

Urological practice during COVID-19 pandemic in Târgu Mureș

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Abstract

Introduction and Objectives: The COVID-19 infection became the highest medical challenge in our days, with consequences on the healthcare system activity. The elective urological surgeries were canceled or postponed due to the high risk of COVID-19 infection, reduced medical resources and number of beds or limited number of healthcare workers from the hospital. The emergency cases were selected and treated under strict caution with adequate equipment.

Material and Methods: We performed a prospective observational study from 06 April 2020 to 29 May 2020 that comprised 102 patients who were admitted for suspected infection with SARS-COV2 having urological or non-urological associated comorbidities.

Results: The suspicion of COVID-19 infection rate was more frequent encountered in men (61,8 %) compared with female patients (38,2%). The mean age was 52.77 years. From the total of 102 patients only 25 (24,5%) were confirmed with Covid 19 infection including 4 (3,92%) with urological pathology. Associated urological pathology was diagnosed in 23 (22,54%) of the cases and 79 (77,45%) presented no urological disease. 7 patients presented indication for urological procedure: suprapubic cystostomy (1 patient), nephrostomy tube insertion (3 patients), ureteral stent insertion (1 patient), urinary catheter insertion (2 patients). The statistical analysis revealed that there was no statistical correlation between the number of patients diagnosed with SARS COV2 infection and urological patients, $p > 0,005$ ($p = 0,95$.)

Conclusion: The COVID-19 pandemic is an enormous challenge for everyday practice, including urology, because of the delay of urological services, especially in oncological cases.

Keywords: COVID-19 pandemic, urological surgeries, urological pathology, healthcare workers

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Introduction

In December 2019, China reported the first cases of pneumonia with a new coronavirus, SARS COV-2 (1). Since then the infection rapidly spread to other countries and due to the highest number of infections a pandemic was declared in March 2020^[2]

SARS COV-2 is a type of coronavirus having the origin from bats, highly contagious, with three main routes of transmission: human contact, aerosol and transmission by touch^[3].

The COVID-19 infection became the greatest challenge for the healthcare workers from all over the world in our days^[3]. The surgical specialties, including Urology had to change their priorities regarding the indication and practice of surgical procedures^[4]. Many urologists had to dedicate a part or all of their practice to COVID-19 patients. In those conditions, the residency training programs and their movement in different hospitals was compromised^[5].

In most of the countries all the elective urological surgeries were canceled or postponed because of the high risk of COVID-19 infection, limited ventilators available, limited number of healthcare workers or reduced number of beds from the hospital (3). The surgical practice in urology was limited to emergencies like: urinary tract obstruction, infection, acute renal failure, sepsis, trauma with hemodynamical instable patient.^[4]

In case of cancer suspicion or confirmed, stable oncological patients, surgery was delayed.^[6]

In all of Covid 19 confirmed or suspected cases, surgery required to be performed under strict caution.^[7]

Materials and Methods

The aim of this study was to evaluate the suspected cases with SARS-COV 2 infection admitted in Clinic of Urology from Tg Mures.

We performed a prospective observational study from 06 April 2020 to 29 May 2020 that comprised 102 patients who were admitted for suspected infection with SARS-COV 2 having urological or non-urological associated comorbidities.

All the patients admitted presented symptoms or signs of COVID-19 infection and were tested by RT-PCR for the virus identification.

We performed a statistical analysis of the data following the age, gender, rural and urban environment, number of patients with urological pathology tested positive and negative for COVID-19, number of patients with non-urological pathology tested positive and negative, number of patients with other comorbidities and

number of patients underwent urological surgery. Prior to statistical analysis were the number of patients admitted in our clinic with urological pathologies and number of urological surgeries that we performed.

All the personal informations of the patients are confidential.

Results

Statistical analysis of the database, revealed that men admitted with the suspicion of COVID-19 infection were more frequently encountered (61,8%), than women (38,2%) (Table 1). The mean age of the patients was 52.77 years (limits 18 and 92 years). The majority of the patients (61%) came from rural environment while only 39% from urban one. (Table 1).

From the total of 102 patients only 25 (24,5%) were confirmed with Covid 19 infection including 4 (3,92%) with urological pathology. Concerning associated urological pathology this was diagnosed in 23 (22,54%) of the cases (Group 1), the remaining 79 (77,45%) presented no urological disease (Group 2). (Table 1)

The patients with urological pathology (23 cases) were diagnosed with the following: 4 (3,92%) patients with urosepsis secondary to ureteral lithiasis or hydronephrosis, 2 (1,96%) patients with complete urinary retention, 1 (0,98%) with urethral stricture, 2 (1,96%) pyelonephritis, 5 (4,90%) benign prostate hyperplasia, 4 (3,92%) hematuria, 3 (2,94%) urinary infection, 1 (0,98%) prostate cancer, 1 (0,98%) ureteral lithiasis. (Table 1)

Characteristics	Number of patients (percent)
Total number of patients	102
Age, mean	52.77
Male	63 (61,8%)
Female	39 (38,2%)
Environment provenance	
Rural	61%
Urban	39%
Urological pathology	23 (22,54%)
With COVID-19	4 (3,92%)
Without COVID-19	19 (18,62%)
Non Urological pathology	79 (77,45%)
With COVID-19	21 (20,58%)
Without COVID-19	58 (56,86%)
Urological associated diagnosis	23 (22,54%)

