THE EXPRESSION OF BHLHE22 IN ENDOMETRIAL CANCER

Objectives DNA methylation arrays and MethylCap-sequencing data of endometrial tissues from our previous study found that BHLHE22 gene promoter was hypermethylated in endometrial cancer (EC) and combine with CDO1 promoter hypermethylation had been approved by Taiwan FDA to detect EC in early stage using endocervical sample. BHLHE22 is literally a basic helix loop helix transcription factor family member class E. There was limited study about BHLHE22 in EC, but it was reported as a transcriptional repressor in neuron cell differentiation. The objective of this study was to investigate the clinical characteristics of the BHLHE22 expression in EC.

Methods We collected 108 EC patients with 54 paired tissues of normal endometrium and endometrial cancer. We also collected BHLHE22 protein data from the human protein atlas (HPA), mRNA-seq and clinical characteristics data of 373 uterine corpus endometrial cancer (UUCEC) from TCGA database. BHLHE22 mRNA expression of normal endometrium was downloaded from GTEx database. Xena browser was used to analyze survival outcome and validated using Kaplan-Meier Plooter web tool.

Results BHLHE22 protein expression was significantly downregulated in endometrial cancer compared to paired normal endometrium in patient tissues as well as in HPA database and it was associated with endometrioid and grade. We validated these finding in mRNA TCGA and GTEx database. We also found that high BHLHE22 expression was associated with endometrioid type, grade and microsatelite instability (MSI) in TCGA UUCEC. High-expressed mRNA level of BHLHE22 associated with significant favourable survival compared to low-expressed samples.

Conclusions Expression of BHLHE22 is downregulated and associated with a better prognosis in EC.

DEFINING PROGNOSTIC RISK GROUPS AMONGST PATIENTS WITH ENDOMETRIAL CANCER: RESPECTIVE ROLE OF 2009 FIGO STAGE AND MOLECULAR PROFILE

Objectives Endometrial cancer (EC) is the most common gynaecological neoplasia in developed countries. Though most patients have a favourable prognosis, 15–20% suffer from a disease with a high risk of relapse and distant metastases, responsible for the majority of cancer-related deaths. While total hysterectomy remains the first-line treatment, pelvic lymph node staging is performed routinely. In recent years, the implementation of molecular classification has changed the approach of risk stratification for EC patients. Herein, we assess the respective impact of histological variables including lymph node status (i.e. FIGO stage) and molecular biology in the definition of high-risk patients.

Methods We conducted a monocentric retrospective study of 166 consecutive patients treated for EC at the University Hospital of Liège, between January 2019 and December 2021. Twenty-seven patients were excluded. Of the remaining 139, 23 patients were allocated to the high-risk group on the basis of histological variables including nodal status or p53 alterations in immunohistochemistry and/or TP53 mutations in molecular biology.

Results All histological types and grades were represented. Four patients were classified as high-risk due to p53 mutation alone; 10 by FIGO stage III alone and 3 by both. Three patients were defined as high-risk because of myometrial invasion in non-endometrioid endometrial carcinomas (NEEC). The remaining three patients had a p53 mutation associated with myometrial invasion in NEEC.

Conclusions In our cohort, histological variables define a high-risk patient six times more frequently than molecular biology. FIGO stage remains dominant in our decision making for adjuvant treatment of EC patients.
**Abstracts**

**EP109/#517 CXCR4 EXPRESSION AND CANCER-ASSOCIATED FIBROBLASTS MAY PLAY AN IMPORTANT ROLE IN THE INVASION PROCESS IN LOW-GRADE ENDOMETRIOID CARCINOMA**

1Sakiko Sanada, 2Chihiro Fukumitsu, 2Naotake Tsuda, 1Sachiko Ogasawara, 3Kimio Usuihama, 1Hirosisa Yano, 2Jun Akiba. 1Kurume University School of Medicine, Pathology, Fukuoka, Japan; 2Kurume University Hospital, Diagnostic Pathology, Fukuoka, Japan; 3Kurume University School of Medicine, Gynecology and Obstetrics, Fukuoka, Japan

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**Objectives** Introduction: Low-grade endometrioid carcinoma (LGE) usually behaves in an indolent course, although some cases show a high tendency for infiltration and metastasis. Previously, we have pointed out chemokine CXCR4-CXCL12 axis plays an important role in MELF type endometrioid carcinoma (EC). Under these circumstances, the functional activity of cancer-associated fibroblasts (CAFs) affects tumor microenvironment. In the present study, we focused on LGEC and non-tumorous conditions and investigated the clinicopathological correlation of CXCR4 expression including the relation between biopsy and surgically resected samples, and invasion processes under CAF co-cultured conditions in vitro.

