

Operative Urological Emergency a Pre-Covid and Peri-Covid 19 Brief Comparison

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Abstract

Objective: The goal of this study is to compare the number of operative urological emergencies in pre-covid and peri-covid 19 pandemics, as well as the pattern of operative urological emergencies in pre-covid and peri-covid 19 pandemics.

Methodology: Retrospective study was conducted in the urology department of the Medical Teaching Institute at Lady Reading hospital Peshawar. All pre-covid and peri-covid operative urological emergency procedures performed between July 18, 2019 and February 25, 2020 (pre-covid) and February 26, 2020 to September 25, 2020 (peri-covid). Total numbers of 73 patients were operated as urological emergency. Mean patient age was 38 years (range 15 to 70) and male to female ratio was 5:1.

Results: Twenty six patients were operated in the pre-covid timings having 18 males and 08 female patients, mean age 36±13 years. Forty seven patients were operated in the peri-covid time (38 males and 09 females) having age of 40±14 years. T test was applied, and no statistical significance was observed in both durations. A total of 36% emergency cases were operated in the pre-covid times whereas 64% of patients were operated in the peri-covid timings. Chi square test of independence revealed no statistical significance (N=73) =15, p=0.109. No difference in emergency pattern was observed except obstructive-uropathy. Obstructive uropathy was treated in 27% of patients during the precovid period, while 73% were treated during the pericovid period (p = 0.375).

Conclusion: Covid has no impact on the number and pattern of operative urological emergency.

Key words: Covid, urology, operative

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Introduction

Covid-19 was a highly contagious infection caused by the SARS-CoV virus that resulted in an acute respiratory distress syndrome (ARDS)-like disease that began in Wuhan, Hubei Province, China.¹ On 11th of March 2020 it was declared as a global pandemic by World health organization The first two cases of COVID-19 in Pakistan were reported on February 26, 2020. Pneumonitis is one of the fatal sequels of this virus.⁴ After the rapid spread of this disease throughout the world, it has jolted all spheres of society, from the economic sector to the education sector and from the health sector to the social sector.^{5,6} The death toll from COVID infection was in the thousands for the majority of

the countries individually.⁷ The economic sector has been hit by a drastic recession throughout the world, mostly affecting poor individuals working on daily wages.⁸ Similarly, the health sector has taken the brunt of the damage, resulting in hospital overcrowding with COVID-infected patients. In the majority of countries, outpatient departments were closed, as well as elective surgeries were postponed as most of the health resources were poured into fighting the Corona virus pandemic. Pakistan is also one of the countries affected by the Corona virus pandemic, and diagnosed cases of COVID were at an all-time high at the time this research article was being written.⁹ In public sector almost all outpatient departments of Hospitals are closed and elective surgeries are postponed instead only covid services as

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well as emergency medical services are provided. Lady reading hospital is one of the leading health care providers of the Khyber Pakhtunkhwa province of Pakistan, providing the best possible covid services as well as emergency health care services to the needy population.

Emergency urological services are one of the important segments of emergency surgical and allied services. Operative urological emergencies were one of the more infrequent parts of an overall surgical emergency. Out of all surgical emergency admissions, urological emergencies comprise 6% of the total, and 27% of the urological admissions.¹⁰ In another research article from Turkey by Ramazan et al the urological share of total surgical emergencies was 2.19%.¹¹ In a breakdown analysis of all the different types of urological emergencies, the highest frequency was detected for Genito urinary infections with 41.2% and the least was detected for penile fractures with 0.2%. The incidence of renal trauma urethral injuries, penile and bladder trauma was 12.2, 20.4, 16.3, and 14.2% respectively. The distribution of emergencies in which surgical intervention was done is as follows Percutaneous cystostomy 22.3%, Clot evacuation 15.1%, Emergency ureterorenoscopy 5.9%, Repair of penile fracture 4.6% Repair of bladder rupture 2.6% Renal exploration 2.6%, Debridement of Fournier's gangrene 1.3%.¹¹ According to data from Civil Hospital Karachi, urological emergencies account for 3.3% of total surgical workload.¹² No specific national urological emergency data was found after a thorough search of different search engines.

