: This cross-sectional study was conducted by the distribution of an anonymous questionnaire intended for BRCA1/2 carriers, from August 2022 to January 2023.

Results: The questionnaire was completed by 530 BRCA1/2 mutation carriers. The mean (SD) age at mutation detection was 36.4 (9.6) years. At the time of mutation detection, 40% did not have children. Risk reduction bilateral salpingo-oophorectomy (RRBSO) was discussed with 91% of patients and performed in 53%. Following mutation detection, 37% of responders changed their family planning, mostly choosing to have children earlier or to have less children than planned. 28% of BRCA carriers discussed the option of fertility preservation with a physician and 11% underwent oocyte/embryo vitrification before RRBSO. 44% of BRCA carriers discussed the option of PGT and 8% underwent PGT to select non-carrier embryos. In a multivariate analysis, age under 35 years and the a priori need for fertility treatments were both found significant factors increasing the likelihood of performing fertility preservation and PGT.

Conclusion/Implications: This study emphasizes that despite high rates of RRBSO performance and a substantial proportion of women admitting that mutation detection affected their family planning, performance of fertility preservation and PGT remained exceedingly low. Increasing the knowledge and awareness of these issues is important and should be included in multidisciplinary counselling.

SO004 / #886

Topic: *AS04. Endometrial/Uterine Corpus Cancers*

THE EFFECT OF ROSUVASTATIN COMBINED WITH ORAL MEGESTROL ACETATE ON FERTILITY-PRESERVING TREATMENT IN PATIENTS WITH ATYPICAL ENDOMETRIAL HYPERPLASIA: A PROSPECTIVE, SINGLE-ARM PHASE II STUDY

FOCUSED PLENARY 01: QUALITY OF LIFE

Bingyi Yang¹, Xiaojun Chen¹, Weiwei Shan², Yali Cheng²

¹The Obstetrics & Gynecology Hospital of Fudan University, Gynecologic Department, No. Shenyang Road, China, ²Obstetrics and Gynecology Hospital of Fudan University, Gynecology, Shanghai, China

Introduction: To explore the effect of rosuvastatin combined with oral megestrol acetate on fertility-preserving treatment in patients with atypical endometrial hyperplasia (AEH).

Methods: This was a single-center phase II study with an open-label, single-arm, phase 2 trial conducted between September 2020 and June 2022. We enrolled patients with newly diagnosed untreated AEH and dyslipidemia. Patients received MA 160 mg plus rosuvastatin 10mg orally daily. The primary endpoint was complete response (CR) rate at 16 weeks of treatment. A Simon two-stage design was used to compare a null hypothesis of <20% response rate against an alternative of 40%.

Results: Thirty-six patients were enrolled in the intention-to-treat population with a median BMI of 28.87 kg/m². Thirteen patients (36.1%) had a complete response at 16 weeks of treatment, and the Kaplan-Meier estimate of 16-week CR rates (with 95% confidence interval) was 36.1% (25.0-45.4%). Considered high BMI in these patients may reduce CR rate, we retrospectively collected data from all newly diagnosed AEH patients with dyslipidemia and MA-treated in our hospital from 2016 to 2022, and the Kaplan-Meier estimate of 16-week CR rates (with 95% CI) was 22.5% (16.6-34.1%). After adjusting for patient age, BMI, insulin resistance, metabolic syndrome and previous medical history, the use of rosuvastatin (HR, 1.130; 95%CI, 1.012-1.263; P=0.031) was significantly correlated with better treatment effects to achieve CR.

Conclusion/Implications: Due to higher BMI in study population, our data did not meet the predefined primary outcome. Compared with AEH patients with dyslipidemia using MA alone, the combined use of rosuvastatin did improve the treatment effects.

SO005 / #633

Topic: *AS06. Genetics and Epidemiology*

OUTCOMES OF LYNCH SYNDROME ENDOMETRIAL CANCER SURVEILLANCE IN A NATION-WIDE COHORT

FOCUSED PLENARY 01: QUALITY OF LIFE

Ellis L Eikenboom^{1,2}, Lotte Van Leeuwen², Floris Groenendijk³, Monique E Van Leerdam^{4,5}, Manon C. W. Spaander¹, Helena C. Doorn⁶, Anja Wager²

¹Erasmus MC, University Medical Center Rotterdam, Gastroenterology & Hepatology, Rotterdam, Netherlands, ²Erasmus MC Cancer Institute, University Medical Center Rotterdam, Clinical Genetics, Rotterdam, Netherlands, ³Erasmus MC Cancer Institute, University Medical Center Rotterdam, Pathology, Rotterdam, Netherlands, ⁴Leiden University Medical Center, Department Of Gastroenterology And Hepatology, Leiden, Netherlands, ⁵Netherlands Cancer Institute Amsterdam, Department Of Gastrointestinal Oncology, Amsterdam, Netherlands, ⁶Erasmus MC Cancer Institute, University Medical Center Rotterdam, Gynecologic Oncology, Rotterdam, Netherlands

Introduction: Female carriers of the Lynch syndrome (LS) have an increased risk to develop endometrial cancer (EC). Dutch guidelines advise annual gynecological examination between age 40 and 60. It is hitherto unclear to what extent gynecological screening in this population contributes to earlier detection of EC. Therefore, screening outcomes were assessed in a nationwide cohort of LS carriers.

Methods: This retrospective cohort study used data from molecularly proven LS carriers included in a prospectively maintained, national, voluntary database. Data were linked to the Dutch National Pathology Registry to assess EC development. Enrollment in a gynecological surveillance program, EC stage, and cause of death were obtained in corresponding patients' medical files.

Results: Of 1255 female LS carriers registered in the Dutch LS database, 20.4% (n=256) was not yet eligible for surveillance. Of eligible women, 44.5% (n=558) was enrolled in gynecological surveillance (surveillance group), and 35% (n=441) had no surveillance whatsoever (no surveillance group). In the surveillance group, 18.3% (n=102) developed EC, of which 52% (n=53) in stage I/II versus 42.2% (n=43) in stage III /IV. For 5.9% (n=6), stage was unknown. In the no surveillance group, 16.8% (n=74) developed EC, of which 47.3% (n=35) in stage I/II versus 48.6% (n=36) in stage III /IV, and 4.0% unknown (n=3). In each group, two carriers died from EC.

Conclusion/Implications: Gynecological surveillance complying with Dutch guidelines did not seem to cause much earlier EC detection and did not seem to have an effect on death due to EC in female LS carriers.

SO006 / #55

Topic: AS03. Cervical Cancer

REGULAR DILATION AND/OR SEXUAL ACTIVITY SHOW LESS RISK FOR VAGINAL STENOSIS IN CERVICAL CANCER PATIENTS

FOCUSED PLENARY 01: QUALITY OF LIFE

Kathrin Kirchheiner¹, Alexandru Zaharie¹, Stéphanie Smet Smet², Sofia Spampinato³, Cyrus Chargari⁴, Umesh Mahantshetty⁵, Barbara Šegedin⁶, Kjersti Bruheim⁷, Bhavana Rai⁸, Rachel Cooper⁹, Elzbieta Van Der Steen-Banasik¹⁰, Ericka Wiebe¹¹, Richard Pötter¹, Christian Kirisits¹, Maximilian Schmid¹, Christine Haie-Meder⁴, Kari Tanderup³, Astrid De Leeuw¹², Ina Jürgenliemk-Schulz¹², Remi Nout¹³

¹Medical University Vienna, Radiation Oncology, Vienna, Austria, ²AZ Turnhout, Radiation Oncology, Turnhout, Belgium, ³Aarhus University Hospital, Oncology, Aarhus N, Denmark, ⁴Gustave-Roussy, Radiotherapy, Villejuif, France, ⁵Tata Memorial Center, Homi Bhabha Cancer Hospital And Research Center, Punjab, India, ⁶Institute of Oncology Ljubljana, University of Ljubljana, Radiotherapy, Faculty Of Medicine, Ljubljana, Slovenia, ⁷The Radium Hospital, Oslo University Hospital, Oncology, Oslo, Norway, ⁸Postgraduate Institute of Medical Education and Research, Radiotherapy And Oncology, Chandigarh, India, ⁹St James's University Hospital, Leeds Cancer Centre, Leeds, United Kingdom, ¹⁰Radiotherapiegroep Arnhem, Radiotherapy, Arnhem, Netherlands, ¹¹Cross Cancer Institute and University of Alberta, Oncology, Edmonton, Canada, ¹²University Medical Center Utrecht, Radiation Oncology, Utrecht, Netherlands, ¹³Erasmus MC Cancer Institute, University Medical Center, Radiotherapy, Rotterdam, Netherlands

Introduction: Purpose/Objective: To evaluate the association between regular vaginal dilation and/or sexual activity on vaginal stenosis in locally advanced cervical cancer patients after definitive radiochemotherapy and image-guided adaptive brachytherapy from the EMBRACE-I study.

