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Diagnostic Patterns and Immunohistochemical Stain Usage in Extended Core Prostate Biopsies: Comparisons Between Genitourinary and Non-Genitourinary Pathologists

Anna Plourde  
*University of Massachusetts Medical School*

Zhong Jiang  
*University of Massachusetts Medical School*

Christopher L. Owens  
*University of Massachusetts Medical School*

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ABSTRACT

Background: Ancillary immunohistochemical (IPOX) stains are useful in clarifying diagnostic challenges posed by prostate biopsies. In diagnostic workup of prostate needle biopsies, stains for basal cells and α-methylacyl coenzyme A racemase (AMACR) are routinely used to support or refute the diagnosis of prostate cancer. Although useful, these stains add cost and must be used judiciously. There is a lack of firm guidelines establishing the proper utilization of IPOX studies in prostate pathology. Therefore, differences in patterns of stain use and diagnoses may exist, related to expertise of the pathologist.

Objectives: The purpose of this study was to compare patterns of diagnoses and IPOX stain use in extended core prostate biopsies between genitourinary (GU) and non-genitourinary (non-GU) pathologists in the University of Massachusetts Medical Center Pathology department.

Methods: By computer search of medical records, consecutive extended core prostate biopsies (6+ cores) from years 2006-2011 were identified. Using Current Procedural Terminology (CPT) billing data, the number of cores and number of IPOX stains were retrieved. Prostate biopsy diagnoses were recorded. Pathologists who diagnosed prostate biopsies meeting computer search criteria were divided into two groups based on expertise: genitourinary and non-genitourinary. Differences in the patterns of IPOX use and diagnoses between the two groups were analyzed.

Results: GU pathologists diagnose significantly higher rates of prostate cancer and atypical small acinar proliferation and significantly lower rates of high-grade prostate intraepithelial neoplasia. Both groups order IPOX stains less as extent of disease increases. The average rate of IPOX use is not significantly different in the two groups. However, GU pathologists order IPOX stains significantly less in cancer cases and more in HGPIN cases. Finally, the variability in rate of IPOX use is higher in the non-GU group.

Conclusion: Significant differences exist in patterns of IPOX use between GU and non-GU pathologists in extended core prostate biopsies in this single institution study. The range of average number of IPOX stains ordered per case is much wider for non-GU pathologists, suggesting both over- and underutilization of stains in this group. This suggests the need for guidelines and continuing education focused on this issue to standardize practice, an intervention likely to improve quality of diagnoses and to reduce unnecessary costs.

REFERENCES