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Relationship Covid-19 with Viral Cystitis

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Abstract: This study aims to know the symptoms on admission and the relationship between Viral Cystitis with CO-19 In this study, cystitis was reported to 55 patients with COVID-19, and demographic data and information were collected for patients from different hospitals in Iraq. In this study, samples were distributed to 30 male patients and 25 female patients with ages ranging from 55 to 80 years. Data collected routinely from different hospitals in Iraq. Were used to perform a retrospective study. We identified patients 55 years of age and older who tested positive for COVID-19 from MARCH 2020 to April 2021. The most common symptoms of persistent COVID-19 - which some patients have had for more than six months - are weakness. inability or inability to perform daily tasks; Fever. Respiratory disorders and loss of sense of smell and taste (anosmia and dysgeusia). The logistic analysis proved in the analysis of risk factors for patients (age 2.6 (1.4-3.9) < 0.001 p-values) in addition to comorbidities, which formed the largest percentage in this study 3.5 (1.6-7.8) with p-value < 0.001.

Keywords: Viral Cystitis, CO-19, comorbidities, renal, RNA, anosmia.

INTRODUCTION

The current global coronavirus 2019 (COVID-19) pandemic has had an unprecedented impact on humanity, with more than 100 million people confirmed to be infected so far, and there are likely to be millions of additional undiagnosed cases [Grayson, D.E. *et al*., 2002; Tzou, K.Y. *et al*., 2016].

Coronaviruses are a family of RNA viruses that commonly cause disease in other mammals [Yu, M. *et al*., 2017; Amy, C. *et al*., 2021].

Urinary manifestations of COVID-19 have been limited, and the coronavirus family, in general, has the potential to cause kidney disease and testicular dysfunction and has a low probability of detection in urine [Huang, J.J. *et al*., 2000; Dekeyzer, S. *et al*., 2018].

However, recent reports have indicated that COVID-19 may cause urinary symptoms ("COVID-19-associated cystitis") [Wang, Q. *et al*., 2018]. SARS-CoV-2 can bind to the angiotensin-converting enzyme 2 (ACE2) receptor in the urinary system and cause local inflammation. Small case series reported urine storage symptoms associated with COVID-19[Uhlman, M.A. *et al*., 2015] and correlated these findings with elevated urinary proinflammatory cytokines.

This has led to the hypothesis that, like COVID-19, it may lead to cognitive and medical symptoms and pulmonary, cardiac, and vascular fibrosis, a condition of chronic cystitis associated with COVID-19 with urine storage symptoms similar to overactive bladder. It may develop after the acute infection has cleared [Sharma, J. *et al*., 2020; Pringle, C. *et al*., 2020].

Another circumstance of concern for patients with urinary tract diseases is whether they are in the high-risk population. It is believed that people with some degree of kidney failure may be at greater risk [Fernandes, L.P. *et al*., 1998; Kashi, A.H. *et al*., 2020].

This virus affects more people who already have chronic diseases (lung, heart, and kidney disease), so patients with kidney failure may be more likely to develop Covid-19 and possibly more serious [Wu, C.T. *et al*., 2021].

Our goal was to determine whether patients diagnosed with COVID-19 had knowledge of the relationship Co-19 with Viral Cystitis [Mumm, J.N. *et al*., 2020].

MATERIAL AND METHODS

Patient Sample

In this study, cystitis was reported to 55 patients with COVID-19, and demographic data and information were collected for patients from different hospitals in Iraq. In this study, samples were distributed to 30 male patients and 25 female patients with ages ranging from 55 to 80 years.

Study Design

Fifty-five patients from different hospitals in Iraq. were included suffering from cystitis with confirmed infection with COVID-19. In the hospital, the main symptoms were reported, which

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included fever, chills, and increased urinary frequency.

Primary care is set up in cases that do not require hospitalization and are managed in the primary care setting; home isolation will be indicated provided effective isolation is ensured.

According to the recommendations of the Iraqi Ministry of Health and the CDC, the isolation will be maintained until three days have elapsed since the resolution of the fever and the clinical picture, for a period of at least ten days from the onset of symptoms and it will not be necessary to perform a polymerase chain reaction (PCR) examination to raise the isolation. Asymptomatic isolation continues until ten days have elapsed from the date of biopsy for diagnosis.

Cases requiring hospitalization during their stay in the hospital will be isolated following standard precautions, contact precautions, and droplet transmission precautions and will be managed according to global protocols.