Methods: Material/Methods: Physician-assessed vaginal stenosis (CTCAEv.3), vaginal dilation and patient-reported sexual activity (EORTC-QLQ-CX24) were prospectively assessed at baseline and during regular follow-up. For this longitudinal analysis, a subgroup of patients was selected with at least 3 follow-ups with information on vaginal dilation and/or sexual activity. Vaginal penetration summarized either the use of vaginal dilators or sexual activity or both. Regular vaginal penetration was defined, if reported in $\geq 50\%$; no/infrequent penetration, if reported in $< 50\%$ of follow-ups.

Results: Of 1416 patients overall, the subgroup for this longitudinal evaluation included 882 patients, with a median follow-up of 60 months. Regular penetration was associated with a significantly lower 5-year actuarial risk estimate for vaginal stenosis $G \geq 2$, compared to reporting no/infrequent penetration (23% vs. 37%, $p \leq 0.001$, figure 1).

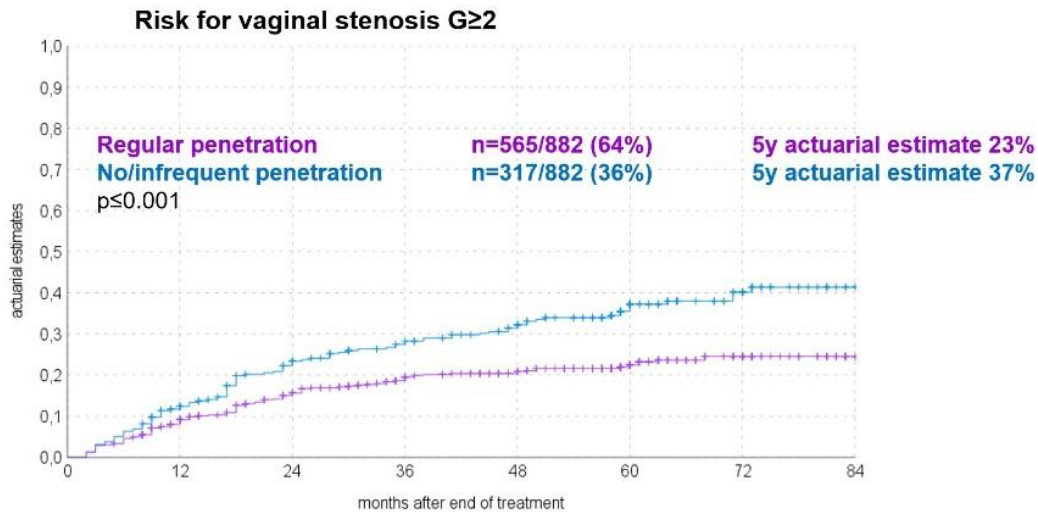


Figure 1: Actuarial estimates of vaginal stenosis G \geq 2 were calculated with Kaplan-Meier method and subgroup comparison between patients with regular penetration (\geq 50% of follow-ups) and no/infrequent penetration (<50% of follow-ups) evaluated with the log-rank test. Penetration is defined as either vaginal dilation and/or sexual activity.

A multivariable Cox regression model confirmed this association (HR=0.630), adjusting for other known risk factors (table 1).

Table 1: Univariate and multivariable analyses of patient-, disease and treatment-related risk factors for vaginal stenosis G \geq 2 (Cox proportional hazards regression model); p-values and hazard ratios with 95% confidence intervals (CI) shown.

variable	scale	total number of patients	UNIVARIATE					MULTIVARIABLE		
			subgroups	number of patients in subgroups	p-value	hazard ratio	95% CI	p-value	hazard ratio	95% CI
age, years	metric	880	XXXXXXXX	XXXXX	p \leq 0.001**	1.018	1.007-1.028	p=0.677	1.003	0.990-1.015
tumor extension in the vagina at diagnosis	categorical	882	no/upper infiltration	827	p \leq 0.001**	2.765	1.883-4.060	p \leq 0.001**	2.544	1.691-3.828
			mid/lower infiltration	55						
external beam radiotherapy (EBRT) dose (in 25 fractions)	categorical	882	\leq 46Gy	698	p \leq 0.001**	1.657	1.245-2.205	p \leq 0.001**	1.713	1.267-2.316
			>46Gy	184						
recto-vaginal reference point dose in Gy (equivalent dose in 2 Gy fractions, EQD2)	metric	866	XXXXXXXX	XXXXX	p \leq 0.001**	1.031	1.016-1.046	p=0.003**	1.024	1.008-1.040
regular hormonal replacement therapy (HRT)	categorical	867	no/irregular HRT	641	p=0.061	0.737	0.536-1.014	p=0.340	0.837	0.581-1.206
			regular HRT	226						
regular penetration (vaginal dilation and/or sexual activity)	categorical	882	no/irregular penetration	317	p \leq 0.001**	0.573	0.442-0.742	p=0.001**	0.630	0.474-0.837
			regular penetration	565						

Conclusion/Implications: Conclusion: Regular dilation and/or sexual activity is associated with significantly lower risk for vaginal stenosis in cervical cancer patients. As a correlation does not justify any cause-effect relation, it cannot finally be concluded that regular penetration prevents vaginal stenosis or if the development of vaginal stenosis interferes with these activities. However, as a randomized trial design is not appropriate in this context, the multivariable model supports the clinical observations and recommendations for prevention of vaginal stenosis.

SO007 / #1036

Topic: *AS12. Palliative Care*

IGCS PALLIATIVE CARE GLOBAL CURRICULUM VERSION 1: EXPERIENCE FROM GRADUATES

FOCUSED PLENARY 01: QUALITY OF LIFE

Raimundo Correa¹, Peter Grant², Paul A. Cohen³, Michael Quinn⁴, Michael Pearl⁵

¹Clínica Universidad de los Andes & Hospital Santiago Oriente, Gynecologic Oncology & Palliative Care, Santiago, Chile, ²Melbourne University, Obstetrics & Gynaecology, Melbourne, Australia, ³The University of Western Australia, Gynecologic Oncology, Crawley, Perth, Australia, ⁴Royal Women's Hospital, Gynecologic Oncology, Melbourne, Australia, ⁵Stony Brook University Hospital, Division Of Gynecological Oncology, Stony Brook, United States of America

Introduction: Palliative care uses a multidisciplinary approach and is recommended early in advanced disease. Despite data showing its importance, a 2018 IGCS members' survey revealed that most members lacked training in palliative care and wanted to improve their skills. As a Presidential initiative, the IGCS Palliative Care Workgroup developed an online Global Curriculum to be as generalizable and flexible as possible, so that it would be useful to a variety of professionals practicing in different regions of the world, in different circumstances, and cultural and legal structures.

Methods: The Global Palliative Care Curriculum was developed by 12 authors and is composed of nine chapters addressing critical topics. Each chapter has a case vignette, pre- and posttest questions, objectives, description of the topic, and references. Each chapter was reviewed by other chapter authors, with IGCS co-editors and a professional medical editor conducting a final review.

Results: IGCS Global Palliative Care Curriculum Version 1 was launched in September 2020. As of May 2023, 133 applicants started the program, of whom 63 have completed the program. Forty-four percent (28/63) of those who completed the program completed the post-program survey. Overall, applicants

agreed that the content fulfilled their expectations, and improved their skills in this field (Table 1).

QUESTION	MOST PREFERRED ANSWER	RATE
Prior Training	A little	57% (16/28)
Material was Valuable & Useful to me in my setting	Strongly agree	86 % (24/28)
Content was covered as expected	Yes	100% (28/28)
Materials: increased knowledge & skills	Strongly Agree	89% (25/28)
Applicant feels confident after completing this course	Very Confident	64% (18/28)
Course increased interest in this field	Yes	100% (28/28)

TABLE 1: Summary of Different Responses from Applicants after Completion of Course.

Conclusion/Implications: Palliative Care is an unmet need for gynecologic oncologists. The IGCS Palliative Care Curriculum Version 1 appears to be a reliable learning tool. Based on its success, the IGCS Palliative Care Work Group is developing Version 2, updating the existing chapters, and adding new chapters.

SO008 / #160

Topic: AS17. Social Inequities and Impact on Cancer Outcomes

MENTAL HEALTH AMONG WOMEN WITH A HISTORY OF GYNECOLOGIC CANCERS: A CROSS-SECTIONAL ANALYSIS OF THE CANADIAN LONGITUDINAL STUDY ON AGING

FOCUSED PLENARY 01: QUALITY OF LIFE

Melissa Lavecchia¹, Alison Shea², Maura Marcucci³, Parminder Raina⁴, Waldo Jimenez⁵, Julie Nguyen⁵
¹McMaster University, Division Of Gynecologic Oncology, Hamilton, Canada, ²McMaster University, Obgyn, Hamilton, Canada, ³McMaster University, General Internal Medicine, Hamilton, Canada, ⁴McMaster University, Health Research Methods, Evidence, And Impact, Hamilton, Canada, ⁵Juravinski Cancer Centre, McMaster University, Hamilton, Gynecologic Oncology, Hamilton, Canada

Introduction: The mental health of gynecologic cancer survivors is under investigated. The Canadian Longitudinal Study on Aging (CLSA) includes >50,000 individuals aged 45-85 for 20 years and contains important psychosocial and self-reported data. We sought to evaluate factors contributing to current mental health outcomes among gynecologic cancer survivors.

