

# The Impact of Covid-19 Pandemic on Genitourinary Cancers Stage and Grade

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## Abstract

**Introduction:** The COVID-19 pandemic overburdens the healthcare system, and pandemic fears, public reluctance, social isolation, and quarantine can adversely affect patients with urinary tract cancer. The goal of this retrospective study was whether the COVID-19 pandemic affected the number of uro-oncological surgeries like cystectomy, nephrectomy, prostatectomy, orchiectomy, transurethral resection of bladder tumor (TURBT), and the tumor response through pathological staging and grading during the pandemic in Iran's biggest tertiary center.

**Materials and Methods:** The present study is a retrospective study on patients with urology cancers treated from 2018 to 2021. The data were obtained from the hospital records with lengths of 22 and 23 months, labeled hereafter as pre-COVID and during-COVID, respectively (2018/3/21-2020/1/20 and 2020/1/21-2021/12/21). In this study, pathologically confirmed malignant urological tumors were recruited. The staging was assessed according to the American Joint Committee on Cancer (AJCC), and grading was based on the World Health Organization/International Society of Urologic Pathologists (WHO/ISUP) grading system (2016). The total number of registered patients, gender, age, stage, and grade were compared in three targeted periods. Moreover, all the pathologic slides were reviewed by an expert uropathologist before enrolling in the study. The continuous and discrete variables are reported as mean (standard deviation (SD)) and number (percent) and the Chi-squared test for the comparison of the discrete variables' distribution.

**Results:** In this study total number of 2077 patients were enrolled. The tumors' distribution and patients' baseline characteristics were not significantly different in pre-COVID-19 and COVID-19 pandemic periods. Data of registered tumors demonstrated that the tumor stage in Radical Nephrectomy, Radical Cystectomy, Radical Prostatectomy, orchiectomy was not statistically meaningful between the three time periods. About staging, the only significant difference of pre/during COVID period was observed for TURBT ( $p < 0.001$ ). Moreover, in terms of tumor grade, only TURBT was statistically significant. The Gleason scores for prostatectomy showed no significant differences. The TURBT low and high grades in men and women were significantly different between pre-COVID-19 ( $p$ -value = 0.003) COVID-19 pandemic ( $p$ -value = 0.004) periods.

**Conclusion:** Among urinary tract cancers, staging and grading in the earliest stages of bladder cancer and TURBT are mainly impacted by the COVID-19 pandemic.

**Keywords:** COVID-19 pandemic; Nephrectomy; Cystectomy; Prostatectomy; Orchiectomy; TURBT

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