Cases requiring hospitalization may be discharged if their clinical condition permits, even if PCR remains positive, but home isolation should be maintained with their clinical condition monitored for at least 14 days from hospital discharge.

If the last negative PCR reaction was present at the time of hospital discharge and no respiratory symptoms were present in the previous three days, the infection will be considered resolved, and the patient can be discharged without the need for isolation at home.

Study Period

Cooperated with the relevant committees to obtain licenses for this study to collect information and demographic data 0f Viral Cystitis patients with CO 19. from MARCH 2020 to 2021, April.

Aim of Research

This study aims to know the symptoms on admission and the relationship between Viral Cystitis with CO 19.

RESULTS

Table 1: Clinical, demographic results of Viral Cystitis patients with CO-19

Variable	Value
Age	
55-59	20
60-64	10
65-69	9
70-74	12
75-80	4
BMI	
25-28	12
29-32	30
33-35	13
comorbidities	
Hypertension	11
Diabetes	11
Renal failure	20
Others	13
Sex	
Male	30
Female	25

Table 2: Patients' lab results

Mean prostate volume, ml (range)	40±13
Mean residual urine, ml (mean sd)	25.5±10.9
osmolarity (mean sd)	580 (400–689)
creatinine, mg/dl(range)	1.1 (0.8–1.6)
procalcitonin, ng/mL	0.23 (0.1–0.4)
lactate dehydrogenase, U/l	360 (250–580)
neutrophils, %	77 (55–97)
lymphocytes, %	25 (9–40)

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Negative for leukocytes (N)	55
Microhematuria	45

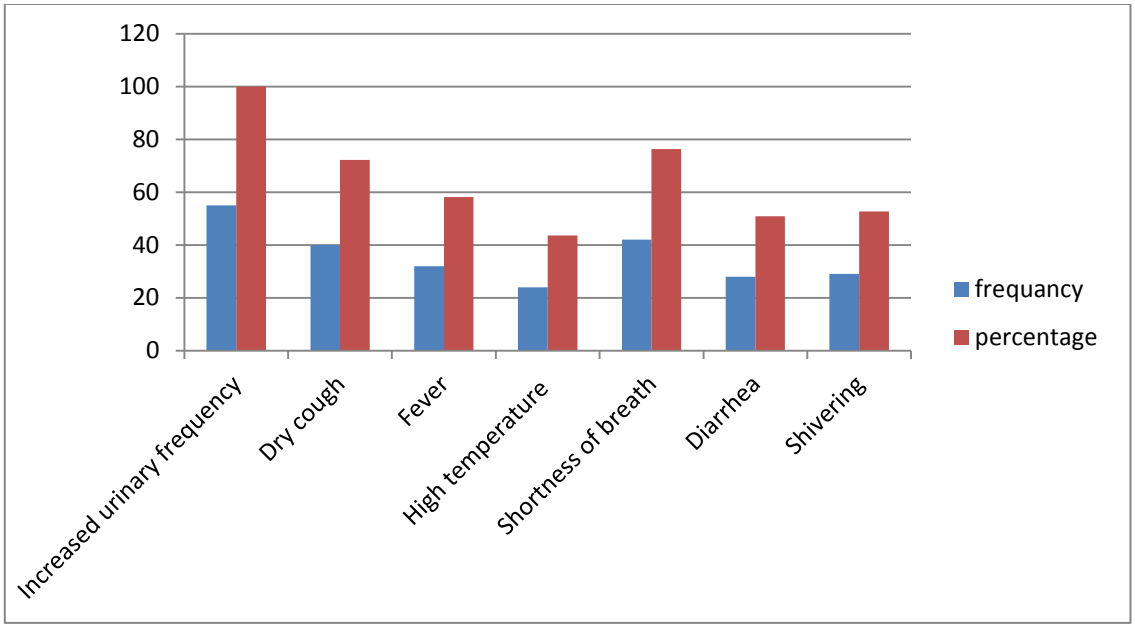

Fig 1: Outcomes of patients according to Symptoms on admission

Table 2: Primary outcomes for symptom & quality-of-life scores

Classification (*n*)	Symptom score (Median)	Range	QoL score (Median)	Range
Before COVID-19	7	4–9	9	8–10
After COVID-19*	19*	17–21*	20*	19–20*
Female	19	15–21	20	16–22
Male	19	12–20	20	16–22