Methods: We performed a cross-sectional analysis of 26,155 female participants. Depression and psychological distress were measured using the Center for Epidemiological Studies Depression Scale (CES-D10) and the Kessler's Psychological Distress Scale (K10), respectively. Self-rated mental health (SRMH) was measured using a five-point Likert scale. Regression analyses were performed, controlling for the complexity of the design and covariates.

Results: Participants with a history of gynecologic cancer (n=765, weighted prevalence 2.9%, 95%CI 2.4-3.3) were more likely to screen positive for depression (OR_{CES-D10} 1.6, 95%CI 1.1-2.5). Low income (OR_{CES-D10} 1.8, 95%CI 1.1-3.2; OR_{K10} 8.8, 95%CI 3.3-23.7) and smoking (OR_{CESD-10} 4.9, 95%CI 2.5-9.7; OR_{K10} 3.6, 95%CI 1.7-10.9) were predictors of screening positive for depression and psychological distress. Non-white ethnicity was predictive of psychological distress (OR_{K10} 5.9, 95%CI 2.0-17.0). Low income (OR_{SRMH} 5.2, 95%CI 2.1-12.8) and multimorbidity (OR_{SRMH} 18.5, 95%CI 2.2-153.3) were predictors for low SRMH. Education, marital status and alcohol consumption were not found to be predictive of mental health outcomes.

Conclusion/Implications: Participants with a history of gynecologic cancer are at increased risk of depression, particularly those faced with additional socioeconomic challenges and multimorbidity. Further research is required to address the mental health needs of patients with gynecologic cancers and to identify strategies towards sustained support throughout diagnosis and survivorship.

SO009 / #656

Topic: *AS03. Cervical Cancer*

UTILIZATION AND OUTCOMES OF SENTINEL LYMPH NODE BIOPSY (SLNBX) FOR PATIENTS WITH CERVICAL CARCINOMA; A MULTICENTER DATABASE ANALYSIS.

FOCUSED PLENARY 02: SURGERY

Dimitrios Nasioudis, Stefan Gysler, Nawar Latif, Emily Ko, Lori Cory, Robert Giuntoli li, Fiona Simpkins, Sarah Kim
University of Pennsylvania, Division Of Gynecologic Oncology, Philadelphia, United States of America

Introduction: Investigate the utilization and outcomes of SLNBx algorithm for patients with cervical carcinoma.

Methods: Patients diagnosed between 2012-2019 with cervical carcinoma who underwent hysterectomy with SLNBx or systematic lymphadenectomy (sLND) (defined as at least 10 LNs removed) were identified in the National Cancer Database. LN metastasis rates were calculated following stratification by tumor size. Overall survival (OS) was evaluated after controlling for confounders.

Results: A total of 15711 patients were identified; 1710 (10.9%) had SLNBx. Utilization of SLNBx steadily increased from 2.7% in 2012 to 19.5% in 2019. Patient who had SLNBx were more likely to undergo simple hysterectomy (49.7% vs 44.5%, $p<0.001$), and minimally-invasive surgery (74.4% vs 56.3%, $p<0.001$). Rate of SLNBx was 12.8% for tumors ≤ 2 cm compared to 9% and 6.9% for those 2-4 and >4 cm, $p<0.001$. Rate of LN metastasis was comparable between the two groups for tumors ≤ 2 cm (6% vs 6.2%, $p=0.83$), 2-4 cm (20.9% vs 19.6%, $p=0.54$) and >4 cm (33.2% vs 28.3%, $p=0.22$). After controlling for mode and type of hysterectomy, SLNBx was associated with lower likelihood of prolonged hospital stay (OR 0.37, $p<0.001$). After controlling for confounders, SLNBx was not associated with worse OS for tumors ≤ 2 cm (HR:1.0, 95% CI: 0.64, 1.55), 2-4 cm (HR 1.30, 95% CI: 0.89, 1.90), or > 4 cm (HR: 0.60, 95% CI: 0.34, 1.04).

Conclusion/Implications: SLNBx is rapidly incorporated in the management of patients with cervical cancer with no detrimental effect on survival or detection rates of LN metastasis, and improved peri-operative outcomes.

SO010 / #1243

Topic: *AS04. Endometrial/Uterine Corpus Cancers*

RISKS AND BENEFITS OF A NATIONAL ADOPTION OF SENTINEL NODE MAPPING IN LOW AND INTERMEDIATE RISK ENDOMETRIAL CANCER – THE SENTIREC-ENDO STUDY

FOCUSED PLENARY 02: SURGERY

Sarah Bjørnholt¹, Sara Sponholtz², Ole Mogensen¹, Kirsten Bouchelouche³, Erik Parner⁴, Gudrun Neumann⁵, Kirsten Jochumsen⁵, Bushra Hamid⁶, Morten Davidsen⁶, Signe Bjørn⁷, Katja Dahl¹, Pernille Jensen¹

¹Aarhus University Hospital, Department Of Gynecology And Obstetrics, Aarhus, Denmark, ²Faculty of Health Science, University of Southern Denmark, Department Of Clinical Research, Odense, Denmark, ³Aarhus University Hospital, Department Of Clinical Medicine - Nuclear Medicine And Pet, Aarhus, Denmark, ⁴Aarhus University, Department Of Public Health And Biostatistics, Aarhus, Denmark, ⁵Odense University Hospital, Department Of Gynecology And Obstetrics, Odense, Denmark, ⁶Herlev Hospital, Department Of Gynecology And Obstetrics, Herlev, Denmark, ⁷Copenhagen University Hospital, Rigshospitalet, Department Of Gynecology And Obstetrics, Copenhagen, Denmark

Introduction: Surgical staging of endometrial cancer (EC) serves to allocate women with lymph node metastases to adjuvant treatment. Sentinel lymph node (SLN) mapping can accurately detect lymph node metastases in women with EC of low- or intermediate-risk (LR or IR) of lymph node metastases. We aim to investigate risks and benefits of a national protocolled adoption of SLN mapping to women with LR and IR EC, in a real-life clinical setting.

Methods: A national multicenter prospective study of SLN-mapping in women with LR and IR EC from March 2017-February 2022. Postoperative complications were classified according to Clavien-Dindo. Lymphoedema was evaluated by validated patient-reported outcome measures at baseline and three months postoperatively.

Results: 627 women were included in the analyses, 458 with LR- and 169 with IR EC. The SLN detection rate was 94.3% (591/627). The overall incidence of lymph node metastases was 9.3% (58/627), 4.4% (20/458) in the LR- and 22.5% (38/169) in the IR group. Only 0.3% (2/627) experienced an intraoperative complication associated with the SLN procedure. The incidence of postoperative complications was 8% (50/627). The mean difference score of lymphoedema was below the threshold for clinical importance 4.3/100 (95%CI 2.6-5.9). The incidence of leg swelling and heaviness was low, 5.2% and 6.1%, respectively.

Conclusion/Implications: SLN mapping is a safe staging procedure in women with EC of LR and IR, carrying a very low risk of early lymphoedema, perioperative- and postoperative complications. The change in clinical practice contributed to improved treatment allocation for both risk groups and thus supports further international implementation.