Covid-19 is one of the biggest threat faced by health care system throughout the world. It has a gross impact on all aspects of human society, including Urology care. A lot of research is going on in order to change the guidelines globally and transfer more and more resources towards the fight against covid-19. Very brief recommendations have been given regarding management of urological emergencies as stated by the British Journal of Urology (BJU). Urinary tract obstruction, nephrostomy tubes and ureteric stents should be considered first under local anesthesia if feasible otherwise general anesthesia should be on second priority. Surgical exploration for genitourinary trauma should be considered only in haemodynamically unstable patients.¹³ Beside emergencies, elective urological services have been reduced from 30 to 15% in Italy, which is one of the worst effected country by

covid-19. Even after down grading services to such a level reprioritization has been done in providing essential urological services.¹⁴ Keeping in view all the above mentioned facts it is highly possible that corona services at our hospital have a significant impact on operative urological emergencies

There is evidence that Covid 19 pandemic has a significant impact on all health care services, including urology, but data is very scarce regarding its relation to operative urological emergency. The rationale of our study was to compare the numbers as well as any change of pattern in operative urological emergency in between pre-covid times and Peri-covid pandemic.

Material and Methods

This cross sectional comparative study was conducted in the urology department of the Medical Teaching Institute at Lady Reading hospital Peshawar. All pre-covid and peri-covid operative urological emergency procedures performed between July 18, 2019 and February 25, 2020 (pre-covid) and February 26, 2020 to September 25, 2020 (peri-covid). After obtaining a proper clearance certificate from the research and ethical committee of Lady Reading Hospital, the hospital's data and information software was thoroughly searched for all operative urological emergencies performed by a single consultant. Data was organized into two group's i.e. pre-covid and Peri-covid collected on specific Performa. All the pre-covid performed procedures were organized into Group A whereas Peri-Covid procedures were arranged into group B

Consecutive sampling was done. All patients from 15 to 70 years age who were operated as urological emergency by a single urologist were included in the study. Emergencies treated conservatively or elective procedures were excluded from the study. We analysed our data using SPSS version 20. Quantitative variables like age of the patients were presented as mean± standard deviation. Then "Independent student's "T test" was applied to compare means, whereas Chi square tests were used for qualitative data. The level of significance was set at <0.05.

Results

After a thorough search of the patient's online record, i.e., 06 months before covid data and 06 months pre-covid data. Total number of 73 patients having mean

age 38±14 were included in the study out of which 56 were male and 17 were female. Twenty six patients presented in the pre-covid time having 18 number of male and 08 female patients, mean age 36±13 years, by comparison 47 patients presented in the peri-covid time (38 male and 09 female) with the mean age of 40±14 years were operated. (Table I).

To test the hypothesis that patients presented in pre-covid times and peri-covid times were having statistically significant difference in their age independent sample t test was performed. The independent sample t test statistically insignificant $t(-1.169) = 71, p = 0.247$. Thus there was no significant association in between age of the patients with the timings of presentation whether pre-covid or peri-covid. Thirty six percent emergency cases were operated in the pre-covid times whereas 64% of patients were operated in the peri-covid times. Chi-square test of independence revealed no significant association in between number of emergencies and covid ($N=73$)= $15, p=0.109$. (Table I). Statistical difference was absent when the data of pre-covid and peri-covid was tested against gender type with p value ≥ 0.05 . When the pattern of urological emergency was observed there was no gross difference except obstructive uropathy (Table II).

