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Immunoexpression of progesterone receptor, epithelial growth factor receptor and galectin-3 in uterine smooth muscle tumors

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Background: Uterine smooth muscle tumors constitute a spectrum of neoplasms. Usually diagnosis of leiomyomas (LMs) is straight forwards; however, atypical leiomyomas (ALMs), and smooth muscle tumors of uncertain malignant potential (STUMPs) have overlapping features and need to be distinguished from leiomyosarcoma.

Aim: Aim of this study is to evaluate progesterone receptor (PR), epithelial growth factor receptor (EGF-R) and galectin-3 expression in LMs, ALMs, STUMPs, and leiomyosarcoma and to assess their possible role in differentiating those tumors.

Materials & Method: Immunoexpression of EGF-R, PR and galectin-3 were studied in 44 cases of uterine smooth muscle tumors. Tissue samples from 20 LMs, 9 ALMs, 5 STUMP and 10 leiomyosarcoma cases were studied. Semi-quantitative score was used to evaluate immunohistochemical staining.

Results: EGF-R overexpression was detected in leiomyosarcoma compared to lack of or reduced EGF-R expression in the non-sarcomatous group (LMs, ALMs and STUMPs) with a highly significant difference ($p<0.001$). On the contrary, there was weak or negative PR staining in leiomyosarcoma as compared to intense PR expression in the non-sarcomatous group with a highly significant difference ($p<0.001$). Regarding galectin-3, it was down-regulated in leiomyosarcoma compared to the non-sarcomatous group with a significant difference ($p<0.01$). Correlation analysis revealed negative correlation between EGF-R and PR expression with significant statistical results. While correlation of galectin-3 with EGF-R and PR showed insignificant statistical results.

Conclusion: Immunoexpression of EGF-R, PR and galectin-3 could help in differentiating challenging cases of uterine smooth muscle tumors. Further studies are recommended to investigate interactions between EGF-R, PR and galectin-3 and to plan new therapeutic strategies.

Biography

Maha K Eldosouky is a pathologist in Faculty of Medicine at the Taibah University, KSA, Egypt and she is working at the Department of Anatomy, Faculty of Medicine, Alminia University, Egypt. She is having more than 10 publications in reputed journals.

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