SO011 / #834

Topic: *AS11. Ovarian Cancer*

DEVELOPMENT OF DEEP LEARNING-BASED AUTO-SEGMENTATION ALGORITHMS FOR PERITONEAL METASTASES USING COMPUTED TOMOGRAPHY IMAGE ANALYSIS OF OVARIAN CANCER

FOCUSED PLENARY 02: SURGERY

Se Ik Kim¹, Maria Lee¹, Jae-Weon Kim², Hyun Hoon Chung¹

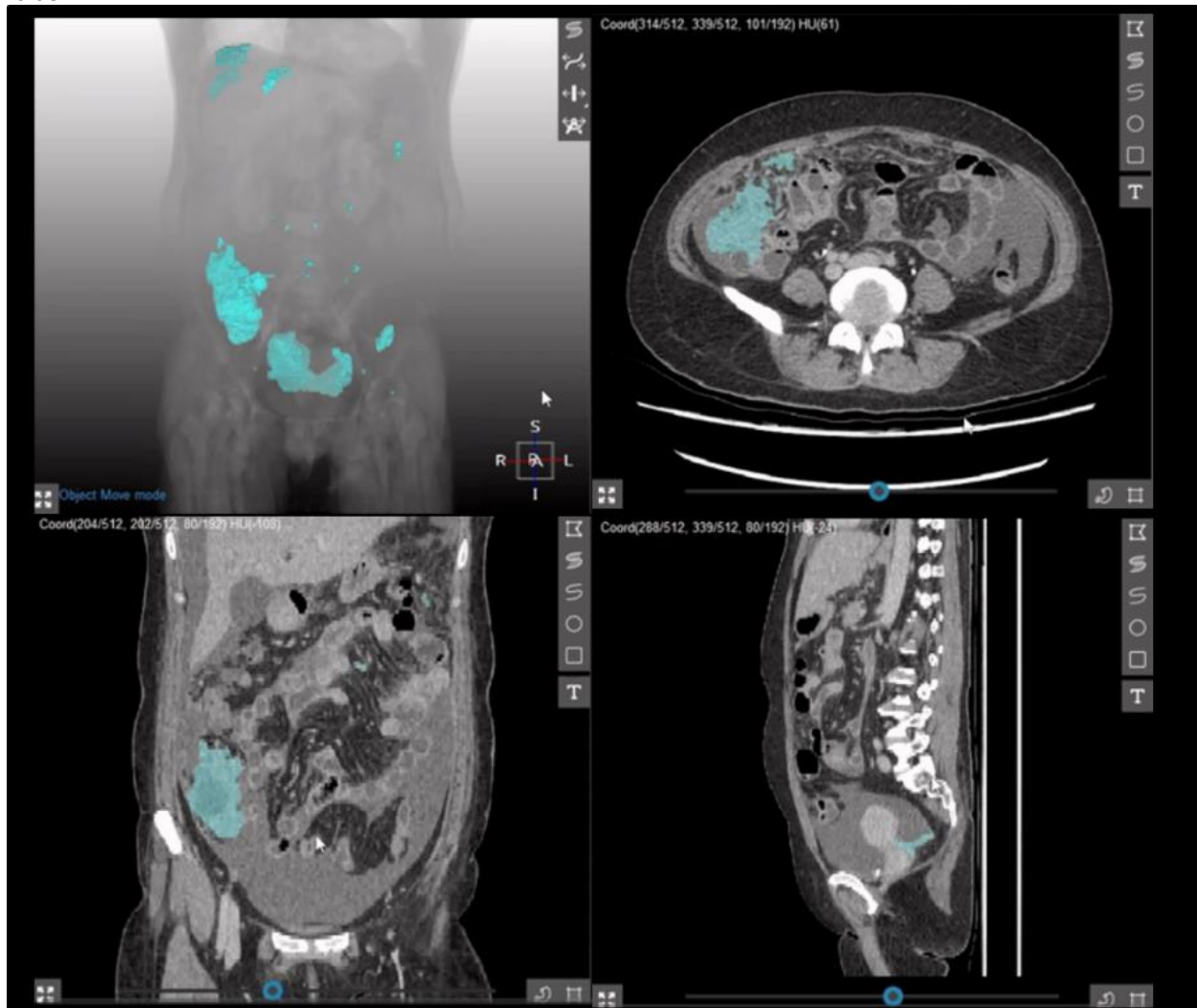
¹Seoul National University Hospital, Department Of Obstetrics And Gynecology, Seoul, Korea, Republic of, ²Seoul National University, Obstetrics And Gynecology, Seoul, Korea, Republic of

Introduction: To facilitate image-guided surgery in ovarian cancer, pre-treatment diagnosis of peritoneal metastases (PM) is essential. However, manual labeling and quantifying the whole PM lesions are impractical in clinical practice. Thus, we aimed to develop a deep learning-based auto-segmentation algorithm for PM using computed tomography (CT) scan images of newly diagnosed epithelial ovarian cancer.

Methods: We retrospectively collected pre-treatment CT scan images from patients with epithelial ovarian cancer who were treated at our institutional hospital. Patients were randomly assigned to training, development, and test sets with 8:1:1 ratio, and underwent 5-fold cross validation. The whole PM lesions in the abdominal-pelvic cavity of the training dataset were manually drawn by one radiologist. They also referred to surgical records and descriptions of PM lesions. 3D nnU-Net was selected as the deep-learning architecture. One radiologist manually drew the whole PM lesions in the abdominal-pelvic cavity in the test dataset twice and submitted them as references for validation.

Results: Mean age at initial diagnosis was 58.2 years, and 95.5% of the study population had FIGO stage IIIB-IVB diseases. Complete resection was achieved in 57.5% of the patients. The final model was validated using corresponding test dataset, and yielded the average Dice similarity coefficient (DSC), sensitivity, and precision as 83.1%, 83.1%, and 83.9%, respectively, across all

folds.



Conclusion/Implications: We successfully developed a deep learning-based auto-segmentation algorithm to identify and indicate PM lesions in ovarian cancer. This model will aid radiologists' reading and facilitate image-guided surgery for advanced-stage ovarian cancer in clinical practice.

SO012 / #773

Topic: *AS11. Ovarian Cancer*

COMPARISON THE OUTCOMES OF LARGE BOWEL SURGERY DURING MAXIMAL CYTOREDUCTIVE SURGERY FOR ADVANCED OVARIAN CANCER BETWEEN GYNECOLOGIC ONCOLOGY SPECIALIST AND GENERAL SURGEON: GORILLA-3006

FOCUSED PLENARY 02: SURGERY

Myeong-Seon Kim¹, A Jin Lee², Seung-Hyuk Shim², Eunbi Jang³, Nam Kyeong Kim⁴, Yeorae Kim⁴, Dong Hoon Suh⁵, Jeeyeon Kim⁶, Tae-Wook Kong⁶, Suk-Joon Chang⁶, Dong Won Hwang⁷, Soo Jin Park⁷, Hee Seung Kim⁷, Ji Geun Yoo⁸, Sung Jong Lee⁹, Yoo Young Lee¹⁰

¹St. Vincent's Hospital, The Catholic university of Korea, Obgy, Seoul, Korea, Republic of, ²Konkuk University Hospital, Obstetrics And Gynecology, Seoul, Korea, Republic of, ³Konkuk University School of Medicine, Obstetrics And Gynecology, Seoul, Korea, Republic of, ⁴Seoul National University Bundang Hospital, Department Of Obstetrics And Gynecology, Seongnam, Korea, Republic of, ⁵Seoul National University Bundang Hospital, Department Of Obstetrics And Gynecology, Seongnam-Si, Korea, Republic of, ⁶Ajou University Medical Center, Obstetrics And Gynecology, Suwon, Korea, Republic of, ⁷Seoul National University Hospital, Obstetrics And Gynecology, Seoul, Korea, Republic of, ⁸Daejeon St. Mary's hospital, Obstetrics And Gynecology, Daejeon, Korea, Republic of, ⁹Seoul St. Mary's Hospital, Obstetrics And Gynecology, Seoul, Korea, Republic of, ¹⁰Samsung Medical Center, Obstetrics And Gynecology, Seoul, Korea, Republic of

Introduction: We report the oncological outcomes in patients with advanced ovarian cancer who had bowel surgery which was performed by gynecologic oncologist (GO) during maximal cytoreductive surgery and compared the outcomes with those of bowel surgery performed by general surgeons (GS).

Methods: Patients who were FIGO stage I-IV ovarian cancer and had bowel surgery during maximal cytoreductive surgery were eligible. Patients were divided into two groups according to whether bowel resection was performed by GO or GS. In both groups, GO were mainly involved in debulking procedures. Perioperative and survival outcomes were compared between two groups.

Results: A total of 439 patients were eligible. 82 patients received large bowel surgery by GO, and 357 patients by GS. The proportion of patients who underwent PDS was higher in GO group than in GS group (80.5% vs 70.9%, $p = 0.057$). The residual disease after maximal cytoreductive surgery did not differ between two groups ($P = 0.281$). The distribution of anastomotic sites of large bowel resections were not different between two groups. There was no significant differences in progression-free and overall survival between two groups. In a multi-variate Cox analysis, Time of surgery (PDS vs. IDS, HR 2.124, 95%CI 1.037-4.348, $p = 0.039$) and residual diseases (R0 vs. non-R0, HR 2.133, 95%CI 1.001-4.547, $p = 0.050$) were associated with survivals. Bowel surgery specific complications did not differ between two groups.

Conclusion/Implications: Large bowel surgery performed by GO was feasible and safe. We showed equivalent oncological outcomes when compared with those by GS during maximal cytoreductive surgery for advanced ovarian cancer.

