IMMUNOHISTOCHEMICAL EXPRESSION OF HER 2 NEU, P53 & P63 IN UROTHELIAL BLADDER CARCINOMA AND ITS CORRELATION WITH CLINICO-PATHOLOGICAL VARIABLES

ABSTRACT:

In the present study, immunohistochemical expression of HER 2 NEU, P53 & P63 were evaluated in urothelial carcinoma of the urinary bladder for a period of two years from June 2015- June 2017 in the Institute of Pathology, Madras Medical College & Rajiv Gandhi Government General Hospital, Chennai. The immunohistochemical expression of these markers were correlated with various clinico-pathological variables like age, gender, tumor size, grade, stage and invasiveness of the tumor. We also analyzed the correlation between HER 2 NEU with P53, HER 2 NEU with P63 and P53 expression with P63 expression. We performed both prospective and retrospective data analysis of patients who were diagnosed to have biopsy proven urothelial carcinoma and were included in the study population. The exclusion criteria included all benign & non neoplastic lesions of the bladder and other histological variants of urothelial carcinoma like micropapillary variant, urothelial carcinoma with squamoid differentiation, squamous cell carcinoma of bladder. We received 22,178 specimens for histopathological examination during the study period and 123 were bladder specimens. Out of 123 bladder specimens, 84 cases were diagnosed as urothelial carcinoma, 32 were reported as non neoplastic & benign lesions and conclusive opinion could not be arrived in 7 cases because of inadequate sampling. Among 84 cases, 46 (55%) were high grade and 38 (45%) were low grade urothelial carcinoma. We selected 52 cases of urothelial carcinoma from 84 cases and this constituted equal proportion of high (26 cases) grade and low (26 cases) grade urothelial carcinoma for easy comparison. Among 26 high grade urothelial carcinoma, 24 (92%) were muscle invasive and 2 (8%) were non muscle invasive carcinoma. Of 26 low grade urothelial carcinoma, 5 (19%) were muscle invasive and 21 (81%) were non muscle invasive.
In the present series, the peak incidence of urothelial carcinoma was above 50 years of age. Males constituted 69% and females accounted for 31% of cases. The lateral wall was the most common site of urothelial carcinoma followed by posterolateral wall. It was found that urine cytology showed higher sensitivity for high grade urothelial carcinoma than low grade urothelial carcinoma. Most high grade carcinoma were stage II & III, whereas most low grade were stage I & II carcinoma and a significant statistical correlation was observed between the grade and the stage of the tumor.

Immunohistochemical expression of HER 2 NEU showed significant statistical correlation with tumor grade and no correlation was observed with age, gender, size, stage and invasiveness of the tumor. P53 over expression correlated with tumor grade, stage and invasiveness of the tumor and no correlation was observed with age, gender and size of the tumor. There exists a statistical correlation between decreased expression of P63 and grade, invasiveness, size, stage and no correlation was observed with age, sex.

HER 2 NEU expression showed correlation with P53 over expression and decreased P63 expression. A significant statistical correlation was observed between P53 over expression and decreased expression of P63.

It is inferred that HER 2 NEU over expressing patients would be benefited from targeted therapy and it could be considered as prognostic marker in the future. Similarly, over expression of P53 and decreased expression of P63 could be considered as surrogate molecular markers affecting the prognosis and outcome of the patient. Thus these markers aids in risk stratification and management of the patient.

**KEY WORDS**: Urothelial, high grade, low grade, muscle invasive, non muscle invasive, HER 2 NEU, P53, P63