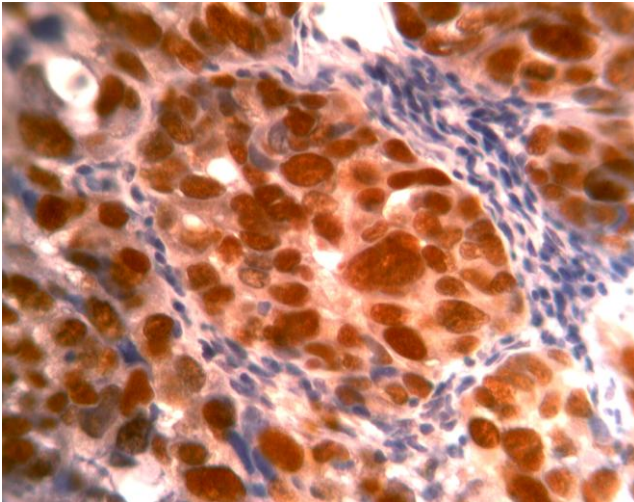


There is a significant statistical difference in p53 expression in malignant cases compared to other groups ( $P < 0.001$ ).



**Figure 1: Moderately differentiated ovarian serous cystadenocarcinoma showing intense nuclear P53 staining reaction DAB staining (200 X)**

## Discussion

Ovarian cancer is the seventh most common cancer in women worldwide, with nearly a quarter of a million women diagnosed every year. 5-year survival is just 30%, a figure that has not changed for the past 30 years<sup>(14)</sup>. The current study showed that p53 was negative in all benign tumors but positive in 96.8% of malignant cases. Previous studies showed mutation in or inactivation of p53 in 57%<sup>(2)</sup>, 46%<sup>(15)</sup> of invasive ovarian tumors, but in only 8% of borderline tumors and nonexistent in benign tumors<sup>(16)</sup>. This difference with the results of the current study may be due to genetic background differences, samples size or methodology variations.

Alterations of p53 occur via a variety of mechanisms, such as mutations and deletions, or protein stabilization without any obvious genetic changes. Point mutations often result in a dominant-negative inhibition of the function of the wild type allele and/or gain of novel functions. Most of these mutant p53 proteins

have a prolonged half-life, accumulate in the nucleus and can be detected by immunohistochemistry<sup>(17)</sup> whilst 26% to 81% of ovarian cancers have been reported to have mutations or overexpression of p53<sup>(18)</sup>.

In ovarian cancer, the age of the patient considered an important risk factor. Patients older than 69 years of age exhibited significantly poorer survival than those younger<sup>(18)</sup>. In the current study, there was a significant difference in mean age of malignant and borderline cases in comparison with benign and non-neoplastic cases.

Different studies<sup>(12,19-21)</sup> showed overexpression of p53 detected by immunohistochemistry, as Kerbel *et al*<sup>(20)</sup> showed that p53 overexpression was detected in 43.3% of serous ovarian cancer while none of the normal ovarian tissues revealed immunohistochemical expression for p53, with significant level of expression between malignant and benign tissues ( $p < 0.001$ ). p53 overexpression was reported more frequently in higher grades of differentiation with significant level of expression ( $P < 0.05$ ) this indicates that serous ovarian tumors with positive p53 expression are biologically bearing more aggressive behavior and patient's age both can be used as a prognostic markers in patient with ovarian cancer<sup>(20)</sup>.

Another study done in Mosul/IRAQ by Hamdi and Saleem<sup>(21)</sup> in 2012, showed that, p53 expression was not significantly related to the age of the patients, grade, or to the histological type of the tumors. It was mainly found in malignant serous tumors (50%), in the poorly differentiated tumors (47.6%), and in the 6th decade of age (30.8%)<sup>(21)</sup>.

In conclusion, p53 may play a role in the pathogenesis of ovarian cancer, in addition to patient's age.

## References

1. Jemal A, Siegel R, Ward E, et al. "Cancer statistics, 2007" *Ca-A. Cancer J Clin.* 2007; 57(1):43-66.