

present in over eighty percent of human cancers^(3,4) and have been associated with poor prognosis in ovarian carcinomas^(5,6).

Mutation in the p53 gene is the most common single genetic alteration in human ovarian cancer. Either loss of wild type p53 protein function, gain of oncogenic function or the ability to activate p53 protein inappropriately severely compromises the capacity for controlled cellular proliferation and cellular growth⁽⁷⁾.

A number of studies that have paid particular attention to histological criteria of malignancy of serous tumors have found that p53 mutations are strongly associated with high-grade serous carcinomas, but are rare in low grade or borderline serous carcinomas⁽⁸⁻¹¹⁾. The p53 protein plays a key role in cell cycle regulation and suppression of tumor development. DNA damage results in increased levels of p53, which lead to cell cycle arrest in G1 phase, followed by DNA repair or apoptosis. Mutations of the p53 gene as determined by mutation analysis and/or positive immunohistochemical (IHC) staining for p53 are common in ovarian cancer and have been associated with poor clinical outcome⁽¹²⁾.

The aim of the current study is to evaluate the expression of p53 by immunohistochemistry (IHC) and to compare it with clinicopathologic prognostic factors of ovarian tumors namely age and malignancy.

Methods

In this study, 62 ovarian cystic lesions were involved. Specimens belong to the period from June 2011 to March 2012 were collected from private laboratory in Baghdad. According to the hematoxylin and eosin staining, the patients were grouped into:

- Thirty five cases of surface epithelial ovarian tumors, (31 cases of invasive surface epithelial ovarian tumors, and 4 cases of borderline intermediate malignancy cases of neoplastic ovarian cystic lesions).
- Eighteen cases of benign neoplastic ovarian cystic lesions .
- Nine cases of non- neoplastic functional one.

The diagnosis of these tissue blocks was based on the obtained pathological records of these cases from laboratory records. Following processing of these tissue blocks, a confirmatory histopathological re-examination of the slides was done by consultant histopathologist in Department of Pathology, College of Medicine, Al-Nahrain University.

Sections were made from each of the paraffin embedded blocks as follows: one section 4 µm thick sections were made on ordinary slides to be subjected to haematoxylin and eosin stain. This was conducted to confirm the diagnosis and tumor grade. Another section, 4 µm thick sections was made on positively charged slide for detection of p53 by immunohistochemistry using monoclonal mouse Anti human p53 protein. This technique is done the Department of Pathology and Department of Microbiology College of Medicine Al-Nahrain University. It is based on the detection of the product of gene expression (protein) in malignant and normal cells using specific monoclonal antibodies, i.e., primary antibody for specific epitope, which binds to nuclear targeted protein. The bound primary antibody is then detected by secondary antibody (usually rabbit or goat anti-mouse), which contains specific label (in this context we used peroxidase labeled polymer conjugated to goat-anti mouse immunoglobulin). The substrate is peroxidase (H₂O₂) in diaminobenzidine (DAB) of chromogen solution then stained with hematoxylin as a counter stain. Positive reaction will result in a brown colored precipitate at the antigen site in tested tissue⁽¹³⁾ shown in figure 1. Data were analyzed using SPSS version 16 and Microsoft Office Excel 2007. Nominal data were expressed as frequency and percentage. Numeric data were expressed as mean ±SEM (Standard error of mean). Chi-square test was used to assess relation between nominal data, while ANOVA test and student t-test were used to analyze difference among the mean of numeric data. *P*-value (< 0.05) was considered significant.