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Research Article

An Overview of Preliminary COVID-19 Cases Admitted in Rawalpindi Institute of Urology & Transplantation Pakistan

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Abstract

Objectives: To determine the source of infection, comorbidity and health outcome of COVID-19 patients admitted in Rawalpindi Institute of Urology & Transplantation (RIU & T) Pakistan.

Methods: A cross sectional descriptive study was carried out among 106 Polymerase Chain Reaction (PCR) confirmed COVID-19 cases admitted at Rawalpindi Institute of Urology & Transplantation from 20th March-13th April 2020. These patients were enrolled in research through consecutive sampling. The data was gathered pertinent to demographics, symptoms, source of infection, comorbidity and health outcome of the COVID-19 patients. The data was analyzed by means of SPSS version 25.0.

Results: Of the total 106 COVID-19 cases, 74(69.8%) were males and 32(30.2%) were females. Mean age of COVID-19 patients was 45.24±18.63 years. About 73(69%) had contact history with their close family members while 31(29.2%) had travel history. About 35(33.02%) had persistent dry cough, 31(29.24%) had high grade fever 16(15.1%) had shortness of breath and 21(19.8%) complained of sore throat. Time period between positive PCR diagnostic report and negative PCR report was determined to be 11.5±1.32 days. Most 22(71%) had one comorbidity and hypertension was most prevalent among our patients followed by diabetes, renal, hepatic and cardiovascular diseases. Comorbidity showed statistically significant association (P<0.01) with critical illness among COVID-19 patients. Hydroxychloroquine and Azithromycin were given to all the patients.

Conclusion: Most of the COVID-19 patients were infected by close contacts who returned from abroad. All COVID-19 patients were alive. Older hypertensive males being more at risk of coronavirus infection should strictly seek precautionary measures.

Keywords: COVID-19; Source of Infection; Comorbidity; Polymerase Chain Reaction; Hypertension

Introduction

Corona virus disease is an infectious disease that is attributed to SARS-CoV-2 which belongs to corona virus family. This disease was declared as global health emergency by World Health Organization on 30th January 2020 following confrontation of unprecedented challenges by the population of China [1]. This disease is directly transmitted through droplets and contact with infected persons while touching contaminated fomites facilitates its indirect spread [2]. COVID-19 cases are either found to be symptomatic or suffering from mild clinical symptoms [3]. However, some of them present with acute lung injury and Acute Respiratory Distress Syndrome (ARDS) that ultimately leads to respiratory failure and expiry [4]. Elderly population and individuals with co-morbidities like cardiovascular disorders and diabetes are highly vulnerable to corona virus disease with grave consequences [5]. People with clinical as well as sub-clinical corona virus infections are amenable to transmit disease to others, so the suspects should primarily be screened followed by hospitalization on disease confirmation [6]. COVID-19 sprouted from Wuhan (China), depicted exponential growth and crossed borders with marked emergence of cases in numerous countries [7]. COVID-19 pandemic appeared in Pakistan during February 2020 that was attributed to returners from Iran [8]. Till then emergence of SAR CoV-2 massively worldwide has

compelled everybody to think about its spread in mass gatherings. This perspective enabled administrative and managerial authorities of most of the countries to declare cessation and cancellation of all national and international religious congregations, sporting and matrimonial events to limit the blowout of COVID-19 [9].

Since detection of first COVID-19 case in Pakistan, diverse arms of federal, provincial and district governments have joined together to mitigate the disastrous effects of COVID-19 through lockdown for social distancing in addition to application of isolation of super-spreaders and keeping suspects in quarantine [10] because of non-availability of vaccine against SAR CoV-2 and lack of efficacious drugs [11]. Our health professionals being frontline fighters are also leading the battle against COVID-19 courageously despite of scarce resources [12]. Rooting out the clinical presentations in association with co-morbidities and transmissibility of corona virus infection among affected population will be very informative to cope up with this havoc timely and efficiently. The present research is therefore carried out to appraise the severity and health outcome of confirmed COVID-19 cases admitted in Rawalpindi Institute of Urology & Transplantation (RIU & T) in connotation with comorbidities and infective sources so as to ensure the placement of appropriate preventive and managerial measures to minimize the rapid spread of this contagious disease.

