Summary

Forty six cases of endometrial lesions, benign and malignant, as well as four control cases were studied histopathologically for typing of the lesion, grading of the tumors, and other histopathological changes in different grades and immnunohistochemically for expression of Musashi 1 in malignant and premalignant lesions. The material included archival formalin-fixed paraffin-embedded blocks of endometrial biopsies received during the years 2003 to 2009. These blocks were obtained from the departments of Pathology, Benha Faculty of Medicine and National Cancer Institute, Cairo University. The cases were selected to represent a spectrum of endometrial changes including proliferative phase (n=2), secretory phase (n=2); simple hyperplasia (n=5), complex hyperplasia (n=7), atypical hyperplasia (n=7); and various grades of endometrioid carcinoma, GI (n=8), GII (n=8), GIII (n=8), and undifferantiated adenocarcinoma (n=3).

This study have demonstrated endometrial expression of Musashi-1 in both glandular and stromal endometrial cells. Increased numbers of Musashi-1-expressing cells in proliferative over secetory endometrium emphasize their proliferative character, and indicate a stem cell function of Musashi-1positive endometrial cells.

The current study revealed that Musashi-1 was increased progressively in the sequence: secretory endometrium to proliferative endometrium to endometrial hyperplasia to endometrial carcinoma. Increased Musashi-1 positive stem cells number in endometrial hyperplasia and carcinoma compared to secretory endometrium appear to support the concept of a stem cell origin of these diseases. These different expression levels could

raise the possibility that Musashi-1 was involved in the endometrial carcinogenesis.

Also we found a critical number of Musashi-1 expressing stem cells separating the precursor atypical endometrial hyperplasia from grade I endometrial adenocarcinoma as in the latter Musashi 1 expressing stem cells is about double that expressed in the former in both stromal and glandular location. Which could be helpful as diagnostic tool to differentiate between atypical hyperplasia from grade I endometrial adenocarcinoma.

Concerning adenocarcinoma of the endometrium, Musashi-1 protein expression was markedly up regulated in adenocarcinoma of the endometrium when compared to normal and hyperplastic endometrium with a significant statistical difference ($p<0.01$). Although endometrial adenocarcinoma shows the highest level of Musashi-1 expression , there was significant progressive reduction with higher histological grade of the tumor.

Also, in the current study, Musashi-1 expression was inversely correlated significantly with high stage ($p<0.05$), vascular invasion ($p<0.05$) and lymph nodes metastasis ($p<0.05$).