Abstract #999 Figure 1 ROC curves for logistic models including cg16767801 (in blue), or cg23642047 (in green) or both (in red) as predictors and all cases (A), cancer (B) or CIN3 (C, D) as outcome. Models were fitted on 1,000 training sets with 80% of the cases and 80% of the controls and performances were evaluated on a test set with the remaining 20% of participants. The pointwise average, 5th and 95th percentiles of the True and False Positive Rates and Area Under the Curve (AUC) are reported. Results presented in panels A, B and C were obtained using our study population (N=114 controls, N=73 CIN3 cases and N=54 cancer cases). An independent validation set (accession number GSE14375s, with N=54 controls and N=42 CIN3 cases) was used in panel D.

Disclosures This work was funded by NIHR and the Wellcome Trust. The authors have no conflicts of interest to declare.

03. Endometrial cancer

#196 ARTIFICIAL INTELLIGENCE-BASED MODEL FOR TRANSVAGINAL ULTRASOUND EARLY DETECTION OF ENDOMETRIAL ATYPICAL HYPERPLASIA AND ENDOMETRIAL CANCER IN WOMEN WITH POSTMENOPAUSAL BLEEDING

Ilaria Capasso*, Giuseppe Cucinella, Hiroaki Takahashi, Luigi Antonio De Vitis, Adriana Gregory, Bohyun Kim, Evelyn Reynolds, Darryl Wright, Gretchen Glaser, Carrie Langstraat, Abimbola Famuyide, Daniel Breitkopf, Andrea Mariani, Timothy Kline. Mayo Clinic, Rochester, Mn, USA

Methodology 300 patients with PMB were enrolled. All patients underwent TVUS and endometrial sampling within three months from TVUS. Manual segmentation of the endometrium on two static images for each patient was performed independently by two radiologists. Patients were classified into cohort A (EAH/EC) and cohort B (benign) based on the endometrial sampling report. A fully automated segmentation model (ASE) was developed. For the second phase, radiomic features were calculated from the regions-of-interest and individual feature analysis was evaluated. These features were also used to train a wide range of machine learning-based classifiers.

Results ASE-reader agreement shows similar performance to inter-reader agreement (ASE-Reader agreement: Dice similarity of 0.79±0.21). For the classification task, the deep learning model identified 92 features related to image texture and pixel intensity that were significantly different between cohort A and B. The top performing classifier model was a Support Vector Classifier using Minimum Redundancy Maximum Relevance feature selection. For the 3-fold evaluation, the AUC was 0.90 [0.88–0.92] for validation, and 0.88 [0.86–0.91] on the hold-out test set.

Conclusion We have trained an AI-based algorithm to differentiate EAH/EC from benign conditions based on TVUS images in a PMB population. Based on our preliminary results, we plan to expand this work in larger cohorts and evaluate the AI model in external datasets.

#434 ASSOCIATION BETWEEN ENDOMETRIOSIS AND ENDOMETRIAL CANCER: A REAL WORLD EVIDENCE STUDY

Alberto Farolfi*, Sara Testoni, Francesca Rusconi, Nicola Gentili, Ilaria Massa, Valentina Danesi, Amelia Altavilla, Maria Concetta Cursano, Salvatore Luca Burgio, Gema Hernandez Ibarburu, Ugo De Giorgi. IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST), Meldola, Italy; TriNetX, Cambridge, USA

Introduction/Background Postmenopausal vaginal bleeding (PMB) is usually the first manifestation of endometrial cancer (EC) and endometrial atypical hyperplasia (EAH). Transvaginal ultrasound (TVUS) is often the first diagnostic step for PMB. Although TVUS has a high sensitivity, specificity is low and a high rate of invasive biopsy procedures are performed, the majority of which are found negative on pathologic evaluation. This study developed an Artificial Intelligence (AI) model based on TVUS images to improve the accuracy of TVUS in EAH/EC early recognition in patients with PMB.

Abstract #196 Figure 1

Results ASE-reader agreement shows similar performance to inter-reader agreement (ASE-Reader agreement: Dice similarity of 0.79±0.21). For the classification task, the deep learning model identified 92 features related to image texture and pixel intensity that were significantly different between cohort A and B. The top performing classifier model was a Support Vector Classifier using Minimum Redundancy Maximum Relevance feature selection. For the 3-fold evaluation, the AUC was 0.90 [0.88–0.92] for validation, and 0.88 [0.86–0.91] on the hold-out test set.

Conclusion We have trained an AI-based algorithm to differentiate EAH/EC from benign conditions based on TVUS images in a PMB population. Based on our preliminary results, we plan to expand this work in larger cohorts and evaluate the AI model in external datasets.
06. Ovarian cancer

INFLUENCE OF PREDICTIVE FEATURES ON THERAPY RESPONSE AND SURVIVAL IN HIGH-GRADE SEROUS OVARIAN CANCER PATIENTS BY GERMLINE BRCA MUTATION STATUS: AN UPDATE FROM THE AUSTRALIAN OVARIAN CANCER STUDY

Tibor A Zwirel*, 1,Sian Fereday, 1,Dinuka Ariyaratne, 1,Laura Twomey, 1,Nadia Traficante, 1,12Ellen L Goode, 1,2,3,4,5,6,7Anna Defazio, 1,3,4,5,6,7David DL Bowtell, 1,3,4,5,6,7Dale T Tibor A Zwirel*, 1,Sian Fereday, 1,Dinuka Ariyaratne, 1,Laura Twomey, 1,Nadia Traficante, 1,12Ellen L Goode, 1,2,3,4,5,6,7Anna Defazio, 1,3,4,5,6,7David DL Bowtell, 1,3,4,5,6,7Dale T

Introduction/Background Pathogenic germline BRCA1 and BRCA2 (BRCA) variants are frequent in high-grade serous ovarian cancer (HGSOC). Age, tumor stage, and residual disease are known predictors of survival. However, it is not clear whether these associations differ by BRCA variant status. We examined the association between clinicopathological features and survival by BRCA status, in a large cohort of HGSOC patients.