Urosepsis secondary to ureteral lithiasis or hydronephrosis	4 (3,92%)
Complete urinary retention	2 (1,96%)
Urethral stricture	1 (0,98%)
Pyelonephritis	2 (1,96%)
Benign prostate hyperplasia	5 (4,90%)
Haematuria	4 (3,92%)
Urinary infection	3 (2,94%)
Prostate cancer	1 (0,98%)
Ureteral lithiasis	1 (0,98%)

Table 1: Demographics and Clinical characteristics of patients with COVID-19

Only 7 from the total of 102 cases (6,86%) presented indication for urological procedure: suprapubic cystostomy (1 patient), nephrostomy tube insertion (3 patients), ureteral stent insertion (1 patient), urinary catheter insertion (2 patients). (Figure 1)

The statistical analysis revealed that the number of urological patients with COVID-19 infection was insignificant and there was no statistical correlation between the total of patients diagnosed with SARS COV2 infection and urological patients, $p > 0,005$ ($p = 0,95$.)

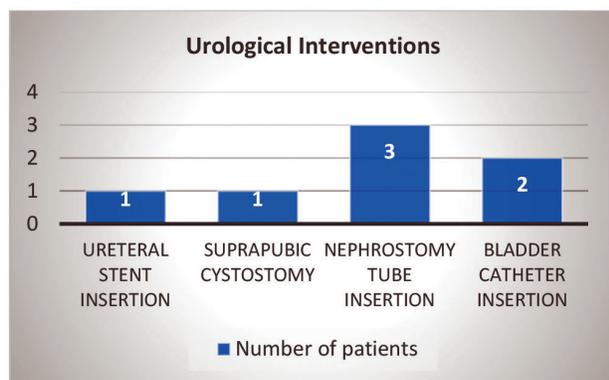


Figure 1: Type of urological interventions

Concerning associated, non-urological comorbidities from the total of 102 cases, in 80,39%, there were documented the following: Cardiovascular disease, Diabetes, Hipertension, Pneumonia, Asthma, Chronic pulmonary obstruction. The distribution of the associated comorbidities in the urological and non-urological group was: 20 cases versus 79. (Figure 2)

Discussion

The urological practice from our clinic and from several other urological centers in our country suffered significant changes during Covid pandemia, there

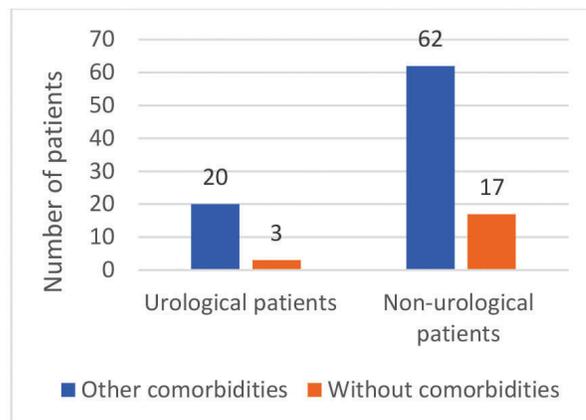


Figure 2: Comorbidities in urological and non-urological group

were postponements of all elective outpatient visits and surgical procedures in order to save facilities and resources for urgent cases and patients with COVID-19 patients.

RT-PCR was the laboratory test that was used to confirm Covid 19 infection, in association with clinical data, laboratory and imagistic findings (pulmonary radiography or computer tomography) [9,10].

Unfortunately, COVID pandemic had and will have a high impact on surgical training and trainee progression [4]. A lot of surgical procedures interventions on patients with urological or onco-urological comorbidities, that are not urgent, are postponed, the oncological treatment in patients with stable cancer being delayed, so this can have an impact on short-term progression, can worsen the clinical treatment outcomes and/or influence the mortality rates [11]. In our clinic, during the COVID-19 pandemic, we were able to perform surgeries just for emergency urological conditions that totaled 6,86% of the total of 102 admitted patients. As it can be observed, the majority of the hospitalized cases from our clinic were non-urological ones, so we had to organize our resources and medical knowledges to treat patients with COVID-19 infection and non-urological comorbidities.

A study from Africa, Australia and New Zealand described the degree of delay of urological services increased with the degree of COVID-19 outbreak, on average 28% of outpatient clinics, 30% of outpatient investigations and procedures, 31% of urological surgeries had delay more than 8 week [12]. Another study that included 2494 urologists from 76 countries who completed an online survey by the Société Internationale d'Urologie (SIU), the largest proportion were from Europe, with the remainder from East/Southeast Asia, West/Southwest Asia, Africa, South America and North

America revealed significant restrictions in outpatient examination and non-emergency surgery, the restriction was worldwide but lower in East/Southeast Asia^[13].

Conclusions

During the pandemic, healthcare workers including urologists were and will be facing increasingly difficult challenges, so the main interest has to be to adopt a very strict triage strategy to avoid wasting of medical resources. Also an important issue was and will be the adoption of protection policies to guard against infection. The COVID-19 pandemic is an enormous challenge for everyday practice, including urology, because of the delay of urological services, especially in oncological cases. If surgical procedures are unavoidable, it is recommended to respect recent EAU Covid 19 guidelines, and all procedures should be performed by experienced urologists, with the minimum number of staff members.

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