Subjects & Methods

A cross-sectional descriptive research was carried out among primary COVID-19 cases admitted in Rawalpindi Institute of Urology & Transplantation from 20th March-13th April 2020. Total 106 cases were enrolled in this study through consecutive sampling. The data was gathered pertinent to their demographics, travel and contact history, clinical presentations and comorbidity after getting informed consent from hospital administration. The data was analyzed by using SPSS version 25.0.

Results

Of the total 106 COVID-19 cases admitted in Rawalpindi Institute of Urology and Transplantation, 74(69.8%) were males and 32(30.2%) were females. Mean age of COVID-19 patients was 45.24±18.63 years. Trend of COVID-19 cases from 20th March-13th April 2020 is shown in Figure 1. Majority of the infected males were in 51-60 years age group while most of the females were 21-30 years of age as depicted below in Figure 2. All COVID-19 cases with positive PCR report were admitted in RIU & T with immediate effect. Of the total 106 cases, 73(69%) had contact history with their close family relatives who recently returned from other country or city and was confirmed COVID-19 cases. About 29(27.3%) patients travelled internationally, 2(1.9%) travelled nationally while 2(1.9%) had history of participation in religious congregations. Approximately 99.6% patients were residents of District Rawalpindi with highest frequency of patients residing in Gujar Khan as shown below in Table 1.

Table 1: Residence of COVID-19 cases at RIU.

Sr. No.	Areas	No. of COVID-19 patients
1.	Gujar Khan	19 (17.92%)
2.	Dhoke Kashmirian	08 (7.56%)
3.	Satellite Town	08 (7.56%)
4.	Dhoke Paracha	05 (4.72%)

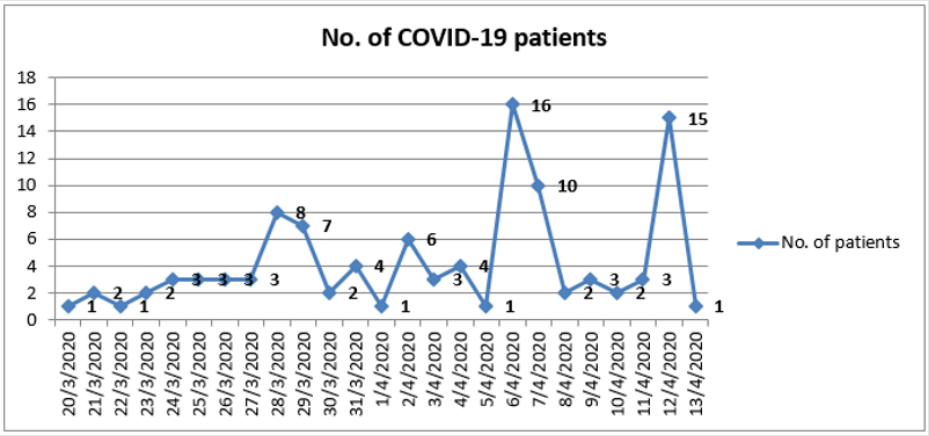

Figure 1: Trend of COVID-19 cases at RIU & T.

About 31(29.24%) out of 106 had comorbid states that included diabetes, hypertension, Ischemic Heart Disease, renal problems, asthma and hepatitis C. Comorbidity of COVID-19 cases is categorized as follows Figure 3. Of the total 106 patients enrolled in this study, 35(33.02%) had persistent dry cough, 16(15.1%) had shortness of breath, 21(19.8%) had sore throat and 17(16.04%) complained of general weakness. About 31(29.24%) had high grade fever and mean duration of fever was 5.03±3.2 days. Hydroxychloroquine and Azithromycin were given to all the patients. Approximately 50 patients were asymptomatic despite of positive PCR report as given below in Table 2. The duration between positive PCR diagnostic report and negative PCR report

was determined to be 11.5±1.32 days. Health outcome of our patients is depicted below in Figure 4. Health outcome of COVID-19 patients seemed to have significant association (P<0.01) with their co-morbidity as depicted below in Table 3.

