

00572 The Role of PRL-3 in Bladder Cancer: A Diagnostic Adjunct and Potential Therapeutic Target?

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Aims: The expression of phosphatase of regenerating liver 3 (PRL-3) has been found to be upregulated in a wide variety of cancers, and is associated with a higher risk of metastasis and poorer prognosis in certain cancers. In this study, we aim to evaluate the expression of PRL-3 in patients with bladder cancer.

Methodology: 29 patients who underwent transurethral resection of bladder tumour were enrolled in this study. A total of 29 urine samples and 5 tissue samples were obtained. Immunofluorescence assay was used to detect the presence of PRL-3 positive cancer cells in the urine samples. Western immunoblotting was used to detect the presence of PRL-3 in the tumour samples. The results were then correlated with clinical and histopathological data.

Result: 29 patients were enrolled in this study. 25 patients had a histopathological diagnosis of transitional cell carcinoma (TCC) of the bladder; 3 patients had cystitis and 1 patient had amyloidosis of the bladder. 18 out of 19 patients who tested positive for PRL-3 cancer cells had bladder cancer (positive predictive value of 94.7%). Of the 10 patients who were PRL-3 negative, 3 patients did not have bladder cancer (negative predictive value of 30%). PRL-3 cancer cells were detected in 18 out of 25 bladder cancer patients. Of the four patients who did not have bladder cancer, PRL-3 was detected in the urine sample of one patient with cystitis: false positive rate of 25% (n=1/4). Of the 18 patients positive for PRL-3 cancer cells, 13 patients had high-grade disease; 1 patient with carcinoma in situ; 6 patients had muscle invasive disease. Of the remaining 7 patients who were PRL-3 negative, 5 patients had highgrade disease; 2 patients had muscle invasive disease.

Conclusion: PRL-3 is a promising diagnostic biomarker for bladder cancer with potential therapeutic usage.