**Methods** Immunohistochemical staining of CXCR4 was performed in 72 cases of LGEC and 57 cases of non-cancerous conditions. The expression was analyzed semi-quantitatively regarding the correlation between biopsy and surgically resected specimen, cancer and non-cancerous conditions, the morphological pattern of myometrial invasion, and clinical characteristics, respectively. Using the LGEC cell lines, invasion assay and wound healing assay were performed under co-cultured with CAF co-cultured conditions in vitro.

**Results** EC showed significantly higher expression of CXCR4 than in non-neoplastic conditions (p<0.05), although no correlation was identified between the biopsy and surgically resected samples, and invasion processes under CAF co-culture conditions in vitro.

**Conclusions** From the results of the invasive process of LGEC seemed to depend on the tumor microenvironment, CXCR4 expression can be an indicator of tumor aggressiveness.

**EP110/#1019 FACTORS ASSOCIATED WITH SUCCESSFUL BILATERAL SENTINEL LYMPH-NODES MAPPING IN ENDOMETRIAL CANCER**

Migle Gedgaudeite*, Arturas Sukovas, Saulius Paskauskas, Arnoldas Bartusevicius, Daiva Vaitiene, Adrius Gaurilcikas. Lithuanian University of Health Sciences, Obstetrics and Gynaecology, Kaunas, Lithuania

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**Objectives** Sentinel lymph-node biopsy (SLB) with indocyanine green (ICG) could be an alternative for the systematic pelvic lymphadenectomy (LND) to stage lymph-nodes in endometrial cancer (EC). The success of SLB depends on the bilateral identification of sentinel lymph-nodes (SLs) in the pelvis. The aim of this study was to evaluate factors that may impact successful bilateral SL mapping.

**Methods** Prospective study was performed in Lithuanian University of Health Sciences Hospital. 180 patients with histologically confirmed EC were included into the study. SLs were mapped with intracervical ICG injection

**Results** Bilateral SL mapping rate was 69.4%. The factors associated with mapping failure were as follows: older age (63.0 vs. 65.0, p=0.021), higher BMI (29.4 vs. 30.9, p=0.026), decreased lymphatic flow (16.0% vs. 29.1%, p=0.043), deep myometrial invasion (37.6% vs. 56.4%, p=0.019) and adhesiolysis performed during surgery (10.4% vs. 27.3%, p=0.004). After binary logistic regression analysis, the only independent factor associated with the bilateral SL mapping failure was the adhesiolysis during surgery (OR 2.888; 95% CI 1.81 – 7.063, p=0.020).

**Conclusions** The removal of adhesions in the pelvis was the only independent factor associated with the lower rates of successful bilateral SL mapping.

**EP111/#458 SECTIONING AND EXTENSIVELY EXAMINING THE FIMBRIATED END OF FALLOPIAN TUBES FOR ENDOMETRIAL CANCER**

1Sushmita Godhandra*, 2Angelica Hodgson, 3Ryan Kahn, 2Tiffany Sia, 2Rajmohan Murali, 1Mario Leitao, 1Nadeem Abu-Rustum, 2Britta Weigelt, 2Lora Ellenson. 1Memorial Sloan Kettering Cancer Center, Surgery, New York, USA; 2Memorial Sloan Kettering Cancer Center, Pathology, New York, USA; 3Memorial Sloan Kettering Cancer Center, Surgery, Kinnelon, USA

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**Objectives** We sought to determine if Sectioning and Extensively Examining the FIMbriated End (SEE-FIM) of fallopian tubes (FTs) identifies more clinically significant tubal pathology in endometrial cancer (EC) compared to routine sectioning (RS).

**Methods** From 7/2020–12/2020, FTs from patients undergoing surgical management of EC were variably processed with SEE-FIM protocol or RS. Specimens with no residual EC or gross adnexal involvement were excluded. Medical records were reviewed for clinical variables. Data were summarized using descriptive statistics, and SEE-FIM vs. RS groups were compared.

**Results** Of 191 patients with EC, 130 (68%) underwent SEE-FIM and 61 (32%) underwent RS. The most common histology types were endometrioid (n=143, 75%), serous (n=15, 8%), and carcinosarcoma (n=11, 6%). There were 154 (81%) stage I, 12 (6%) stage II, 17 (9%) stage III, and 8 (4%) stage IV ECs. On microscopic evaluation, benign adnexal findings included cysts/hiyalinoplaex (n=24), endometriosis (n=15), and tubal hyperplasia (n=2). Six precursor lesions were found—3 endometrioid glandular proliferations and 3 serous tubal intraepithelial lesion/carcinomas (STIL/STIC). There was 1 microscopic metastasis from primary EC to the adnexa. Both STIL/STIC and microscopic metastasis to the adnexa were discovered on SEE-FIM specimens. There were 7 concurrent ovarian primary tumors (5 endometrioid, 2 high-grade serous).