**Immunohistochemical expression of Alpha-Methylacyl-CoA Racemase**

**in Benign Prostate Hyperplasia and Adenocarcinoma Prostate.**

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**ABSTRACT**

**Objective:** To determine the association of Alpha- Methylaceyl-CoA racemase expression in adenocarcinoma prostate and benign prostate hyperplasia on immunohistochemistry.

**Study Design:** Comparative Cross Sectional

**Place and Duration:** This study was carried out at the Department of Pathology, Pakistan Navy Station Shifa Hospital, Karachi from January 01, 2018 till February 28th, 2019.

**Methodology:** A total of 74 prostatic specimens were recruited in the study. Out of which 37 specimens were that of prostatic adenocarcinoma and the remaining 37 were of benign prostate hyperplasia. All specimens were subjected to immunohistochemical staining with Alpha- Methylacyl-CoA racemase. Statistical analysis was done by using SPSS version 23.0. The association of extent of Alpha- Methylacyl-CoA racemase staining between adenocarcinoma and hyperplasia group was assessed by using Chi square test x2.

**Results:** Out of the 37 cases of adenocarcinoma stained for Alpha- Methylacyl-CoA racemase, 9 (24.3%) cases showed reactivity in ˃90% of tumor cells, 16(43.2%) cases showed reaction in almost 51-90% of cells with strong intensity of staining ,the remaining 12 (32.4%) cases exhibited reactivity in 10-50% of tumor cells with moderate intensity (+2) of staining. Among the 37 cases of benign hyperplasia prostate which were subjected to Alpha- Methylacyl-CoA racemase immune staining, all cases showed negative immuno-expression for Alpha- Methylacyl-CoA racemase. There was a statistically significant association of expression of Alpha-Methylacyl-CoA Racemase in prostatic adenocarcinoma group as compared to benign prostatic hyperplasia with a p-value of 0.001.

**Conclusion:** Alpha- Methylacyl-CoA Racemase expression is significantly associated with prostatic adenocarcinomas as compared to benign prostatic hyperplasia and should be used as a diagnostic tool for differentiating between the two.

**Keywords:** Adenocarcinoma prostate, AMACR (Alpha- Methylacyl-CoA racemase), Benign prostate hyperplasia, Immunohistochemistry.

**How to Cite This:**

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