VITAMIN D RECEPTOR AND CELLULAR RETINOL-BINDING PROTEIN-1 IMMUNOHISTOCHEMICAL EXPRESSION IN NORMAL, HYPERPLASTIC AND NEOPLASTIC ENDOMETRIUM: POSSIBLE DIAGNOSTIC AND THERAPEUTIC IMPLICATIONS

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Introduction/Background We conducted this study to assess the effect of VDR and CRBP-1 immunohistochemical expression on the endometrium and to explore their role in endometrial cancer carcinogenesis.

Methodology This study comprised two hundred paraffin-embedded endometrial tissue samples diagnosed as 42 and 63 proliferative and secretory endometrium respectively, 45 endometrial hyperplasias with atypia and 50 endometrial carcinomas (25 low-grade and 25 high-grade endometrial carcinomas). The immunohistochemical method was done to determine the expression of VDR and CRBP-1.

Results VDR was strongly expressed in 8 (17.8%) cases with endometrial hyperplasia, 15 (60%) cases with low grade endometrial carcinoma, and 22 (88%) cases with high-grade endometrial carcinoma. While CRPB1 overexpression was noted in cases with proliferative endometrium, secretory endometrium and endometrial hyperplasia with atypia, 37 (88.1%), 56 (88.9%) and 3 (6.7%) cases respectively and all malignant cases showed negative expression.

Conclusion Increased VDR expression and reduced CRBP-1 expression are associated with malignant features of the endometrium with a significant statistical difference of immunoreactivity between groups of normal endometrium, hyperplastic changes & carcinoma. Our data suggested that increased VDR expression is partly associated with endometrial cancers through a premalignant phase. Also, increased VDR and reduced CRBP-1 expression are associated with the progression of endometrial carcinoma with higher grades.
Conclusion

MSI/MMR testing rates among aEC patients in Europe are low and vary across countries. The majority of tested patients had non-MSI-high/pMMR tumors. Knowledge of MSI/MMR testing may be helpful for optimal utilization of targeted therapies in Europe.

Introduction/Background

Organoids are increasingly being used as complex, multi-dimensional, multi-cell structures resembling entire organs and have now been derived from a variety of tissues.

Methodology

We established endometrial organoid cultures from pipelle biopsies of 11 patients with endometrial cancer (EC) (7 endometrioid, 3 serous, 1 clear cell) and 3 patients with benign conditions. Organoids were grown in Matrigel and medium supplemented with growth factors, Rspondin-1, Noggin, A83-01 and nicotinamide. The genomic and epigenomic features of organoids and parent tissue were compared in pairs and by histological type using targeted gene sequencing and whole-genome DNA methylation profiling.

Results

The genetic variations and mutations in seven genes (PTEN, ARID1A, PIK3CA, POLE, CTNNNB1, KRAS, TP53) were largely shared by primary tumours and EC-derived organoids and exhibited histological type-specific characteristics. Similarly, the DNA methylation fingerprint was preserved in cultured endometrial cancer organoids with only few differentially methylated positions (DMPs) compared to tumour tissue. Similarly, the DNA methylation fingerprint was preserved in cultured endometrial cancer organoids with only few differentially methylated positions (DMPs) compared to tumour tissue.

Conclusion

Endometrial cancer organoids can reliably be used as replicas of primary tumour in endometrial cancer research.

Introduction/Background

Sentinel lymph node (SLN) biopsy is an alternative staging approach in women with early-stage endometrial carcinoma. The SLN approach is introducing ‘precision medicine’ to the surgical management of gynaecological cancers, providing a comprehensive evaluation of high-yield lymph nodes. This approach improves our ability to detect small-volume metastatic disease whilst reducing intra-operative and post-operative morbidity associated with systematic lymphadenectomy. Although the majority of clinicians in Europe/USA have recognised the value of SLN biopsy in endometrial carcinoma and introduced this as part of clinical practice, there is ongoing debate regarding its role in very low-risk patients and patients at high risk of nodal metastasis. The significance of low-volume metastasis is not fully understood, and there is no consensus in regard to how the presence of isolated tumour cells should guide adjuvant therapy.

Methodology

We present a case of a forty-seven-year old woman presenting with grade III, radiological stage IIIIC endometrioid endometrial carcinoma. A pre-operative MRI have revealed a suspicious 9 mm left external iliac lymph node. She underwent a total laparoscopic hysterectomy, right sentinel lymph node biopsy and systematic left pelvic lymph node dissection.

Results

Final histopathology revealed a grade III, stage IA endometrioid endometrial carcinoma, ER+, P53 wild type, MMR proficient. She underwent an uneventful post-operative recovery. Following counselling, she declined vault brachytherapy.

Conclusion

SLN biopsy is increasingly used as an alternative to systematic lymphadenectomy in surgical staging in endometrial carcinoma, has gained significant acceptance and is applied in many centres. Robust data exists regarding the accuracy of SLN biopsy for nodal staging in all risk-categories of endometrial carcinoma, but prospective data on oncological outcomes are lacking.