Table 3: Logistic regression in the analysis of patient risk factors

Variable	CI-95%	P-value
Age	2.6 (1.4-3.9)	<0.001
Sex	0.8 (0.6-1.1)	0.76
comorbidities	3.5 (1.6-7.8)	<0.001
Negative for leukocytes	1.4 (0.9-1.8)	0.04
BMI	1.9 (1.4-2.9)	0.02

Table 4: final results of patient

Variable	Male (N=30)	Female (n=25)	P value
Severity of complications (%)	60%	55%	0.001
Admission to hospital	29	17	0.55
Intensive care	20	10	0.32
mortality	2	2	<0.000

DISCUSSION

In this study, 55 patients with ages ranging from 55 to 80 years were collected. The most common ages in this study were from 55-59 years for 20 patients, 70-74 years for 12 patients, and the least frequent ages in this study were from 75- 80 years for four patients, and a high body mass index was noted at ages over 65 years.

The prevalence of comorbidities in this study was for 55 patients (hypertension, diabetes, renal failure) in addition to other diseases, as shown in Table 1.

The most common symptoms of persistent COVID-19 - which some patients have had for more than six months - are weakness or extreme tiredness. inability or inability to perform daily tasks; Fever or low fever: respiratory disorders and loss of sense of smell and taste (anosmia and dysgeusia).

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However, many symptoms have been described as parts of the body: nervous (such as headache), digestive, cardiac, respiratory, urinary, and psychiatric disorders [Wolff, D. *et al*., 2021].

It is believed that people with a certain degree of kidney failure may be more at risk of infection; this virus affects more people who already have chronic diseases (lung, heart, kidney disease) [Chancellor, M.B. *et al*., 2021], so patients with kidney failure may be more likely to get sick with Covid-19 and possibly more serious. In addition, a patient with kidney failure has a certain degree of immunodeficiency, which increases the risk of developing any type of infection [Lamb, L.E. *et al*., 2020; Naspro, R. *et al*., 2020; Somani, B.K. *et al*., 2020].

Acute renal failure (ARF) in COVID-19 occurs in 5-15% of cases and is associated with a higher mortality rate. According to a group of researchers led by Y. Cheng, among 710 patients hospitalized with MERS-CoV infection, an increase in serum creatinine levels was observed in 15.5% of patients [Ramaswamy, A. *et al*., 2020; Boehm, K. *et al*., 2020].

With the spread of the COVID-19 pandemic worldwide, gender differences in the course of the disease have emerged. Men are more susceptible to COVID-19 infection than women. It has been suggested that estrogen may have a protective effect against COVID-19 in women and / Or that androgen effects increase COVID-19 outcomes in men [Katz, E.G. *et al*., 2020].

In the Veneto region (Italy), 44% of men and 56% of women have contracted the COVID-19 virus. At the same time, men, compared to women, had more serious complications, were more likely to be hospitalized (60% versus 40%), more likely to need intensive care (78% versus 22%), and had a worse clinical outcome: mortality 68% and 38%, respectively. Meanwhile, Italian researchers found that prostate cancer (PCa) patients in an androgen-deprived state were less likely to develop COVID-19 and died less from the disease than other groups of men, including other patients with PCa.

CONCLUSION

Clinical manifestations of COVID-19 are predominantly symptoms of respiratory damage, but special attention should be paid to cystitis - this, among other things, has proven prognostic value and helps to correctly assess the severity of the patient.

Patients with CKD are at increased risk of severe infection, and acute renal insufficiency is associated with higher mortality.

Thus, monitoring of renal function in patients with severe COVID-19 is essential, and emergency measures may be necessary to protect renal function and control cytokine storm in Viral Cystitis patients.

