**Evaluation of Ki-67 staining index and BRAF mutation in women diagnosed with advanced endometriosis**

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**Abstract**

**Introduction:**

Recent studies have proposed that advanced endometriosis might harbor histopathological, molecular, and genetic properties of malignant lesion. Thus we aimed to investigate the presence of Ki-67 staining index (KSI) and BRAF mutation in patients with and without recurrent endometriosis of stage III and IV.

**Materials and methods:**

Cross sectional study on 50 consecutive patients with endometriosis of stage III and IV was performed. Tissue specimens collected during laparoscopic surgery were used for the evaluation of presence of KSI and BRAF mutation. Also, serum levels of tumor markers including CA-125, CA19-9, AMH and αFP were gathered.

**Results:**

The mean ± SD of KSI was 12.18 ± 16.58. Forty-one out of 50 (82%) patients had a non-recurrent disease. KSI ⩾ 10% was found in 20 patients (40%). Furthermore, 29 patients (58%) and 13 patients (26%) had high levels of CA-125 and CA19-9, respectively. No evidence of significant correlation was observed between the KSI and CA-125 and CA19-9 (all *p* values > 0.05). However, a positive correlation was observed between CA-125 and CA19-9 (*r* = 0.55, *p*-value = 0.02). KSI level was insignificantly lower in recurrent patients compared with non-recurrent patients (9.78 ± 6.24 vs 12.71 ± 18.09, *p*-value = 0.33). Other tumor markers did not show any statistically significant difference (all *p* values > 0.05). None of the participants had BRAF V600E mutation.

**Conclusion:**

Endometriosis manifests malignant behavioral of rapid proliferation but the exact genetic alteration causing this phenomenon is not understood.