

ANALYSIS OF IMMUNOHISTOCHEMICAL EXPRESSION OF CD10 IN THE LESIONS OF PROSTATE

BACKGROUND :

Prostatic lesions cause significant morbidity and mortality among the elderly males worldwide. The symptoms due to prostate lesions whether benign or malignant are related to urinary symptoms, thus cannot be differentiating between these two entities clinically. Prostate cancer is the most aggressive malignant neoplasm with varied clinical presentations. This tumor does not show any warning signs in its early course of development.

OBJECTIVE :

Our objective was to (i) identify and to analyze the expression of CD10 in various lesions of prostate, (ii) to evaluate the expression of CD10 in the malignant lesions of prostate, (iii) to correlate the CD10 expression with age, histopathological grading, serum PSA level, of prostatic tumor cases.

MATERIALS AND METHODS :

A total sample of 40 cases were analysed during the period of June 2012 to May 2016. We categorized the total cases as benign, premalignant and malignant lesions, their age wise distribution was analysed. The cases of prostatic cancer was analysed according to various Gleason grade, Gleason score, serum PSA levels. We performed IHC detection of CD10 in sections of formalin fixed paraffin embedded tissue of prostatic biopsy cases

and correlated the various patterns of CD10 expression among the different lesions of prostate with respect to histopathological diagnosis.

RESULTS :

In our study we found that benign prostatic hyperplasia showed predominantly apical membranous staining (BPH with prostatitis shows same apical membranous positivity, PIN showed differential expression with membranous positivity in low grade and absence to combined positivity in high grade PIN. In case of malignant lesions absence of expression in majority of Gleason grade 2 (100%) and grade 3 (76%), cytoplasmic positivity predominance in high grade Gleason grade 4 (71%) and grade 5 (100%). Increased CD10 cytoplasmic expression is seen with increased serum PSA level (>20ng/ml), with predominantly negative staining in serum PSA levels of 10 – 20ng/ml.

CONCLUSION :

Our study describes different pattern of expression of CD10 in various lesions of prostate. Apical membranous positivity in benign prostatic hyperplasia, same pattern of expression in BPH with prostatitis, decreased membranous expression in high grade PIN, and altered expression in prostatic carcinoma. In low grade tumors we noted absence of expression, and repression in the cytoplasmic region of high grade prostatic tumors.

Still the exact mechanism and the role of CD10 in the pathogenesis of prostatic carcinoma is under study, one of the hypothesis states that cytoplasmic positivity is due

to localization of CD10 molecule in the cytoplasm. This intracytoplasmic accumulation of CD10 drives the cell to constant signaling pathway leading to uncontrolled cell proliferation. Our study also favors this hypothesis as there is cytoplasmic expression in high grade tumors.

In future this marker could be used as a diagnostic marker in differentiating benign and malignant lesions, to categorise the low grade and high grade tumors, and to determine the aggressive nature of the neoplasm.