

Venclovas Z. , Jievaltas M. , Milonas D.

Lithuanian University of Health Sciences, Dept. of Urology, Kaunas, Lithuania

Introduction & Objectives: The aim of this study was to describe age related prostate cancer (PCa) characteristics in men after radical prostatectomy (RP).

Materials & Methods: 2,373 men who underwent RP for clinically localized PCa between 2002 and 2017 and had complete data were included into the study. Exclusion criteria were incomplete clinical or pathological data or who underwent neoadjuvant treatment. Among them, 315 (13.3%) men aged ≤ 55 years (GR-1), 1,098 (46.3%) men aged between 56 to 65 years (GR-2) and 960 (40.4%) men aged older than 65 years (GR-3) were identified. All preoperative and pathological parameters were compared between all three groups and between each group separately. High-risk prostate cancer (HRPCa) cases were analyzed separately. HRPCa was defined as clinical stage T3 and/or biopsy Gleason score 8-10 and/or preoperative prostate specific antigen (PSA) value >20 ng/ml

The Chi-square test for nominal variables and the Mann-Whitney test for continuous variables were used to compare baseline clinical and pathological characteristics. The 2-sided Fisher's exact test was used to compare values between two groups: GR1 vs. GR2, GR1 vs. GR3 and GR2 vs. GR3. Logistic regression analysis was used to evaluate the impact of age on cancer aggressiveness.

Results: Clinical stage (cT), biopsy Gleason score and D'Amico risk groups were different comparing age related study groups (all $p < 0.01$), respectively. Preoperatively cT1 and Gleason 6 were in the highest rate for GR-1 in comparison with GR-3: 35.9 vs. 27.1%, $p = 0.003$ and 65.1% vs. 56.7%, $p = 0.008$, respectively.

Analyzing pathological parameters, only Gleason 9-10 was different between GR-1 and GR-3 – 3.8 vs. 7.6%, $p = 0.02$. There were 921 (38.8%) HRPCa identified. Age was a significant predictor for high-risk PCa ($p = 0.019$) in regression analysis. The oldest men (GR-3) had up to 1.5 fold increased risk for HRPCa detection in comparison with the youngest one ($p = 0.008$, HR1.44. 95% CI 1.098-1.874).

Conclusions: Younger, up to 55-year-old men, are more likely to present with less aggressive clinical and pathological PCa features in comparison with the older ones. Increasing age has a significant influence on HRPCa detection after RP.