SO013 / #983

Topic: AS18. Surgical Techniques and Perioperative Management

INTRAOPERATIVE IDENTIFICATION OF OVARIAN CANCER DURING TUMOR REDUCTIVE SURGERY USING THE HAND-HELD MASPEC PEN TECHNOLOGY

FOCUSED PLENARY 02: SURGERY

Nicole Fleming¹, Michael Keating², Charlie Wolfe², Marta Sans³, Kelly Rangel¹, Esther Sey¹, Shannon Westin¹, Amir Jazaeri¹, Pamela Soliman¹, Jolyn Taylor¹, Tyler Hillman¹, Barrett Lawson⁴, Jinsong Liu⁴, Anil Sood¹, Livia Eberlin²

¹The University of Texas MD Anderson Cancer Center, Gynecologic Oncology, Houston, United States of America, ²Baylor College of Medicine, Surgical Oncology, Houston, United States of America, ³The University of Texas at Austin, Chemistry, Austin, United States of America, ⁴The University of Texas MD Anderson Cancer Center, Pathology, Houston, United States of America

Introduction: Real-time identification of metastatic ovarian cancer in vivo during tumor-reductive surgery (TRS) is challenging, especially for patients who have undergone neoadjuvant chemotherapy (NACT). In this study, we investigated the feasibility of using the hand-held MasSpec Pen (MSP) technology for intraoperative molecular analysis and tissue identification of metastatic sites during ovarian cancer TRS. The MSP is an innovative hand-held probe coupled to a mass spectrometer that non-destructively analyzes the metabolic composition of tissues in <20 seconds.

Methods: Patients with advanced high-grade serous carcinoma (HGSC) who received NACT and scheduled for interval TRS were consented prior to surgery. An orbitrap mass spectrometer equipped with a MSP source was placed ~5 m away from the operating table. In vivo MSP measurements were performed by gynecologic oncologists and ex vivo measurements were made by research personnel. Analysis sites were marked with surgical ink for pathological analysis. The data was used to build statistical classifiers.

Results: Twenty-seven patients with advanced HGSC underwent interval TRS with MSP analysis. We obtained rich metabolic data of tissues including ovary(n=27), fallopian tube(n=4) peritoneum(n=51), and omentum (n=16). The profiles were characterized by high relative abundance of small metabolites and glycerophospholipids, and consistent with prior data from ex vivo tissues. Direct correlation of intraoperative molecular analysis was made with final pathology. Accurate prediction of HGSC was achieved from several in vivo data samples.

Conclusion/Implications: Intraoperative data collection utilizing the hand-held MSP is feasible and can be used in combination with statistical analysis for real-time diagnosis during TRS to distinguish ovarian cancer from normal tissues.

SO014 / #493

Topic: *AS20. Symptom Management/Supportive Cancer Care*

PROSPECTIVE STUDY ASSESSING QUALITY OF LIFE IN PATIENTS WITH RECURRENT PELVIC MALIGNANCIES WHO UNDERWENT PELVIC EXENTERATIONS, STRATIFIED BY TYPE OF URINARY DIVERSION

FOCUSED PLENARY 02: SURGERY

Sara Moufarrij¹, Christian Dagher¹, Olga Filippova¹, Qin Zhou², Alexia Iasonos², Nadeem Abu-Rustum¹, Jennifer Mueller¹, Mario Leitao¹, Jaspreet Sandhu³, Bernard Bochner³, Jeanne Carter⁴, Dennis Chi¹, Yukio Sonoda¹

¹Memorial Sloan Kettering Cancer Center, Surgery, New York City, United States of America, ²Memorial Sloan Kettering Cancer Center, Epidemiology And Biostatistics, New York City, United States of America, ³Memorial Sloan Kettering Cancer Center, Urology, New York City, United States of America, ⁴Memorial Sloan Kettering Cancer Center, Psychiatry, New York City, United States of America

Introduction: With recent advances, pelvic exenteration (EXT) can offer potentially curative options for recurrent malignancies but remains highly morbid.

Methods: Patients with recurrent malignancies scheduled for EXT were interviewed pre-EXT, at 3-,6-,12-months post-EXT (mos), and annually until 5 years(yr) using the European Organization for Research and Treatment of Cancer (EORTC)-QLQ-C30, and -BLM-30 questionnaires. Scores are reported as median (IQR).

Results: Out of 53 patients, 29(55%) had continent urinary diversion (CD) and 24(45%) had non-continent diversion (NCD) procedures. Median age was 61(50-68) years. Cancer sites included vagina 8(15%), cervix 20(38%), uterus 13(25%), vulva 10(19%), and ovary 1(2%). Overall QOL and global health status improved significantly by 1yr when compared to baseline ($p=0.008$) (Fig.1). High body image scores, indicative of negative self-image, improved to baseline for the entire cohort 1yr post-EXT (Fig.2). When stratified based on diversion, body image scores remained lower in CD compared to NCD. Physical function scores at 3-mos declined by 15(11-21) points from baseline ($p<0.001$) and returned to baseline at 2yrs, however remained higher for CD than NCD ($p=0.048$). Similarly, social function scores at 3yrs were higher for CD versus NCD (100 (IQR:83-100) versus 89(IQR:67-83), $p=0.002$). Three-mos fatigue scores increased by 11(14-19) points from baseline ($p=0.01$) and were lower for CD (17(IQR:0-25)) compared to NCD (33(IQR:22-33)) ($p=0.04$).

1a.

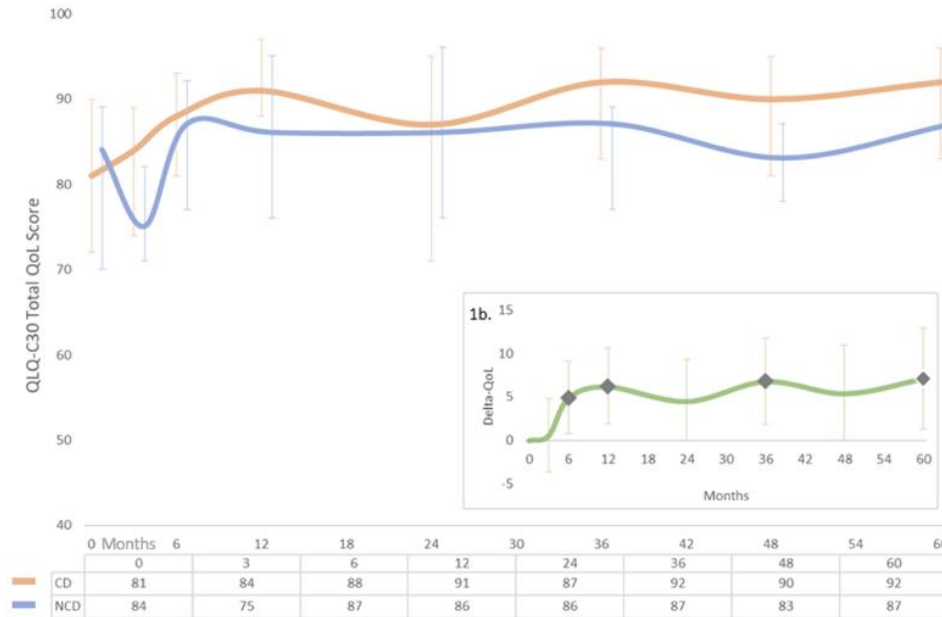


Figure 1a: QoL score evolution for CD vs NCD patients during the study period.

Figure 1b: Delta-QoL Score comparing scores at each timepoint to baseline for the entire cohort (timepoints highlighted in dark gray are significant after adjustment for multiple comparisons).

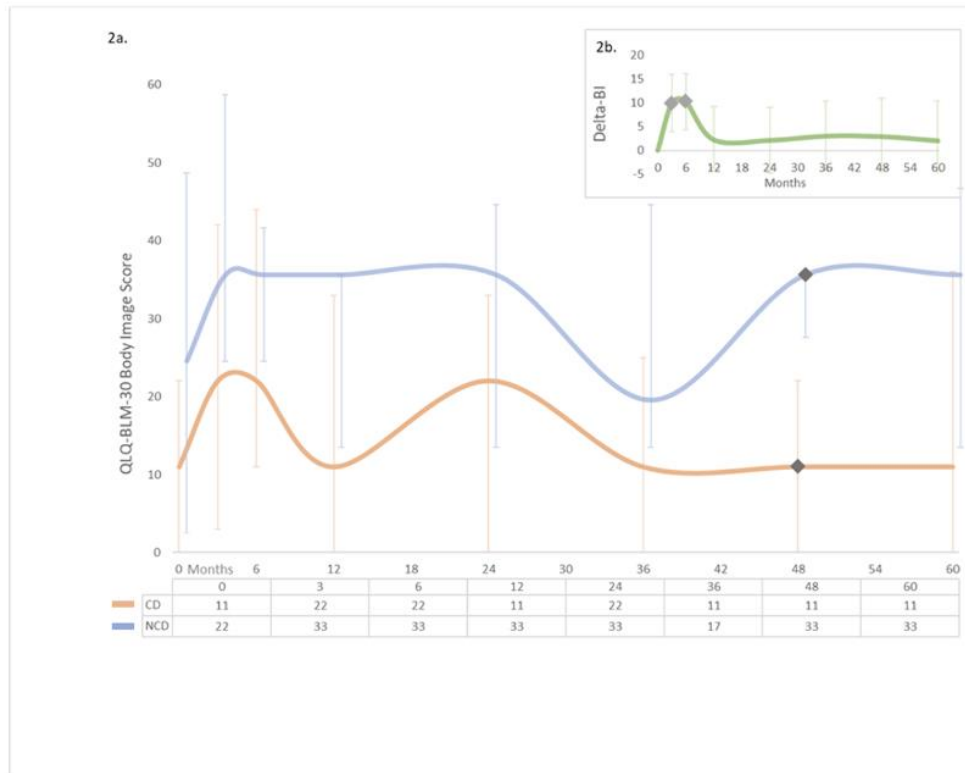


Figure 2a: Body Image (BI) score evolution with time for patients with CD and NCD (timepoints highlighted in dark gray are significant before adjustment for multiple comparisons)

Figure 2b: Delta-BI score comparing scores at each timepoint to baseline for the entire cohort (timepoints highlighted in dark gray are significant after adjustment for multiple comparisons)

Conclusion/Implications: Type of urinary diversion affects QoL in patients undergoing EXT. CD was associated with better body image, physical and social functions. These findings can help with preoperative counseling and postoperative management to provide patients the needed resources for a better quality of life.

