

**Methods** We retrospectively identified patients with FIGO stage IB cervical cancer who underwent either primary open RH or laparoscopic RH at three tertiary institutional hospitals between 2000 and 2018. Patients' clinicopathologic, image, and survival data were collected. The whole dataset was separated into training and test sets with a 4:1 ratio. Combining both statistical and deep neural network models, we constructed hybrid ensemble predictive models for 5-year PFS and OS rates. Only the variables that could be obtained before surgery were used. Model development was conducted in the training set with ten-fold cross-validation, and the developed models were validated in the test set.

**Results** In total, 1,141 patients were included; 578 and 563 received open RH and laparoscopic RH, respectively. The median length of observation was 57.6 months during which 157 patients (13.8%) experienced disease recurrence and 86 patients (7.5%) died. In terms of preoperative prediction, while the logistic regression model showed AUCs of 0.68 and 0.71 for 5-year PFS and OS rates, respectively, the ensemble model showed better performance: AUCs, 0.71 and 0.78. These models commonly included the surgical approach as the main prognostic factor.

**Conclusion** We developed preoperative models predicting survival outcomes according to the surgical approach in early-stage cervical cancer. These models will be useful for making decisions in choosing open RH or laparoscopic RH in individualized counseling practices.

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### 431 DISTANT METASTATIC SPREAD AND CLONAL EVOLUTION OF HIGH-GRADE ENDOMETRIAL CANCERS

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**Introduction** The incidence and mortality of endometrial cancer (EC) is rising worldwide. The biological underpinnings of EC progression are poorly understood. We sought to characterize the genetic alterations and clonal evolution of two primary high-grade ECs and their matched multiple distant metastases.

**Methods** Research autopsies were performed on two women: one with treatment-naïve, widely metastatic undifferentiated carcinoma at diagnosis (case 1); and one with serous EC and heavily treated metachronous disease (case 2). Whole-exome sequencing of primary tumors, metastases (n=8 and n=7), and normal tissues was performed and analyzed using validated bioinformatics methods.

**Results** In case 1, truncal hotspot PIK3CA p.Q546K and PTEN p.R130G mutations, chromosome 8 and 16p losses, and mutational aging signature 1 were present in the primary and all metastases. Low levels of genetic heterogeneity between all samples were observed (70% of mutations

shared). In case 2, we found high levels of genetic heterogeneity and acquisition of mutations during progression. A truncal PIK3CA p.H1047L hotspot mutation was present in the primary tumor and all metastases, with a primary subclonal TP53 frameshift mutation becoming clonal in a subset of metastases (n=3). Evidence of clonal progression between metastatic sites was observed as well as a combination of aging and homologous recombination-deficiency mutational signatures.

**Conclusion** Genetic alterations identified in case 1 were likely early events in the clonal expansion of the primary tumor, reflective of aggressive disease and absence of treatment. In case 2, evidence of clonal diversity and progression was observed, potentially representing clonal selection due to therapeutic effect.

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### 433 DETERMINING THE HAEMATOLOGICAL MORBIDITY ASSOCIATED WITH CYTOREDUCTIVE SURGERY

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**Introduction** Cytoreductive surgery (CRS) is a complex procedure performed in the setting of epithelial ovarian cancer (EOC), pseudomyxoma peritonei (PMP) and colorectal metastases (CRCm). Due to the complexity of the surgery with significant fluid volume exchange calculating estimated blood loss (EBL) is challenging. To determine the hematological morbidity associated with CRS we reviewed the EBL and transfusion rates in a National Peritoneal Cancer Centre.

**Method** The surgical oncology anonymized database provided data on demographics, surgical oncological intervention, timing, EBL, laboratory measurements, and transfusion requirements. The EBL recorded from the operative notes calculated in the operating room by the gravimetric method (suction volume and swab weights).

**Results** A total of 120 patients who underwent CRS±HIPEC, with a median age of 57 were included. The median EBL for the entire cohort (n=120) was 981 ml (range 50–6500). The median EBL for metastatic colorectal CRS (n=38) was 830 ml (range 50–3800 ml), for ovarian cancer (n= 51) was 900 ml (range 150–4600 ml) and for PMP (n=31) was 1300 (range 100–6500). The average number of red cells (RCC) transfused for the entire cohort was 1.14 (SEM 0.147), and was similar for ovarian cancer (1.28 (SEM 0.251) and PMP (1.26 (SEM 0.314)) but was significantly lower in the colorectal metastases group (0.87 (SEM 0.189)).

**Conclusion** CRS for EOC, PMP, or CRCm is associated with significant hematological morbidity, which should be taken into account for pre-operative optimization. The variation in EBL reflects the heterogeneous nature of these complex procedures, with more extensive surgery often warranted in PMP and EOC.