RECOMMENDATION

Monitoring renal function in patients with COVID-19 and cystitis due to the high risk of mortality

REFERENCES

1. Grayson, D.E., Abbott, R.M. and Levy, A.D., *et al*. "Emphysematous infections of the abdomen and pelvis: a pictorial review." *Radiographics* 22.3 (2002): 543-561.
2. Tzou, K.Y., Chiang, Y.T. and Cystitis, E. "Emphysematous cystitis." *New England Journal of Medicine* 375.18 (2016): 1779-1779.
3. Yu, M., Robinson, K., Siegel, C. and Menias, C. "Complicated genitourinary tract infections and mimics." *Current Problems in Diagnostic Radiology* 46.1 (2017): 74-83.
4. Amy, C., Weintrob, D.J.S., Stephen, B. and Calderwood, M, eds. "Emphysematous urinary tract infections." *Waltham, MA: Wolters Kluwer* (2021).
5. Huang, J.J. and Tseng, C.C. "Emphysematous pyelonephritis: clinicoradiological classification, management, prognosis, and pathogenesis." *Archives of internal medicine* 160.6 (2000): 797-805.
6. Dekeyzer, S. and Houthoofd, B. "Emphysematous cystitis." *Journal of the Belgian Society of Radiology* 102.1 (2018):66.
7. Wang, Q., Sun, M. and Ma, C., *et al*. "Emphysematous pyelonephritis and cystitis in a patient with uremia and anuria: A case report and literature review." *Medicine* 97.45 (2018): e11272.
8. Uhlman, M.A., Andresen, E.D. and Storm, D.W. "Pediatric emphysematous cystitis: a report and review of a rare diagnosis in children." *The Canadian Journal of Urology* 22.4 (2015): 7924-7926.
9. Sharma, J. and Singhal, J. "A child with urosepsis and a bladder with a halo: answers." *Pediatric Nephrology* 35.1 (2020): 75-76.
10. Pringle, C. and Brothers, E. "Emphysematous cystitis following bone marrow transplant."

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Journal of Pediatric Hematology/Oncology 43.5 (2021): 193-194.
11. Fernandes, L.P., Sajwany, M.J. and Derweesh, A. "Emphysematous pyelonephritis and cystitis associated with bilateral pelviureteric junction obstruction: a case report." *Journal of pediatric surgery* 33.5 (1998): 739-740.
12. Kashi, A.H., De la Rosette, J. and Amini, E., *et al*. "Urinary viral shedding of COVID-19 and its clinical associations: a systematic review and meta-analysis of observational studies." *Urol J* 17 (2020): 433–41.
13. Wu, C.T., Lidsky, P.V. and Xiao, Y., *et al*. "SARS-CoV-2 infects human pancreatic β cells and elicits β cell impairment." *Cell metabolism* 33.8 (2021): 1565-1576.
14. Mumm, J.N., Osterman, A. and Ruzicka, M., *et al*. "Urinary frequency as a possibly overlooked symptom in COVID-19 patients: does SARS-CoV-2 cause viral cystitis?." *European urology* 78.4 (2020): 624-628.
15. Wolff, D., Nee, S., Hickey, N.S. and Marschollek, M. "Risk factors for Covid-19 severity and fatality: a structured literature review." *Infection* 49.1 (2021): 15-28.
16. Chancellor, M.B., Wills, M. and Timar, R., *et al*. "COVID-19 associated cystitis (CAC): increased urinary symptoms and biomarkers of inflammation in urine in patients with acute COVID-19." Presented at: AUA2021 Virtual Experience held September (2021):10-13. Poster MP29-15 (2021).
17. Lamb, L.E., Dhar, N., Timar, R., Wills, M., Dhar, S. and Chancellor, M.B. "COVID-19 inflammation results in urine cytokine elevation and causes COVID-19 associated cystitis (CAC)." *Medical hypotheses* 145 (2020): 110375.
18. Naspro, R. and Da Pozzo, L.F. "Urology in the time of corona." *Nature Reviews Urology* 17.5 (2020): 251-253.
19. Somani, B.K., Pietropaolo, A., Coulter, P. and Smith, J. "Delivery of urological services (telemedicine and urgent surgery) during COVID-19 lockdown: experience and lessons learnt from a university hospital in United Kingdom." *Scottish Medical Journal* 65.4 (2020): 109-111.
20. Ramaswamy, A., Yu, M., Drangsholt, S. "Patient satisfaction with telemedicine during the COVID-19 pandemic: retrospective cohort study." *Journal of medical Internet research* 22.9 (2020): e20786.
21. Boehm, K., Ziewers, S. and Brandt, M.P., *et al*. "Telemedicine online visits in urology during the COVID-19 pandemic—potential, risk factors, and patients' perspective." *European urology* 78.1 (2020): 16-20.
22. Katz, E.G., Stensland, K.D. and Mandeville, J.A., *et al*. "Triaging office-based urology procedures during the COVID-19 pandemic." *J Urol* 204 (2020): 9–10.

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