Twenty seven percent of patients with obstructive uropathy were managed in the pre-covid time whereas 73% were dealt in the peri-covid timings but the rise in obstructive uropathy didn't touch the line of statistical significance $p=0.375$. (Table III).

	no of patients	Pre-covid	Peri-covid
	73	26	47
Age in yrs.	15-70	15-65	19-70
Mean age in yrs.	38±14	36±13	40±14
Male	56	18	38
Female	17	8	9

Sex		Emergency										Total	
		Fire-arm	Urogynae	RTA	Self-inflicted injury	Penile-fracture	Septicurologica conditionl	Catheter-injury	Obstructive uropathy	Torsion testicle	fall		Postop-haematuria
Male	Precovid	2		2	1	2	6	1	1	1	1	0	18
	Peri Covid	9		1	0	0	13	2	8	0	0	1	38
	Total	11		3	1	2	19	3	9	1	1	1	56
Female	Precovid	1	2				4				0		8
	Peri Covid	4	1				3				1		9
	Total	5	3				7				1		17
Total	Precovid	3	2	2	1	2	10	1	1	1	1	0	26
	Peri Covid	13	1	1	0	0	16	2	8	0	1	1	47
	Total	16	3	3	1	2	26	3	9	1	2	1	73

When the number of calls received from emergency unit, gynaecology or the emergencies directly presented in urology department in the peri-covid term were compared against the calls received in pre-covid term no statistically significant change was found when analysed by chi-square test($N=73$)= $2.628, p=0.486$. (Table IV).

Sex		Obstructive-Uropathy		Total
		Unilateral	Bilateral	
Male	Precovid	4	0	4
	Peri Covid	10	7	17
	Total	14	7	21
Female	Precovid	2	1	3
	Peri-Covid	2	0	2
	Total	4	1	5
Total	Precovid	6	1	7
	Peri-Covid	12	7	19
	Total	18	8	26

	Call				Total
	Emergency	Gynae	Other Units	Direct Presentation	
Pre-covid Count	7	2	0	17	26
Peri-covid Count	14	1	3	29	47
Total Count	21	3	3	46	73

Discussion

Covid-19 impact upon the burden of urological emergency seems to be non-significant. Although Covid-19 has turmoil impact upon all walks of life like economy of a common person in Pakistan as well as world-wide it has also shaken the social pillars of the globe but based upon our results we are able to predict to some extent that urology emergency numbers may remain the same and even if the change occurs in numbers it will be restricted to minor fluctuations rather than a significant rise or decline.^{15,16} The main reason

behind these observations seems to be the continuous coverage of the emergency urological services round the clock in MTI LRH under strict SOPs along with provision of services to covid affected patients by establishing the largest corona complex in the province of Khyber-Pakhtunkhwa Pakistan.

In a study by Medanelo et al the no significant difference was found in the mean age of patients presented in pre-covid and peri-covid times similar to our results. Their results also show no significant difference in clinical severity groups as we have also found that the types of operative urological emergency presented in two groups have no statistical difference. An analysis of data presented by Grasso et al also recognises no significant change in emergency urological operative procedures in Canada.¹⁸

In our study Septic urological condition was the commonest presentation followed by Fire-arm injury and obstructive uropathy respectively in the peri-covid timings in contrast to Stent repositioning and Uretero-renaloscopy for ureteric stones reported by Grasso et al.¹⁸

In contrast if we compare our data with tertiary care centre from Lombardy Italy there was a significant decrease in urological patient's presentation in emergency department but the drop in the number of emergency urological procedures were not statistically significant.¹⁹

In a multinational survey, a strong impact of Covid 19 was observed even in hospitals not entertaining covid positive patients and the reason behind was the delayed presentation of the patients in emergency and fear of the patients of contracting virus.²⁰

Reason behind unaffected emergency urological services in our setup are that fear of contracting virus in the mind of the patients was minimum, no hindrance was observed in the Ambulance services to critical patients, Moreover the planned allocation of the resources to Covid as well as emergency operative services has ensured quality services in emergency as it was before.

Covid is a reality now and we will have to live with it in a friendly way provided that proper SOPs are followed. The presentation of urological emergencies will be more or less same because the emergencies have no idea of covid and it will present as it was before Covid.

The short comings of our study are the limited data and the retrospective design but it open avenues for further research to see whether any significant statistical association exist between the covid and urological emergency.

Conclusion

Covid has no impact on the number and pattern of operative urological emergency.

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