NBI Cystoscopy in Non-Muscle Invasive Bladder Cancer: A Prospective Comparison to the Standard Approach

Introduction and Objective: A single centre, prospective trial was performed aiming to assess the impact of narrow band imaging (NBI) cystoscopy in cases of non-muscle invasive bladder cancer (NMIBC) by comparison to standard white light cystoscopy (WLC).
Materials and Methods: A total of 95 NMIBC suspected consecutive cases were enrolled. The inclusion criteria were hematuria, positive urinary cytology and/or ultrasound suspicion of bladder tumors. All patients underwent WLC followed by NBI cystoscopy, resulting in separate bladder maps of all WL and respectively NBI diagnosed lesions. White light TURBT was performed for all lesions visible at standard cystoscopy, while NBI resection was applied for lesions observed in NBI alone.
Results: The overall NMIBC and CIS patients' detection rates were significantly improved for NBI (96.2% versus 87.2% and 100% versus 66.7%). Also, on a lesions' related basis, NBI cystoscopy emphasized a significantly superior detection concerning the CIS, pTa and overall tumors (95.2% versus 61.9%, 93.9% versus 85.2% and 94.8% versus 83.9%, respectively). Additional tumors were diagnosed by NBI in a significant proportion of CIS, pTa, pT1 and NMIBC patients (55.5% versus 11.1%, 26.5% versus 10.2%, 30% versus 10% and 30.8% versus 10.3%). The rate of false positive results was statistically similar for NBI and WLC (13.6% versus 11.5%). Subsequent to these diagnostic findings, the postoperative instillation treatment was improved due to NBI cystoscopy in a significantly larger number of NMIBC cases (16.7% versus 5.1%).
Conclusions: NBI cystoscopy represents a valuable diagnostic alternative in NMIBC patients, with significant improvement of tumor visual accuracy as well as detection. This approach provided a substantial amelioration to the bladder cancer therapeutic management.