FISH Analysis Hematuria, Bladder Cancer – Urine (for Urovysion®)

CPT Code(s): 88275

Service Code (IU Health): 53101747

Ordering Recommendation: Detection of the presence of urothelial carcinoma or transitional cell carcinoma of the bladder in persons with hematuria or suspected bladder cancer and/or monitoring for tumor recurrence in patients previously diagnosed with bladder cancer.

Synonyms: FISH, hematuria, bladder cancer, tumor, urothelial carcinoma, urinary tract cancer.

Methodology: Fluorescence in situ hybridization (FISH) in urine specimens for detection of aneuploidy of chromosomes 3, 7, 17, and loss of the 9p21 locus with the UroVysion Bladder Cancer Kit (UroVysion Kit).

Performed: Monday through Friday

Reported: 2 days

Specimen Requirements

Collect: Voided urine or urethral/ bladder wash in sterile centrifuge tube or sterile, tightly capped screw-top container.

Specimen Volume: 30 mL.

Storage/Transport: Room temperature. Do not freeze.

Unacceptable Conditions: Frozen specimens.

Remarks: Pathology report of specimen to be studied should accompany specimen if available.

Stability: Ambient: 24 hours; Refrigerated: 48 hours; Frozen: Unacceptable

Interpretive Data
Characteristics: In patients with hematuria, a positive result with the UroVysion® probe set is useful in diagnosis of bladder cancer. Increased chromosomal instability and aneuploidy (detected by the UroVysion® probe set) are also indicators of tumor progression. A negative result does not rule out bladder or other urothelial cancer.


Inheritance: Not inherited. Most are somatic mutations.

Cause: Exact cause not known. Multiple risk factors including smoking, exposure to certain industrial chemicals, parasitic infection - schistosomiasis, some chemotherapeutic medications. Genetic factors include mutations in FGFR3, RB1, HRAS, TP53, and TSC1 genes; deletions of part or all of chromosome 9.

Incidence: 4.5% of all new cancer cases, 2.7% of cancer deaths, estimated 74,690 new cases in the US in 2014 (NCI)

Limitations: This analysis does not eliminate the possibility of low frequency mosaicism or small structural abnormalities.

References: