



Coordinated use of Cytology w/ Adjunctive Molecular Testing for Bladder Cancer Monitoring

Cytology Dx	Expected Frequency of Cytology Cases ^{1,2}	Expected FISH Positive Rate ^{1,3}	Recommendation For Further Evaluation	Other Comments
Negative	~80%	< 5%	Routine Follow-up (No FISH)	Patients w/ history or suspicion of LOW grade TCC may warrant reflex Immunocy TM 4
Atypical	12% - 15%	25% - 30%	Reflex UroVysion TM FISH on current specimen; manage patient based on FISH result	Patients w. neg. FISH are presumed to have cytologic atypia due to benign condition. However, as FISH is not 100% sensitive, patients should be managed based on all available clinical and lab data. Patients w/ pos. FISH and negative concurrent or subsequent cystoscopy may have upper tract or prostatic urethra disease or anticipatory positive FISH, warranting close follow up.
Suspicious	3% - 5%	60% - 70%	Reflex UroVysion TM FISH on current specimen; manage patient based on FISH result	
Positive	2% - 3%	95% - 100%	Proceed Based on Positive Cytology (No FISH)	Positive cytology and negative concurrent or subsequent cystoscopy is not expected, but could rarely be related to sampling and/or upper tract or prostatic urethra disease.

Urine Specimen Submission	Recommendation for Further Evaluation	Other Comments
FISH Only	Manage Patients Based on FISH Results	As FISH is not 100 % sensitive, patients with neg. FISH should be managed based on all available clinical and lab data. Patients with pos. FISH and neg. concurrent or subsequent cystoscopy may have upper tract or prostatic urethra disease or result may represent anticipatory positive FISH, with high risk of future clinically evident TCC, warranting close follow-up.
Cytology Plus FISH	Manage Patients Based on FISH Result, Incorporating cytology as indicated (See other comments)	Morphologic correlation by experienced cytopathologist may be useful in some scenarios. For example, negative FISH with strongly suspicious cytology can rarely be due to sampling/lab issues, and destaining cytology slide for repeat FISH may be indicated. Rarely, positive FISH may be due to non-Urothelial gynecologic or other malignancies or precursor lesions, deduced only upon cytology review.