Our experience with NBI. Can it improve our ability to identify bladder tumors progression in the follow-up?
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Introduction: Although NMIBC is usually not life-threatening in the early stage, more than half of these tumors will relapse and approximately 10% to 20% of these tumors will develop into muscle-invasive bladder tumors.

Aim: Aim of this study was to evaluate if use of light NBI (repeat NBI-assisted TURBT), during the follow-up, can lead advantage to identify undetected residual tumors following WL-TURBT.

Materials and Methods: From June 2010 to April 2012, 797 patients—423 male and 374 female—affected by primitive, recurrent or suspicious bladder lesions, underwent WL plus NBI cystoscopy and following WL-TURBT with bipolar Gyrus PK. Of those, 512 presented oncological bladder lesions and 444 pts, in according with EAU guidelines, were submitted to a 12 month’s follow-up.

After performed WL TURBT 6 risk factors were assessed: tumor size (cm), number of tumors, recurrence rate within one year, staging (T), grading (G), and CIS. Then, basing on mentioned factors and using the EORTC scoring system, the total score for recurrence for each patient was calculated separately.

According to the total score, patients were divided into 4 recurrence risk groups. Patients with total recurrence score 0 were classified to group I, 2-6 points to group II, 7-13 to group III, and 14-23 to group IV risk of recurrence. Every three months, we performed a WLTURBT and a repeat NBI assisted TURBT on any suspected lesion (or scar), on our relative margins and buttom and collected all data. We calculated the time to first progression to decide if performed WL cystoscopy or repeat NBI assisted TURBT after the diagnosis of bladder cancer.

The follow-up period had to be at least year.

Statistically, we performed Kaplan-Meier survival analysis; performed univariate and multivariate Cox proportional hazards regression analyses.

Results: Following WLTURBT, we observed that three (0,67%) patients had progression to muscle invasion bladder lesions, than after repeat NBI assisted TURBT eleven patients (2,48%) developed progression to pT2 bladder tumor in 12 months of follow-up. Of those, all lesions were localized in the buttom.

Regarding to stratification in EORTC risk progression group we observed that 41,6% and 58,3% were II, and IV groups respectively. The high risk groups presented an elevated risk to present a persistent progression disease following repeat NBI assisted TURBT than low and intermediate risk groups. Stratifying these data for staging (pT) and grading, we observed a progression to pT2 in 16,6% pTaLG, and pTaHG, in 58,3% pT1HG and in 8,3 pCISHG, respectively.

If we evaluate the progression, as an increasing recurrence in staging and grading of the primary lesion but always non-muscle invasive, in the analyzed group within one year occurred in 265 patients (59,6%). The risk of bladder tumor progression was statistically more frequent in intermediate-risk group. The recurrence rate was 0%, 18,8%,45,6%, and 35,4% in I, II, III and IV progression risk group, respectively. In a multivariate analyses focality (p <0,05) was a significant predictor to progression than status (p = 0,35 ) and dimensions (p=0,43).

The overall time to progression following repeat NBI assisted TURBt in patients with to progression to pT2 than only upgrading staging and grading was 3,7 months; thus on buttom and margins were 3,29 and 6,41, respectively.

Conclusions: Repeat NBI assisted TURBt allows a statistically significant advantage in identifying progression undetected residual tumors following WL-TURBT. Focality was a significant predictor to progression.