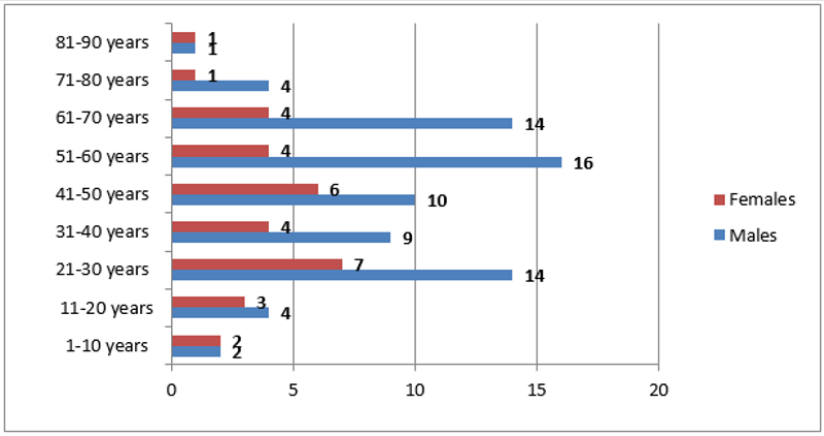

Figure 2: Confirmed COVID-19 cases in RIU & T by age and gender (n=106).

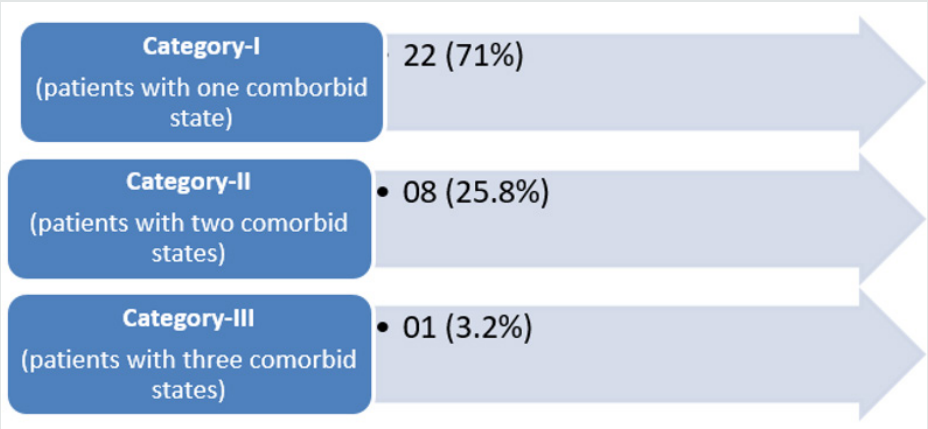

Figure 3: Categorization of COVID-19 patients based on co-morbidity (n=31).

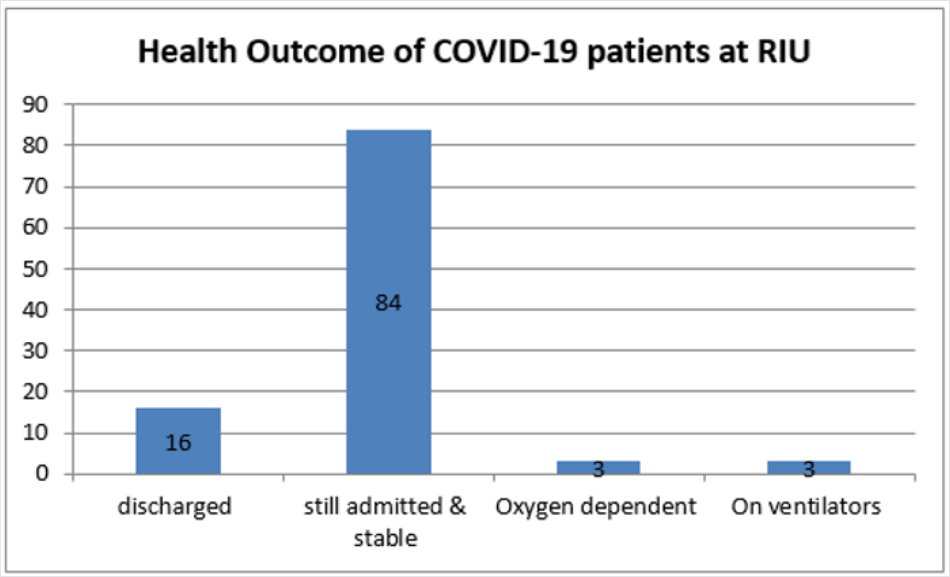

Figure 4: Health Outcome of COVID-19 cases at RIU.

