

ROLE OF EXPRESSION OF P63 AND CALPONIN IN PROSTATIC LESIONS

ABSTRACT

Introduction:

Histopathological diagnosis of benign prostatic hyperplasia and prostatic carcinoma may pose problems due to presence of mimickers. p63 is confined to basal cells /myoepithelial cells of prostate. In prostate cancer there is presence of reactive stroma instead of normal fibromuscular stroma. Calponin is expressed in cytoplasm of smooth muscle cells of normal stroma and its decreased or loss of expression is believed to play a role in tumorigenesis including prostatic carcinoma.

Objectives:

This study is done to assess the diagnostic utility of p63 staining in prostatic lesions, to assess the expression of calponin in benign and malignant prostatic lesions and to determine the relationship between the immunostaining and histologic grade of prostatic carcinoma

Materials and methods:

Biopsy specimen from a total of 60 cases which included 30 cases of BPH, 2 cases of Prostatic intraepithelial neoplasia and 28 cases of prostatic carcinoma were obtained by TURP and needle biopsies. For each case biochemical parameters were obtained. Immunohistochemical analysis was performed on routinely processed, formalin fixed, paraffin embedded tissue. Tissue sections were cut at 4 μ thickness and mounted on gelatin coated slides. Immunohistochemical staining was done for both p63 and calponin. Expression of each of markers was graded accordingly.

Results:

p63: Among 30 BPH, 27 cases(90%) showed positivity and 3 cases(10%) showed negativity. All 2 cases of Prostatic intraepithelial neoplasia showed focal positivity.

All 28 case of prostatic adenocarcinoma showed negative basal staining (100%) out of which 14 cases (50%) showed aberrant cytoplasmic staining. Sensitivity of p63 was 90% and specificity was 100%.

Calponin: Among 30 cases of BPH 25 cases(83.3%) showed score 3 staining, 4 cases (13.3%) showed moderate score 2 staining and 1 case (3.3%) showed low intensity of staining. 28 cases showed high staining index. Both cases of Prostatic intraepithelial neoplasia show moderate staining. Out of 28 prostatic carcinoma 19 cases (67.8%) showed low staining/score1. 2 cases (7.1%) showed negative staining and 7 cases (24.9%) showed moderate to strong staining. 23 cases of prostatic carcinoma showed low to moderate staining index.

The expression of both these markers were statistically significant ($p < 0.05$)

Conclusion:

p63 and calponin are highly expressed in benign and preneoplastic lesions. p63 is a valuable tool with high specificity in differentiating BPH from prostatic carcinoma. The decreased or absent stromal staining of calponin which indicates a reactive stroma in malignancy can be used alone or in conjunction with p63 for confirmation of diagnosis of prostatic carcinoma.

Keywords: p63, Calponin, prostatic lesions