P031 Neoadjuvant docetaxel treatment for locally advanced prostate cancer: A clinicopathologic study

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Introduction & Objectives: The main objective was to determine the histologic and immunohistochemical changes after neoadjuvant docetaxel chemotherapy high risk prostate cancer (PCa).

Materials & Methods: 47 patients were enrolled between April 2014 and December 2018 in NMRC of oncology. Eligibility criteria included histologically documented, locally advanced PCa high and very high risk without evidence of metastatic disease. The Local Ethics Committee approved the study protocol No. 1 of February 13, 2014, before all procedures were completed. Neoadjuvant treatment (NT) included 3-weekly docetaxel (75 mg/m2 for up to 6 cycles) with concomitant degarelix (6 monthly injections). Tissue Micriarray Analysis (TMA) were used for immunohistochemistry (IHC) to analyze the expression of a panel of molecules: p53, bcl-2, p16, ki67, androgen receptors, c-myc, ERG, PTEN.

Results: The NT and surgical treatment was performed in 35 (74.5%) casws. The expression p53 mutant type before therapy revealed in 6 (16.8%) cases and only 2 cases (5.6%) after NT. Both cases of the mutant type connected with a locally advanced form of PCa, ISUP5 and median RFS of 15.25±9.63 months. Only 2 patients (5.6%) had negative expression of Ki-67 protein before surgery, in other cases the average level of protein expression was 1+or ∆9.3±6.78%. After NT 80.6% of cases showed a significant decrease in the proliferative activity index to Δ2.83±2.16 (CI 95%: 1.96-11.03, p = 0.009). Evaluation of p16 revealed a significant 2-fold decrease in protein expression from 55.5% to 25.0% after NT. Positive ERG expression on biopsy specimens were detected in 66.7% of cases, but after it decreased to 52.0% (p>0.05). Before surgery, ¼ patients were PTEN positive, however, after a complete loss of expression was revealed. One-way analysis proved the effect of the PTEN loss associated with metastatic form PCa (ypT1-4N1 p = 0.01), a lower degree of the ISUP (p = 0.013) according to Fisher test. C-myc protein expression was detected in 24 patients (66.7%), a negative reaction in only 7 (19.4%), distribution androgens receptors revealed a higher level of expression before NT of 79.16 ± 22.34%, after loss of receptors in tumor tissue samples was not obtained=52.5±28.88% (p = 0.15 Wilcoxon test). A multivariate analysis MANOVA revealed a strong relationship between proto-oncogen activity and expression of androgen receptors (p = 0.002 Fisher test).

Conclusions: In this study we could demonstrate that a taxanes has antitumor activity in combination with degarelix. In all cases, a statistically significant change in the expression of IHC markers after NT was revealed, which probably can be associated with manifestations of pathomorphoses and requires an additional assessment of the relationship with changes in histoarchitectonics.