Table 2: Category-wise Symptoms of COVID-19 cases (n=106).

Categories	Symptoms	Frequency (%)
Category-I	Asymptomatic	50 (47.17%)
Category-II	Mild symptoms	40 (37.73%)
Category-III	Severe symptoms	16 (15.1%)
Sub-categorization of Category-III patients (n=16)		
Category-IIIa	Dyspnea without oxygen	10 (62.5%)
Category-IIIb	Dyspnea treated with oxygen	03 (18.75%)
Category-IIIc	Dyspnea treated with ventilation	03 (18.75%)

Table 3: Association of health outcome among COVID-19 cases with co-morbditiy (n=90).

Co-morbidity	Health outcome of COVID-19 patients		Total
	Critical	Stable	
Yes	4	14	18
No	2	70	72
Total	6	84	90
X^2=8.74		P<0.01	

Discussion

COVID-19 pandemic has drastically affected the nations all over the world [13]. Coronavirus is known to enter the human body through respiratory tract or conjunctiva [14]. Because of varied differential diagnosis and contagiousness of disease, determining travel history and contact tracing of suspects is of paramount significance for real representation of this problem [15]. In current study, majority (19.8%) COVID-19 cases were in 21-30 years age group with males constituting highest frequency among them. Like our research, mainstream of South Korean population suffered from COVID-19 was comprised of 20-29 years age group with males constituting highest proportion of cases [16]. Contrary to this a research on Indian people revealed highest propensity of COVID-19 cases in 31-40 years age group [17]. On reviewing the COVID-19 cases reported from New York City of America, it became evident that males above 75 years old were more susceptible to coronavirus infection [18].

Likewise, our results, international research are also revealing more susceptibility of males towards COVID-19 as compared to females. Researchers have observed sex differences in every tissue and organ system of human body pertinent to coronavirus infection [19]. More infection vulnerability of males as compared to females might be due to more outdoor chores of males. However, this gender discrimination with respect to coronavirus infection is still under discussion and many trials are still to be undertaken to reach the conclusion.

In current study, the duration between onset of symptoms and diagnosis of coronavirus infection ranged from 0-19 days with median of 5 days. Most patients (33%) had persistent dry cough and 29.2% had fever on disease onset. Other symptoms were sore throat (19.8%), general weakness (16%) followed by shortness of breath (15.1%). Similarly, a Chinese research revealed time of up to 23 days (median=6 days) between appearance of symptoms and confirmation of coronavirus infection. About 65.8% patients had fever and 48.1% patients had cough followed by sore throat, headache, chills and diarrhea [20]. Another research by [21] revealed that fever, cough and myalgia are the commonest symptoms followed by abdominal pain, nausea and diarrhea [21]. This similarity in configuration of symptoms worldwide can be of great help in early detection and prompt treatment of cases.

The present study revealed statistically significant association (P<0.01) of comorbidity with critical state of COVID-19 patients although none of the enrolled patients succumbed to death. The comorbidity prevailing among our patients was predominantly hypertension followed by diabetes asthma and cardiovascular disorders. Like our study, a research on COVID-19 patients at China depicted hypertension as the commonest comorbidity followed by diabetes [22]. A similar research on COVID-19 New York citizens represented hypertension as the most frequent comorbidity followed by obesity and diabetes [23]. However, like current study results, other comorbidities in COVID-19 patients of China and New York City were renal, hepatic, cardiovascular and respiratory disorders. Moreover, aged male population specifically suffering from hypertension should adopt preventive measures more stringently as they are found to be more vulnerable to coronavirus infection.

Conclusion

COVID-19 cases in Pakistan predominantly attribute to contact with infected people. So preventive measures against corona virus infection should rigorously be adopted by our population to get rid of this havoc. Older males mainly suffering from hypertension should specifically be protected in this context.

Conflict of Interest

None.

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