SO016 / #846

Topic: *AS04. Endometrial/Uterine Corpus Cancers*

DEEP LEARNING FOR SPATIAL DISTRIBUTION OF TERTIARY LYMPHOID STRUCTURES (TLS) AND EFFICACY OF IMMUNOTHERAPY FOR ENDOMETRIAL CANCER

CLOSING SESSION: THE DEVELOPMENT OF PROGNOSIS AND PREDICTIVE MARKERS

Junzo Hamanishi¹, Haruka Suzuki¹, Akihiko Ueda¹, Ken Yamaguchi¹, Masaki Mandai²

¹Kyoto University Graduated School of Medicine, Gynecology And Obstetrics, Kyoto, Japan, ²Graduate School of Medicine, Kyoto University, Gynecologic Oncology, Kyoto, Japan

Introduction: Tertiary lymphoid structures (TLSs) are known to be a marker of peripheral inflammation in several cancer types, there is no evidence of clinical benefit of immune checkpoint inhibitor (ICI) and special interplay pattern of TLS in endometrial cancer.

Methods: We developed an artificial intelligence (AI)-based TLSs detection program using transfer learning DeepLabV3 and performed spatial analyses of TLSs in 958 tiles from tumor samples of 258 endometrial cancer patients. And we applied this AI-based program to evaluate the relationship between spatial distribution (according to distance from tumor burden) of TLSs and survival rate or antitumor effect of immune checkpoint inhibitors for endometrial cancer patients.

Results: A deep learning-based program that automatically recognized TLS in tumor samples showed high accuracy agreement rate (92%) for evaluation data. In 104 patients with endometrial cancer, TLSs were detected in 78% of patients, and the patients with TLSs far from tumor burden (extra-TLSs) showed more favorable progression free survival than the patients TLSs near from tumor burden (peri-TLSs) ($p < 0.004$). Besides, among 12 endometrial cancer patients treated with anti-PD-1 antibody pembrolizumab, clinical response rate of patients were 80% (4 of 5 patients with extra-TLSs : 2 complete response and 2 partial response [PR]) versus 14% (1 of 7 patients without extra-TLSs: , 1PR).

Conclusion/Implications: Spatial distribution of TLSs may be closely related to patients' survival, and extra-TLSs may represent local immune status in tumor microenvironment of endometrial cancer.

SO017 / #193

Topic: *AS04. Endometrial/Uterine Corpus Cancers*

IDENTIFICATION OF P53 SUBCLONE IMPROVES IMMUNOHISTOCHEMISTRY AND NGS AGREEMENT IN ENDOMETRIAL CARCINOMA AND PREDICTS GOOD PROGNOSIS

CLOSING SESSION: THE DEVELOPMENT OF PROGNOSIS AND PREDICTIVE MARKERS

Yan Xu¹, Yangyang Jiang¹, Yanjiao Hu², Han Zhao², Jinwen Jiao¹, Qin Yao¹

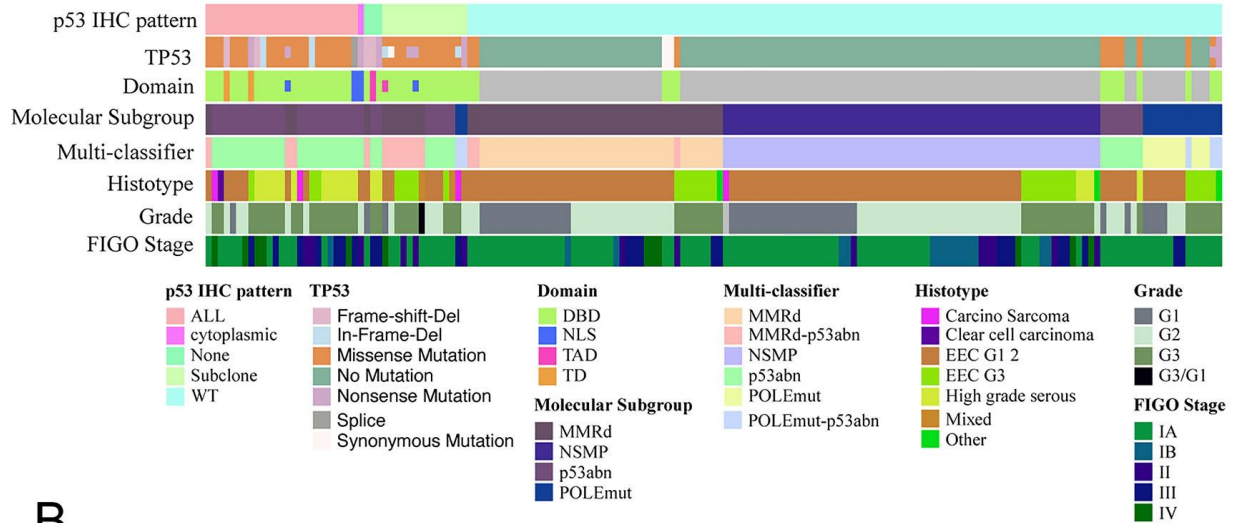
¹The Affiliated Hospital of Qingdao University, Department Of Obstetrics And Gynecology, Qingdao, China, ²The Affiliated Hospital of Qingdao University, Department Of Pathology, Qingdao, China

Introduction: Using the p53 immunohistochemical staining pattern (IHC) as a marker of TP53 gene mutation, IHC and next-generation sequencing (NGS) have a high agreement in ovarian cancer, but the agreement in endometrial cancer (EC) remains to be improved. In addition to overexpression, non-expression, and cytoplasmic expression, there is also subclonal abnormal expression pattern of p53 immunohistochemical abnormality in endometrial cancer. However, there are few studies on subclonal expression in endometrial cancer.

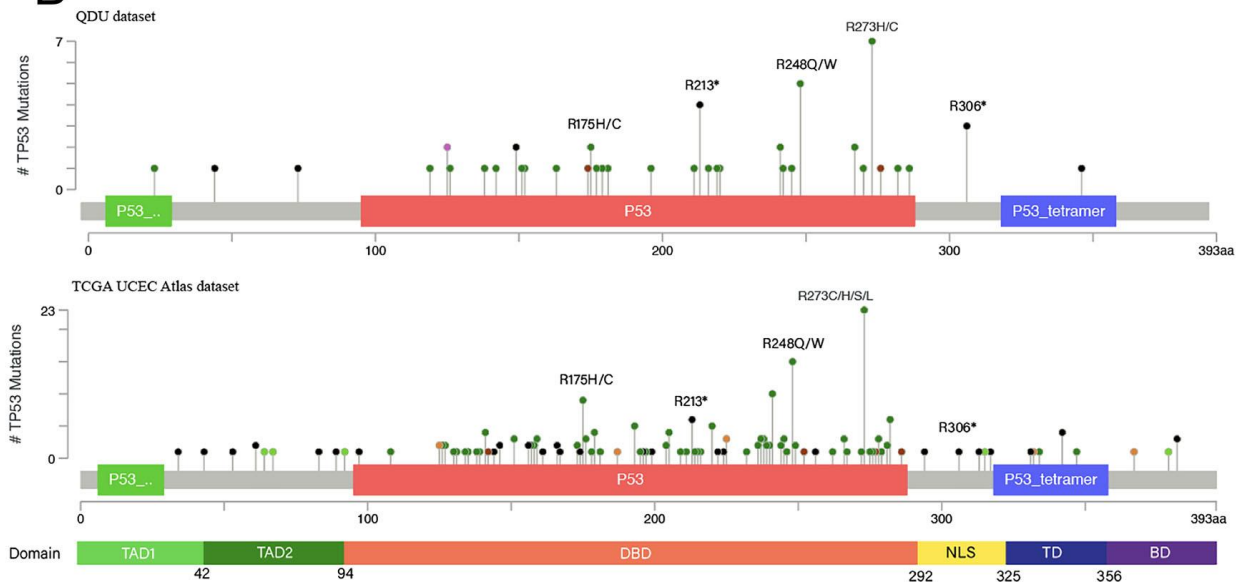
Methods: A total of 1869 patients who underwent surgical treatment for ECs between January 2019 and November 2022 were included in the study. Of these, 167 patients with both p53 immunohistochemistry and TP53 NGS results were further analyzed.

