UBC® Rapid
For Bladder Cancer detection
Cystoscopy is invasive and may cause pain and discomfort in patients and in cases with low grade tumors or carcinoma in situ (CIS). Urine cytology, a non-invasive urine test, is often used as an adjunct to cystoscopy. However, even if cytology has the advantage of high specificity its sensitivity varies considerably. To overcome such shortcomings of the existing diagnostic methods for bladder cancer, urine tumor markers are available. One interesting possibility is the measuring of soluble cytokeratin 18 and 18 fragment in urine, since elevated amounts of these cytokeratin fragments are present in the urine of many individuals with bladder cancer, even at early stages of the disease.

UBC®Rapid is a powerful diagnostic parameter in primary diagnosis and follow-up of bladder cancer, especially for papillary non-invasive high-grade tumors and carcinoma in situ (CIS). UBC®Rapid performs better than urine cytology in many patients due to improved sensitivity and the combination of UBC®Rapid and cytology enables detection of additional tumors as opposed to cytology alone. One clear advantage is that UBC®Rapid can be performed immediately and the result will be available during the patient visit.

Background
Bladder cancer is a common cancer in men and women worldwide and transitional cell carcinoma (TCC) comprises up to 90% of all primary bladder tumors. The risk of developing bladder cancer is three to four times higher in men than in women and it increases with smoking, exposure of industrial chemicals and other carcinogens. At presentation more than 70% are non-muscle invasive bladder cancer, but the recurrence rate is high and therefore many patients progress to muscle invasive bladder cancer or metastatic disease. The most common methods for detection of bladder cancer and for the assessment of recurrence are cystoscopy and urine cytology.

CYTOKERATINS
In conditions of high cellular turnover, such as cancer, cytokeratins are released from the epithelial cells and can be detected in blood or urine. At present more than 20 different cytokeratins have been identified, of which cytokeratin 8, 18 and 19 are some of the most abundant in simple epithelial cells. The cytokeratin pattern is usually preserved during the transformation of normal cells into malignant cells.

DIAGNOSTIC
Cystoscopy is invasive and may cause pain and discomfort in patients and in cases with low grade tumors or carcinoma in situ, a diagnosis is not readily performed. Urine cytology, a non-invasive urine test, is often used as an adjunct to cystoscopy. However, even if cytology has the advantage of high specificity its sensitivity varies considerably. To overcome such shortcomings of the existing diagnostic methods for bladder cancer, urine tumor markers are available. One interesting possibility is the measuring of soluble cytokeratin 18 and 18 fragment in urine, since elevated amounts of these cytokeratin fragments are present in the urine of many individuals with bladder cancer, even at early stages of the disease.
UBC® Rapid is a point-of-care (POC) test that specifically measures soluble fragments of cytokeratin 8 and 18 in urine samples. UBC® Rapid shall be used for quantitative determination in combination with the POC-reader concile® Ω100.

The outcome of bladder cancer depends on how advanced it is when it is diagnosed; aggressive non-muscle invasive bladder cancer, muscle invasive or confined to the bladder. Studies have demonstrated that the UBC® Rapid test can identify several primary bladder cancer tumors and is also an ideal marker for monitoring patients with existing bladder cancers and for detecting recurrences earlier (1,3-8). UBC® Rapid can also identify malignancies missed by initial cytology/cystoscopy and with high sensitivity detect high risk tumors (3,7). Due to the rapid format of UBC® Rapid test and ease of use it is an ideal urinary marker as an adjunctive test to standard methods to detect and monitor patients with bladder cancer.

**High sensitivity for CIS**

The performance of the UBC® Rapid POC test platform was further evaluated in a multicenter study (4). Subanalysis of patients with carcinoma in situ demonstrated a very high diagnostic sensitivity (87%) for this aggressive form of bladder cancer that is also difficult to detect with cystoscopy. UBC® Rapid also showed a high diagnostic sensitivity for non-invasive high-grade tumours (71%). It was concluded that UBC® Rapid should be added in the diagnostics for carcinoma in situ and non-invasive high-grade tumors (6).

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**THE FIRST QUANTITATIVE POC TEST PLATFORM – UBC® Rapid**

The first clinical evaluation of UBC® Rapid on a POC test platform (5). The study showed that quantitative results provide higher reproducibility and enable improved risk stratification compared with simple dichotomized POC test results. The accuracy of the POC test platform is at least equivalent to ELISA in bladder cancer patients. UBC® Rapid detects more patients with bladder cancer than NMP22® or cytology. Combining cytology with UBC® Rapid yielded a sensitivity of 86% for detection of bladder cancer in high risk patients. UBC® Rapid might be used as an adjunct to cystoscopy and cytology in laboratory independent settings.

**WORKS IN HAEMATURIA**

UBC® Rapid has the advantage of not being sensitive to blood contamination in the urine – haematuria, which is a common symptom of bladder cancer (2).
UBC® Rapid – For Bladder Cancer detection

TIME COUNTS

- Easy and rapid to perform
- Result within 10 minutes – during the patient visit.

FAST FACTS UBC® Rapid

- The only quantitative POC test platform for urine based detection of bladder cancer.
- Works in haematuria
- UBC® also available as ELISA/IRMA

References:

Provides knowledge to decision.

Oncology
TPS® UBC® TPAcyk® MonoTotal®

Bacteriology
TUBEX® TF


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