SC70 The feasibility and prognostic value of sequential evaluation of EGFR cell expression in bladder washings after transurethral resection of Non-Muscle Invasive Bladder Cancer: A new potential tool to identify patients at higher risk of disease progression

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Aim of the study: The prognosis of non-muscle-invasive bladder cancer (NMIBC) is not homogeneous. Although the management of NMIBC has significantly improved during the past few years, it remains difficult to predict the oncologic outcomes of such tumors, especially if high-grade NMIBC is present. Aim of the study was to investigate the feasibility of Epidermal Growth Factor Receptor (EGFR) measurement in bladder washings of patients affected by NMIBC and its prognostic role in identifying risk subgroups and predicting disease recurrence and progression.
Materials and methods: Patients with NMIBC treated with trans-urethral resection of bladder tumor (TURBT) from 2012 and 2015 were enrolled. Samples of bladder washings were centrifuged at 4 °C for 10 minutes at 1500 rpm, washed in cold phosphate buffer saline solution and centrifuged again obtaining a cellular pellet stored at –80°C until RNA extraction, performed by a miRNeasy Mini Kit (Qiagen®). The cDNA obtained from RNA by High Capacity cDNA Reverse Transcription Kit" (Life Technologies®) was used to perform a gene expression analysis by a Real Time PCR. EGFR overexpression was defined as a ≥2.0 folds of change increase compared to healthy controls.
Results: An adequate cellular pellet was obtained in 50 (86.2%) of 58 patients and in 18 (85.7%) of 21 controls. Patients had a median 2.5-, a 1.6- and a 2.8-fold EGFR expression compared to controls before, during and after adjuvant treatment. Overall, 18 (36%) patients had EGFR overexpression before adjuvant treatment and 21 (42%) patients had an increasing trend of EGFR expression after adjuvant treatment. Patients at higher risk had a significantly higher EGFR expression compared to patients at low and intermediate risk when EGFR was measured during (p = 0.04) and after (p = 0.001) adjuvant therapy. At a median follow-up of 35.5 (IQR 19.0–54.8) months, in the high-risk group patients with overexpression had a significantly lower recurrence-free survival (27.9% vs 58%), progression-free survival (75.9% vs 90.2%) and cancer-specific survival (77.7% vs 93.3%) [Figure 1]. At multivariable analysis, EGFR overexpression was an additional independent prognostic factor to the EORTC scoring system of disease recurrence (HR 1.98, 95% CI 1.32–2.97) and progression (HR 1.84, 95% CI 1.27–2.65).

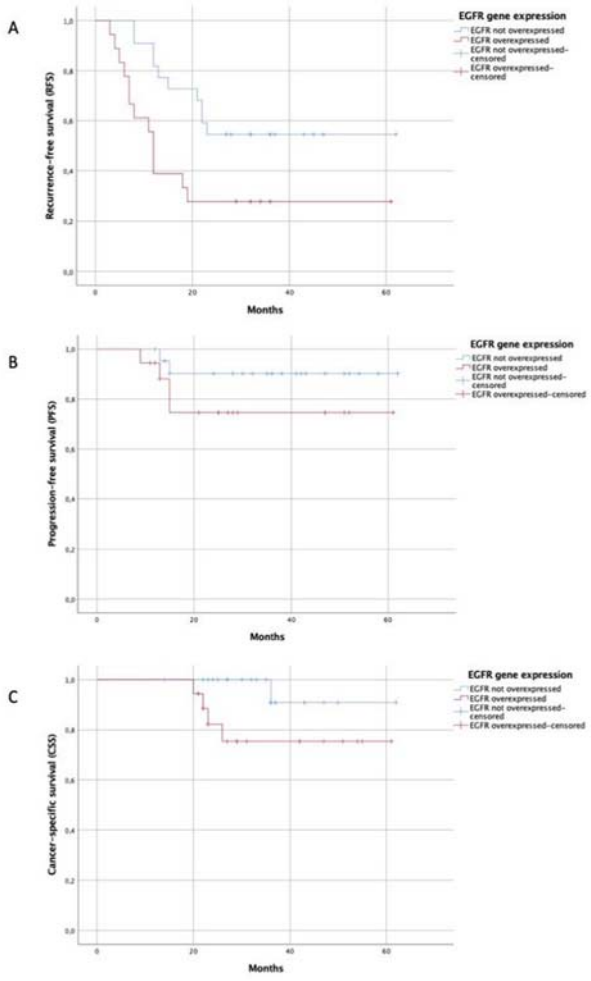

Figure 1: Kaplan-Meier curves depicting recurrence-free survival (A), progression-free survival (B), and cancer specific survival (C), in 40 high-risk patients according to EGFR expression

Discussion: The choice between conservative management and radical surgery in high risk NMIBC remains uncertain. EGFR evaluation in bladder washings might represent an additional parameter to the current clinical tools for an individualized risk stratification.

SC71 Possible role of 5-alpha reductase inhibitors in non-invasive bladder urothelial neoplasm: Multicentric retrospective study

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Aim of the study: About 75% of urothelial carcinoma of the bladder are non-invasive (non-muscle-invasive bladder cancer, NMIBC), therefore limited to mucosa (Ta or CIS) or sub-mucous (T1). Several studies have shown that androgens are implicated in bladder carcinogenesis: the increase in androgen expression and androgen receptors have a positive effect on oncogenic expression, which can lead to an increase of those specific proteins that promote the proliferation, invasiveness and motility of neoplastic cells. The aim of the study was to evaluate whether 5-alpha reductase inhibitors (5-ARI) have a role in NMIBC.
Materials and methods: The retrospective analysis was conducted on 293 patients diagnosed with NMIBC who underwent transurethral resection of the bladder (TURB), from 2013 to 2018. The study was