Application of DNA-image cytometry for the diagnose of urothelial cell carcinomas

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**Objective:** DNA-Image-Cytometry (DNA-ICM) is to assist in the early microscopical diagnosis and grading of various types of tumors, measuring the DNA-contents of their cells. This study investigates the value of DNA-image cytometry (DNA-ICM) for the diagnose of ur-othelial cell carcinomas (UCC).

**Methods:** 162 voided urine specimens (92 cases from urothelial carcinomas patients and 70 cases from benign urinary system diseases patients) were detected with DNA-ICM and liquid-based cytology (LBC) respectively. The sensitivity and specificity of DNA ICM and LBC were calculated by comparing with the pathology in cells with moderate and severe dysplasia.

**Results:** The sensitivity and specificity of DNA-ICM were 65.2% and 100% in the diagnose of UCC. And which of LBC were 27.2% and 98.6%, respectively. The sensitivity of DNA-ICM was significantly higher than that of LBC for the diagnose of UCC (P<0.01). The sensitivity of DNA-ICM in Upper Urinary Tract Urothelial Cell Carcinomas (UTCU) were 77.1% which is much higher than 57.9% in bladder urothelial cell carcinomas (P>0.01).

**Conclusion:** DNA-ICM has great application value in terms of the diagnosis of urothelial cell carcinomas. And it is an effective screening method of urothelial cancer in diagnosis and follow-up, which improve the positive rate of urinary cytology.