PROGNOSTIC BIOMARKERS FOR ATYPICAL ENDOMETRIAL HYPERPLASIA: A MINI REVIEW

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10.1136/ijgc-2021-ESGO.596

Introduction/Background Atypical hyperplasia (AH) or endometrioid intraepithelial hyperplasia (EIN) refer to a pre-cancerous proliferation of the endometrial glands resulting in an increased ratio of glands to stroma (>3:1). We aimed to identify Immunohistochemistry (IHC) biomarkers to distinguish AH/EIN lesions associated with synchronous endometroid cancer (EC) or imminent progression to EC.

Methodology We performed a structured review of the published evidence on MEDLINE from inception to March 6, 2021 and selected the 5 most common “themes” (IHC biomarkers) as defined by the number of available studies and/or specimens included. We synthesised the evidence to provide a consensus on their prognostic value (synchronous cancer or imminent progression).

Results We identified 52 studies from 18 countries. The 5 most discussed biomarkers (“themes”) were: Phosphatase and TENSin homolog (PTEN), stromal expression of p16 protein, nuclear localisation of b-catenin, Paired box gene 2 (PAX2), B-cell Lymphoma 2 expression (bcl-2). PTEN loss in AH was associated with increased risk of Endometrial Cancer (EC). Increased stromal p16 was observed in most EC specimens as well as AH compared to benign; EC had the highest expression. Nuclear β-catenin expression seems to increase from benign to pre-malignant AH but not from pre-malignant to EC. A progressive decrease of PAX2 expression was noted in transition from AH to EC.

Conclusion Identification of the most common IHC biomarkers whose expression alter during the transition from benign to AH and subsequently EC can flag those cases that require definitive management with hysterectomy is needed. This is important when fertility plan is an argument against benign to AH and subsequently EC can flag those cases that markers whose expression alter during the transition from AH to EC.

Conclusion* A progressive decrease of PAX2 expression was noted in transition from AH to EC.