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

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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].

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

| Categories | Symptoms       | Frequency (%) |
|------------|----------------|---------------|
|            | Asymptomatic   | 14 (15.1%)    |
| Category-II|Mild symptoms  | 40 (37.7%)    |
| Category-III|Severe symptoms| 16 (15.1%)    |

**Sub-categorization of Category-III patients (n=16)**

| Sub-category | Symptoms            | Frequency (%) |
|--------------|---------------------|---------------|
| 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-morbidity (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 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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