THE EXPRESSION OF BHLHE22 IN ENDOMETRIAL CANCER

Objectives DNA methylation arrays and MethylCap-seq sequencing 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 (UCEC) 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 survival methods and Cox hazard ratio analysis using R software.

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 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 microsatellite instability (MSI) in TCGA UCEC. 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. 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. 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.

RACIAL DISPARITIES IN ENDOMETRIAL CANCER PATIENTS AT A SINGLE ACADEMIC INSTITUTION

Objectives Historically, black patients with endometrial cancer (EC) have worse survival than non-black patients. Obesity has been associated with poor survival in many cancers, though a relationship between race/obesity and survival is not well understood. We sought to investigate the relationship between obesity and survival in EC patients.

Methods EC patients between 2007–2021 were included. Demographic/death information was collected from the EMR and public records. Effect of BMI/race on overall survival was analyzed using Kaplan-Meier survival methods and Cox hazard ratios.

Results 1042 women were included. Black women had higher death rates than non-black women (17.4% vs 11.3%, p<0.01) and decreased five-year cancer-specific survival (68.6% vs 83.4%, p<0.001). Black women were more likely to be obese (35.7% vs 23.5%, p<0.001), but there was no difference in presentation of obese/overweight/normal BMI patients (HR=0.66, 95% CI:0.35–1.24; HR=0.61, 95% CI:0.36–1.02; HR=0.65, 95% CI:0.39–1.10). There was no difference in risk of EC death in morbidly obese/obese/overweight patients compared to normal BMI patients (95% CI: 0.35–1.24; 0.36–1.20; 0.39–1.10). There was no difference in age at diagnosis between black and non-black women, although age at diagnosis increased risk of death in populations 60–69, 70–79, and >80 years compared to <49 years.