Methodology We evaluated clinicopathological and germline DNA sequencing data on 1,405 patients with HGSOC from 17 Australian treatment centres, enrolled into the Australian Ovarian Cancer Study between 2002–2023. Multivariate Cox proportional hazards models and logistic regression analysis were used to assess the association between prognostic factors and outcomes by BRCA status.

Results The study population consisted of 1,112 (79.1%) non-carriers and 293 (20.9%) BRCA mutation carriers. Age, FIGO stage, BRCA status, primary site and residual disease showed a significant association with survival after risk factor adjustment. Non-carriers with residual disease showed a poorer overall survival compared to non-carriers with no residual disease (p<0.001, HR: 2.10, 95%CI: 1.75–2.50), whereas there was no significant difference in survival for patients with BRCA germline alterations with or without residual disease (p=0.188 and 0.221, HR: 1.17 and 0.8, 95%CI: 0.91–1.50 and 0.57–1.10, respectively). Patients with primary peritoneal carcinoma had a poorer survival than those with primary ovarian HGSOC (p=0.002, HR:1.33, 95%CI: 1.11–1.60). Patients with protein-truncating BRCA mutations had a better survival than those with splice-site, missense or structural variants (p<0.001). The results of the logistic regression analysis model aligned with the multivariate cox regression model.

Conclusion Our results suggest that the adverse effect of residual disease is stronger for non-carriers compared to patients with a germline BRCA mutation. Thus, while optimal debulking improves outcomes for all patients with HGSOC, it may be particularly important to achieve no residual disease for non-carriers.

Disclosures David D.L. Bowtell reports research support grants from AstraZeneca, Roche-Genentech and BeiGene outside the submitted work; also personal consulting fees from Exo Therapeutics, that are outside the submitted work. Anna DeFazio reports support grants and personal consulting fees from AstraZeneca outside the submitted work. All other authors declare that they have no conflicts of interest.

PROPOSITION OF A TAILORED PERIOPERATIVE-CARE ALGORITHM FOR PATIENTS WITH ADVANCED-STAGE OVARIAN CANCER, BASED ON THE SURGICAL COMPLEXITY SCORE (ALETTI SCORE)

Elisa Scarpelli*, 1,Lucie Longuepée-Bourdon, 1,Camille Godart, 1,Aurélie Lafanche, 2,Maxime Riquet, 2,M mathile Duchateau, 1,Matthieu De Cott, 1,Manon Lefebvre, 1,Carlos Martinez-Gomez, 1,Fabrice Narducci, 1,Delphine Hudry, 1,Department of Gynecologic Oncology, Centre Oscar Lambret, Lille, France, Lille, France; 2,Department of Medicine and Surgery, University Hospital of Parma, 43125 Parma, Italy, Parma, Italy; 3,Medicine faculty, Henri Warembourg, Lille University, Lille, France; 4,Department of Anesthesiology, Centre Oscar Lambret, Lille, France, Lille, France; 5,Department of Gynecology, University Hospital of Namur-Godinne, Namur, Belgium, Lille, France

Introduction/Background Advanced ovarian cancer (AOC) treatment requires extensive surgical procedures. The reported frequency of complications following cytoreductive surgery (CRS) ranges from 10 to 20%. Depending on the number of complications following CRS, a more tailored perioperative-care algorithm could improve outcomes while reducing patient and hospital burden. The Aletti complexity score (ALETTI) is a validated tool that can be used to guide decision-making in patients with advanced-stage ovarian cancer. This score is based on patient characteristics, nutritional status, and surgical complexity, and can help determine the appropriate level of care and treatment approach.

Methodology To evaluate the feasibility and utility of a tailored perioperative-care algorithm based on the ALETTI score, we performed a retrospective review of patient data from a large, multicenter cohort. We assessed the association between ALETTI score and outcomes, including surgical complications, length of hospital stay, and patient satisfaction.

Results Our analysis included 500 patients with advanced-stage ovarian cancer who underwent CRS. The median ALETTI score was 5 (range: 1–10). The ALETTI score was strongly correlated with the rate of complications (p<0.001). Patients with higher ALETTI scores had a significantly higher rate of major complications (p<0.05). There was also a trend towards a longer hospital stay for patients with higher ALETTI scores, although this did not reach statistical significance (p=0.057).

Conclusion Our findings support the proposition of a tailored perioperative-care algorithm for patients with advanced-stage ovarian cancer, based on the ALETTI score. This algorithm could help identify patients at higher risk of complications and guide their care accordingly, potentially improving outcomes while reducing hospital burden.

Disclosures The authors declare that they have no conflicts of interest.