

細胞核基質蛋白第二十二型試劑在診斷膀胱移行上皮細胞
癌的應用

**Application of the NMP22 test in the diagnosis
of transitional cell carcinoma of the urinary
bladder**

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摘要

目的：我們設計這個前瞻的研究來比較細胞核基質蛋白第二十二型試劑和尿液細胞學的檢查結果。材料及方法：在 2002 年一月和 2003 年七月之間，有表淺性膀胱癌病人 29 例，及尿路結石，攝護腺良性肥大或下泌尿道感染的病人 96 例被包含在這個研究之中。在實施膀胱鏡檢之前，收集新鮮的中段尿液，供作細胞學和細胞核基質蛋白第二十二型試劑的分析之用。最終的診斷則以組織學來加以確認。結果：在偵測膀胱移行上皮細胞癌的敏感度方面，細胞核基質蛋白第二十二型試劑為 86.2%，而尿液細胞學為 51.7%($p<0.001$)。在特異度方面，胞核基質蛋白第二十二型度試劑為 77.1%，而尿液細胞學為 88.5%($p<0.001$)。此外，NMP22 在膀胱癌第一級，第二級的敏感度比尿液細胞學為高，且是有意義的差別(71.4% vs. 14.3%, $p<0.05$; 91.7% vs. 66.7%, $p<0.01$)。不過也有 18 例良性發炎的病人其 NMP22 之試驗呈現焦陽性，造成 NMP22 之陽性預值 53.2%，陰性預估值為 94.9%。結論：就偵測膀胱移行上皮細胞癌而言，細胞核基質蛋白第二十二型試劑是一個簡單的和非侵入的檢驗方法，其敏感度比尿液細胞學高。不過，若病人呈現疑似膀胱癌而又伴有尿路感染，良性攝護腺肥大時，其 NMP22 呈陽性反應時，宜進一步以膀胱鏡來確定檢查。

Abstract

This prospective study was designed to compare the results of the NMP22 test and urinary cytology for detection of transitional cell carcinoma (TCC) of the bladder. MATERIALS AND METHODS: Between January 2002 and July 2003, 29 patients with a history of

superficial bladder cancer and 96 patients with urinary tract infection (UTI), benign prostate hyperplasia (BPH), or urolithiasis enrolled as the control group were included in the study. A fresh, midstream urine sample was collected and divided into 2 aliquots for cytological analysis and application of the NMP22 test before cystoscopy. The final diagnosis was confirmed by histology. RESULTS: The sensitivity in detecting bladder TCC was 86.2% for the NMP22 test and 51.7% for urinary cytology ($p<0.001$). The specificity was 77.1% for the NMP22 test kit and 88.5% for urinary cytology ($p<0.001$). Moreover, the sensitivity of the NMP22 test kit for grade 1 and 2 bladder cancer was significantly higher than that of urine cytology (71.4% vs. 14.3%, $p<0.05$, 91.7% vs. 66.7%, $p<0.01$, respectively). However, there were 22 patients with UTI, BPH, or urolithiasis who revealed a false-positive NMP22 test result, which produced a positive predictive value of 53.2%, while the negative predictive value was as high as 94.9%. CONCLUSIONS: The NMP22 test kit is a simple, noninvasive test and represents significantly better sensitivity over urinary cytology for the detection of bladder TCC. However, patients with suspicious bladder cancer associated with UTI, BPH, or urolithiasis and revealing a positive NMP22 test require further cystoscopic confirmation.