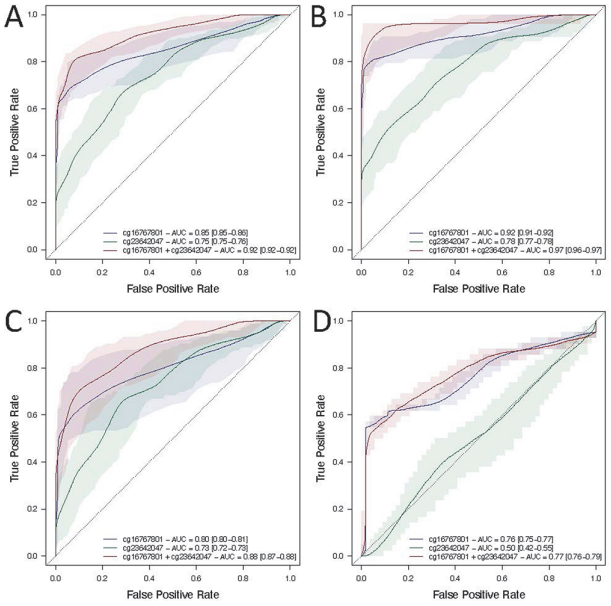


Abstract #999 Figure 1 ROC curves for logistic models including cg16767801 (in blue), or cg23642047 (in green) or both (in red) as predictors and all cases (A), cancer (B) or CIN3 (C, D) as outcome. Models were fitted on 1,000 training sets with 80% of the cases and 80% of the controls and performances 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

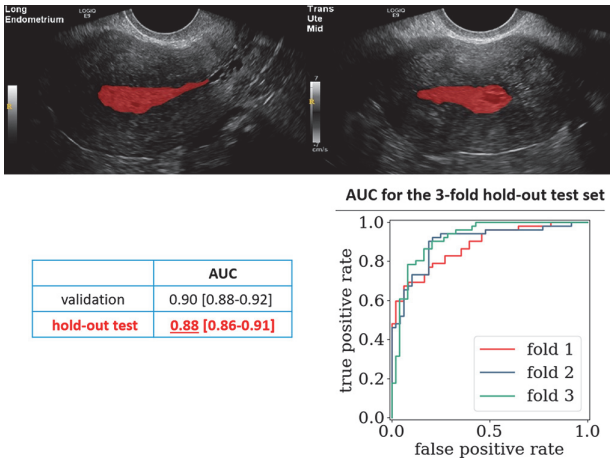
#196 ARTIFICIAL INTELLIGENCE-BASED MODEL FOR TRANSVAGINAL ULTRASOUND EARLY DETECTION OF ENDOMETRIAL ATYPICAL HYPERPLASIA AND ENDOMETRIAL CANCER IN WOMEN WITH POSTMENOPAUSAL BLEEDING

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*

10.1136/ijgc-2023-ESGO.54

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.

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.



	AUC
validation	0.90 [0.88-0.92]
hold-out test	0.88 [0.86-0.91]

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 EC/EAH 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

[1]Alberto Farolfi*, [1]Sara Testoni, [2]Francesca Rusconi, [1]Nicola Gentili, [1]Ilaria Massa, [1]Valentina Danesi, [1]Amelia Altavilla, [1]Maria Concetta Cursano, [1]Salvatore Luca Burgio, [2]Gema Hernandez Ibarburu, [1]Ugo De Giorgi. *[1]IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST), Meldola, Italy; [2]TriNetX, Cambridge, USA*

10.1136/ijgc-2023-ESGO.55

Introduction/Background Endometriosis is a benign pathological condition characterized by the ectopic presence of endometrial tissue. Whether endometriosis predisposes the pathogenesis of endometrial cancer (EC) is still debated. This study uses realworld data (RWD) from the network of

TriNetX healthcare organization (HCO) networks in the US (TNX-US) and EMEA (TNX-EMEA) to analyze the impact of endometriosis as a risk factor for the development of EC.

Methodology Using TriNetX Platform, we defined a cohort of 284,287 patients with endometriosis and at least 6 months of follow up at the HCO, 254,726 from TNX-US and 29,561 TNX-EMEA. Propensity score matching between these cohorts and the female control cohorts in each regional network was used to remove the possible confounding effects of age, body mass index (BMI), previous diagnosis of pelvic inflammatory disease, breast cancer, other cancer of female genital organs or genetic susceptibility to cancer. Hazard ratio (HR) was used to compare the incidence of EC between the matched cohorts. Kaplan Meier analysis was used to compare the overall survival (OS) of EC patients with previous endometriosis vs those without endometriosis patients after propensity score matching. The time window of observation in both analyses was 10 years.

Results Patients with endometriosis diagnosis had a higher risk of developing EC in both TNX-US (2,151/237,034 vs 620/238,837, HR 3.49, 95% CI 3.19–3.82) and TNX-EMEA (319/28,241 vs 41/28,282, HR 7.58, 95% CI 5.48–10.50). The OS of EC patients with endometriosis was demonstrated to be significantly better than those without endometriosis: the 10-year OS probability was 78.37% vs 62.41% ($p<0.01$) and 73.11% vs 49.61% ($p<0.01$), in TNX-US and TNX-EMEA, respectively.

Conclusion Our RWD supports the association between endometriosis and an increased risk of developing EC. Endometriosis-associated tumors appear to have a better prognosis.

Disclosures U.D.G. has received advisory board or consultant fees from Merck Sharp & Dohme, Bristol My-ers Squibb, Janssen, Astellas, Sanofi, Bayer, Pfizer, Ipsen, Novartis, and Pharmamar and institutional research grants from Astrazeneca, Sanofi, and Roche. A.F. has received personal honoraria for lectures from Astrazeneca, GSK-Tesaro, Clovis, and advisory board from Jannsen, Astrazeneca, GSK-Tesaro. The other authors declare no conflict of interest.

TriNetX contributed in the collection and analyses of the data, but had no role in interpretation of data, in the writing of the manuscript, or in the decision to present the results.

06. Ovarian cancer

#70 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

[1,2]Tibor A Zwimpfer*, [1,3]Sian Fereday, [1]Dinuka Ariyaratne, [1]Laura Twomey, [1,3]Nadia Traficante, [4]Ellen L Goode, [5,6,7]Anna Defazio, [1,3]David DL Bowtell, [1,3]Dale W Garsed. *[1]Peter MacCallum Cancer Centre, Melbourne, Australia; [2]University Hospital Basel, Department of Gynaecological Oncology, Basel, Switzerland; [3]Sir Peter MacCallum Department of Oncology, University of Melbourne, Melbourne, Australia; [4]Division of Epidemiology, Department of Quantitative Health Sciences, Mayo Clinic, Rochester, USA; [5]The Westmead Institute for Medical Research, Sydney, Australia; [6]Department of Gynaecological Oncology, Westmead Hospital, Sydney, Australia; [7]The Daffodil Centre, The University of Sydney, a joint venture with Cancer Council NSW, Sydney, Australia*

10.1136/ijgc-2023-ESGO.56

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.

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

[1,2]Elisa Scarpelli*, [3,1]Lucie Longuepée-Bourdon, [4]Camille Godart, [4]Aurelie Lafanechere, [4]Maxime Riquet, [1]Mathilde Duchatelet, [5]Matthieu De Codt, [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*

10.1136/ijgc-2023-ESGO.57

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