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Introduction & Objectives: Penile cancer (PCa) is a malignant tumor that affects penile skin or other penile tissue. Most of the lesions are histologically classified as squamous cell carcinomas (SCCs). PCa mostly affects older men, the peak is 60-70 years of age. It is rare oncological disease in Europe and North America with an annual incidence of about 1 per 100 000 men. Incidence of PCa in Europe has not changed significantly since 1980s, but the recent studies have shown a mild incidence increase in USA, United Kingdom and Norway. Mortality rates do not vary significantly for the last 20 years. During the last 28 years there has not been any comprehensive and detailed study in Latvia, reflecting epidemiological situation of PCa.

The aim of the study was to determine the epidemiology trends and survival of PCa in Latvia between 2000-2017.

Materials & Methods: The present study was based on data from the database on population-based disease register and Cause of Death Register in Latvian population collected from Centre for Disease Prevention and Control of Latvia. We analyzed data of patients with PCa diagnosis (ICD-O-3.1. topographical code C60, morphological codes 8070/3, 8071/3, 8072/3, 8073/3, 8074/3, 8075/3, 8076/3, 8078/3, 8083/3, 8050/3, 8051/3, 8560/3). Trend analyses of incidence and mortality were performed using joinpoint regression (Joinpoint Regression Program 4.5.0.1.). 5-year survival analysis was assessed using Kaplan-Meier method (IBM SPSS). The Cox proportional hazards model was used to compare survival rates difference between place of residence in Latvia.

Results: In total, 281 of PCa were diagnosed in Latvia during 2000 – 2017, among which 220 cases (78.3%) were SCCs. Mean age at diagnosis of PCa was 64.58, ranged 25-96 years. Cancer stage at diagnosis: stage I – 43 (19.5%), stage II - 87 (39.5%), stage III – 59 (26.8 %), stage IV – 24 (10.9 %), stage unknown – 7 (3.2%). 6 cases from survival analysis were excluded because cancer was identified from death certificates only or discovered at autopsy. Mean age standardized incidence rates (ASIR) was 0.82 per 100 000 males. Mean age standardized mortality rates (ASMR) was 0.43 per 100 000 males. Overall 5-year survival – 47.7 % (95% CI 39.9-55.5%). Cancer specific 5-year survival – 64.1% (95% CI 56.3 – 71.9%). Overall 5-year survival for stages I and II was 64.4% (95% CI 54.4 – 74.4%). Overall 5-year survival for stages III and IV was 25.8 % (95% CI 14.8 – 36.8%). No significant change in ASIR and ASMR was observed between 2000-2017, annual percent change – 1.5 and 1.2% accordingly (95% CI -0.9 – 4.0% and -1.49 – 3.9%). There was no difference in survival between place of residence in Latvia.

Conclusions: Penile SCCs remains rare in Latvia. Survival rates, ASIR and ASMR have remained constant over time.