Results: Abnormal p53 subclonal staining was observed in 14 cases (8.4%) of ECs, and the agreement increased from 80.2% to 93.4% after the identification of subclonal types. IHC and NGS detected disagreement in 11 cases, all of which were missense mutations in the DBD (DNA binding domain). Among the 14 subclonal cases, 9 cases were POLEmut-p53abn or MMRd-p53abn multimolecular typing, and 5 cases were p53abn. Excluding the POLEmut/MMRd agreement reached 95.0%. The subclones had better prognosis compared with other p53 abnormal patterns and wild type ($p < 0.05$).

A



B



C

	n of samples (%)	
	Mismatch	Match
Transactivation Domain	0 (0)	2 (100%)
DNA-Binding Domain	11 (18%)	50 (82%)
Nuclear Localization Domain	0 (0)	4 (100%)
Oligomerization Domain	0 (0)	2 (100%)
Splicing	0 (0)	1 (100%)
	11 (16%)	59 (84%)

D

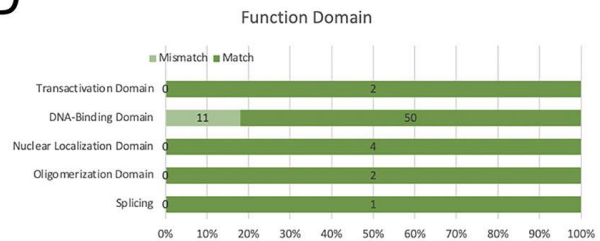


Figure 1. Clinical, molecular, histopathological characteristics and TP53 mutations frequency and domain site of 167 EC patients. A. Clinical, molecular, and histopathological characteristics of 167 EC patients, some patients have detected more than one mutation, so the table will show multiple colors. B. In this study and TCGA UCEC datasets, each identified TP53 mutation is shown as a lollipop plot along the protein domain, showing positions and counts. C,D. Matching and mismatching situations between p53 IHC staining and NGS mutation in each domain.

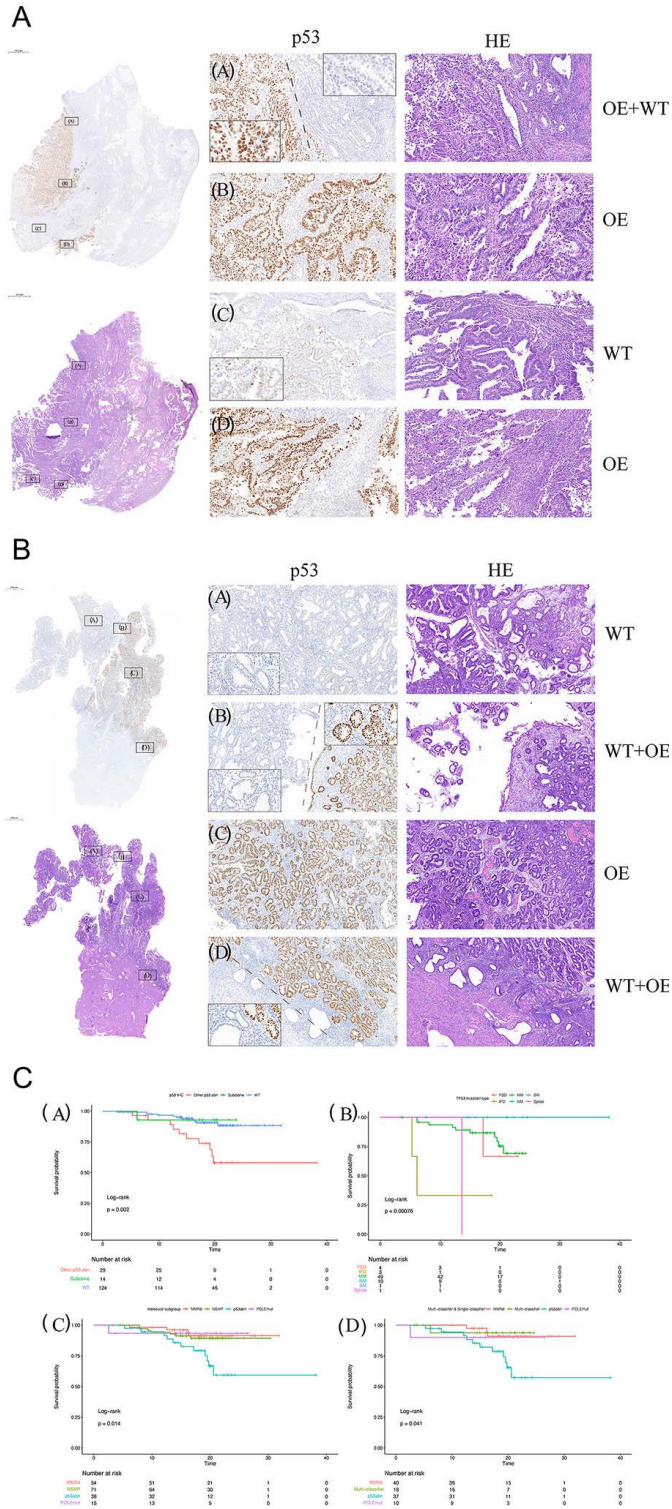


Figure 2 p53 IHC subclonal expression predicts good prognosis in endometrial carcinoma. A. A mixed case (high grade serous and EEC), though the gene tests as missense mutations in the DBD domain (V216M, R175H), but the p53 stain shows a combination of diverse p53 staining patterns and clear boundaries can be observed, which is a subclonal type classified as MMRd-p53abn. P53 IHC changed from WT to subclonal abnormal expression, which is consistent with the results of gene sequencing. *EEC, endometrioid endometrial cancer; DBD domain, DNA-binding domain. B. A case of EEC1-2 without POLEmut or MMRd, is detected of missense mutation (H193L) in the DBD domain and classified as p53abn. It has two different p53 patterns in the same slice, which is convinced as subclonal expression, instead of initially diagnosed with WT (focal overexpression), it is considered agreement. C. Prognostic relevance of p53 IHC and molecular classifier. (A). p53 subclone with other p53 abnormal patterns (overexpression, null, cytoplasmic) and wild type. (B). Comparison of TP53 mutation types. (C) Single-classifier of EC according to WHO standards. (D). Comparison of Multi-classifier (POLEmut-p53abn and MMRd-p53abn) and Single-classifier.

Conclusion/Implications: Recognize the p53 subclonal staining pattern in EC is the main reason affecting agreement. Accurately identifying abnormal subclonal expression can improve the agreement of p53 IHC and TP53 NGS in endometrial cancer. The p53 IHC subclone is associated with POLEmut-p53abn or MMRd-p53abn multi-molecular typing and may have a good prognosis.

SO018 / #362

Topic: **AS04. Endometrial/Uterine Corpus Cancers**

MOLECULAR CLASSIFICATION OF ENDOMETRIAL CANCERS (EC) AND ASSOCIATION WITH RELAPSE-FREE SURVIVAL (RFS) OUTCOMES: ANCILLARY ANALYSIS OF GOG-0258

CLOSING SESSION: THE DEVELOPMENT OF PROGNOSIS AND PREDICTIVE MARKERS

Aine Clements¹, Danielle Enserro², Kyle Strickland³, Rebecca Previs⁴, Paul Disilvestro⁵, Nick Spirtos⁶, Casey Cosgrove⁷, Greg Sfakianos⁸, J Liu⁹, Roberto Vargas¹⁰, Mark Shahin¹¹, Bradley Corr¹², Linda Van Le¹³, Frederick Ueland¹⁴, David Warshal¹⁵, Jessica Gillen¹⁶, Angeles Alvarez Secord¹⁷
¹OhioHealth, Ob/gyn, Columbus, United States of America, ²Roswell Park, Clinical Trials Development, Buffalo, United States of America, ³Duke University, Pathology, Durham, United States of America, ⁴Labcorp, Medical Affairs, Chapel Hill, United States of America, ⁵Women and Infants, Gynecologic Oncology, Providence, United States of America, ⁶Women's Cancer Center of Nevada, Gynecologic Oncology, Las Vegas, United States of America, ⁷The Ohio State University, Gynecologic Oncology, Columbus, United States of America, ⁸Piedmont Columbus Midtown JBACC Medical Oncology, Gynecologic Oncology, Columbus, United States of America, ⁹Cancer Research Consortium of Michigan, Gynecologic Oncology, Ann Arbor, United States of America, ¹⁰Women's Health Institute at The Cleveland Clinic, Gynecologic Oncology, Cleveland, United States of America, ¹¹Hanjani Institute for Gynecologic Oncology Abington Memorial Hospital, Gynecologic Oncology, Abington, United States of America, ¹²University of Colorado, Obstetrics And Gynecology, Aurora, United States of America, ¹³University of North Carolina at Chapel Hill, Gynecologic Oncology, Chapel Hill, United States of America, ¹⁴University of Kentucky, Gynecologic Oncology, Lexington, United States of America, ¹⁵Cooper Hospital University Medical Center, Gynecologic Oncology, Camden, United States of America, ¹⁶Cancer Research for the Ozarks, Gynecologic Oncology, Springfield, United States of America, ¹⁷Duke University, Gynecologic Oncology, Durham, United States of America

Introduction: Determine whether molecular classification using mismatch repair (MMR) and p53 protein expression predicts RFS in EC patients treated with chemotherapy and radiation (CRT) versus chemotherapy (CT).

Methods: GOG-0258 was a phase III, randomized trial (NCT00942357) comparing CRT and CT with primary endpoint of RFS. Immunohistochemistry was performed to determine MMR and p53 status. Demographic variables were compared with chi-squared and Kruskal Wallis tests for categorical and continuous variables, respectively. Kaplan-Meier curves estimated RFS between sub-groups. Adjusted Cox proportional hazards models estimated hazard ratios and 95% confidence limits.

Results: Using a modified ProMiSe algorithm, 27.4% of EC classified as dMMR, 49% p53wt, and 23.6% p53abn. p53abn tumors were more frequent in older ($p < 0.001$ ADD p-value) and Black ($p < 0.001$ ADD p-value) patients, and those with serous histology ($p < 0.001$ ADD p-value). In contrast, dMMR was more common in Non-Hispanic patients (ADD p-value $p = 0.025$) and endometrioid cancers ($p < 0.001$ ADD p-value). 5-year RFS was significantly worse for those with p53abn [28.8% vs 68.9% vs 57.5%; HR=3.39 (2.34-4.91); $p < 0.001$] compared to p53wt (referent) and dMMR ECs. After adjusting for age, gross residual disease, and treatment, p53wt was associated with improved RFS in the CRT compared to CT group [77.2% vs 59.7%; HR=0.54 (0.32-0.94); $p = 0.02$]. The 5-year RFS with CRT versus CT were similar for those with p53abn [29.3% vs 29.4%; 0.76 (0.46-1.24)] and dMMR [52.5% vs 63.7% (0.70-2.57)] ECs.

Conclusion/Implications: Molecular classification is prognostic in EC, with worse RFS in p53abn tumors. In an exploratory analysis, p53wt appears to be predictive for treatment efficacy favoring CRT over CT. Further trials are warranted to confirm these findings.

SO020 / #114

Topic: *AS16. Screening/Early Detection*

PIVOTAL CLINICAL STUDY TO EVALUATE THE EFFICACY AND SAFETY OF ASSISTIVE ARTIFICIAL INTELLIGENCE-BASED SOFTWARE FOR CERVICAL CANCER DIAGNOSIS

CLOSING SESSION: THE DEVELOPMENT OF PROGNOSIS AND PREDICTIVE MARKERS

Seongmin Kim¹, Sanghoon Lee², Jae Yun Song²

¹CHA Ilsan Medical Center, Gynecologic Oncology Center, Goyang-si, Korea, Republic of, ²Korea University College of Medicine, Obstetrics & Gynecology, Seoul, Korea, Republic of

Introduction: The accuracy of colposcopy depends on the skill and proficiency of the colposcopist. This study evaluated the feasibility of an artificial intelligence (AI) system as an assistive tool for diagnosing high-grade cervical intraepithelial neoplasia lesions compared to the human interpretation of cervical images

Methods: This two-centered, crossover, double-blind, randomized controlled trial included 886 randomly selected images. Four colposcopists (two proficient and two inexperienced) independently evaluated the cervical images once with and without the aid of the Cerviray AI® system (AIDOT, Seoul, Korea).

Results: The AI aid demonstrated improved areas under the curve on the localization receiver-operating characteristic curve compared with the colposcopy impressions of colposcopists (difference 0.12, 95% confidence interval [CI], 0.10 – 0.14, p-value < 0.001). Sensitivity and specificity also improved on using AI system (89.18% vs. 71.33%; p < 0.001, 96.68% vs. 92.16%; p < 0.001, respectively). Additionally, the classification accuracy rate improved with the aid of AI (86.40% vs. 75.45%; p < 0.001).

Conclusion/Implications: This study highlights the feasibility of using an AI system as an effective assistive tool for both proficient and inexperienced colposcopists in cervical cancer screening. AI interpretation can be used as an assisting tool in combination with human colposcopic evaluation of the exocervix.

SO021 / #370

Topic: *AS06. Genetics and Epidemiology*

IMMEDIATE GERMLINE SEQUENCING IS SUPERIOR TO MULTI-STEP SCREENING STRATEGIES FOR IDENTIFYING LYNCH SYNDROME IN WOMEN WITH SYNCHRONOUS/METACHRONOUS ENDOMETRIAL AND COLORECTAL CANCERS

CLOSING SESSION: THE DEVELOPMENT OF PROGNOSIS AND PREDICTIVE MARKERS

Angel Chao¹, Chyong-Huey Lai¹, Ren-Chin Wu²

¹Chang Gung Memorial Hospital, Obstetrics And Gynecology, Guishan, Taiwan, ²Chang Gung Memorial Hospital, Pathology, Guishan, Taiwan

Introduction: We investigated whether two-step testing strategies – consisting of multiplex ligation-dependent probe amplification, somatic mutation screening in cancer tissues, and microsatellite instability analysis – can improve the detection of LS in this clinical population. We also compared the clinical characteristics and overall survival (OS) of women with and without a final diagnosis of LS.

Methods: A total of 31 Taiwanese women with synchronous or metachronous endometrial and colorectal malignancies underwent both universal screening – consisting of immunohistochemistry for mismatch repair protein expression, MLH1 promoter methylation analysis, and germline mutation testing – and two-step testing for the detection of LS.

Results: On applying traditional universal screening, the prevalence of LS in the study patients was 16.1% (5/31). Interestingly, the application of extensive two-step molecular testing was able to identify three previously undetected cases. Patients with and without LS in our cohort did not differ significantly both in terms of clinical characteristics and OS.

Conclusion/Implications: The application of extensive two-step molecular testing may increase the identification of cases that have been previously undetected on traditional universal screening. Patients with and without LS were found to be similar both in terms of clinical characteristics and OS.

SO022 / #851

Topic: *AS11. Ovarian Cancer*

DEVELOPMENT OF NEXT-GENERATION RNA SEQUENCING-BASED DEEP-LEARNING MODELS TO PREDICT CHEMORESISTANCE RISK IN HIGH-GRADE SEROUS OVARIAN CARCINOMA

CLOSING SESSION: THE DEVELOPMENT OF PROGNOSIS AND PREDICTIVE MARKERS

Se Ik Kim¹, Dong Won Hwang², Maria Lee¹, Yong-Sang Song¹

¹Seoul National University Hospital, Department Of Obstetrics And Gynecology, Seoul, Korea, Republic of, ²Seoul National University Hospital, Obstetrics And Gynecology, Seoul, Korea, Republic of

Introduction: To implement precision cancer medicine in ovarian cancer, precise prediction of treatment response and identification of patients at high risk of disease recurrence are the first steps. Thus, we aimed to develop a next-generation RNA sequencing-based deep-learning model predicting chemoresistance risk in high-grade serous ovarian carcinoma (HGSCC).

Methods: We conducted next-generation RNA sequencing on fresh-frozen, chemotherapy-naïve primary HGSOC tissues from 86 patients. Patients were randomly divided into training and test sets at a 1:1 ratio. In the model development phase, transcriptomic data from both the training set and The Cancer Genome Atlas HGSOC patients (n=419) were used. Using genes selected by the gene expression ratio analysis, we constructed and trained a deep neural network (DNN). Multiple DNN models were combined to build average ensemble models, which were further validated using the test set in the validation phase.

Results: All patients in the study population received platinum-based combination chemotherapy: 15 and 71 were identified as chemoresistant and chemosensitive, respectively. Based on the gene expression ratio between chemoresistant and chemosensitive groups, we selected the top 70 genes with high expression ratios. Machine learning algorithms were applied to develop and train DNNs of the selected genes. Then, the five-fold average ensemble models were developed. Among the various ensemble models, the best model predicted chemoresistant cases with high accuracy (AUC, 0.925).

Conclusion/Implications: We successfully developed next-generation RNA sequencing-based deep-learning models to predict chemoresistance risk after first-line platinum-based chemotherapy in HGSOC. These newly developed models would help the individualized management of HGSOC patients.