Incidence And Clinical Characteristics of The Novel Coronavirus Disease (Covid-19) In District Swat

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ABSTRACT

Background: Coronavirus disease 2019 (COVID-19) is a disease caused by a novel coronavirus now called SARS-CoV-2; formerly called 2019-nCoV, which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. Covid-19 is often associated with some complications i.e. cough, fever, myalgia and with some complications like acute respiratory failure, pneumonia and acute respiratory distress syndrome. RT-PCR is an effective method for the diagnosis of Covid-19, the disease is associated with lung injury and need medical attention.

Objective: The current study was conducted to estimate COVID-19 prevalence and clinical characteristics in district Swat Khyber Pakhtunkhwa, Pakistan.

Methods and Materials: The study was conducted by collecting information such as gender, age, and demography of patients from molecular PCR lab SGTH (Saidu group of teaching hospital) from May 14 to May 17, 2020.

Results: In this study total 400 patients data were collected of which 36 (72%) males and 14 (28%) females were confirmed COVID-19 positive, out of confirmed positive 9 (81.8%) were having severe symptoms in males and 2 (18.2%) female. During this study, the highest COVID-19 patient was recorded from SGTH and the mean age of patients was 41.8 ± 8.52 (SD) and the highest prevalence was in the age groups of 40-49 and the lowest prevalence was recorded in 20-29 age group in which 32 (64%) patients have contact with confirmed COVID-19 cases, 8 (14%) have no any contact history and 10 (22%) have unknown history.

Conclusion: In this study, the overall prevalence of COVID-19 was 12.5%. The most common symptoms of illness onset were fever (78.0%), cough (62.0%), sore throat (70.0%) and flu (18.0%).

Keywords: SARS-CoV-2; Covid-19; Pandemic; Real-time Polymerase chain reaction

INTRODUCTION

In December 2019, in Wuhan city of China unknown new pneumonia cases reported where the fear of health authorities was attracted. On December 31, 2019, the center for disease control and prevention in China sent a quick response team to Wuhan. The possible causes were think one after another containing SARS-CoV, MERS-CoV, Adenovirus, Influenza. Epidemiologists and investigator told that the south China seafood market in Wuhan was related to this infectious disease. On January 1st, 2020 the authorities of the Wuhan government sealed the seafood market, sterilized and disinfected the marketplace. They also started search and emergency management of the cases. On January 3, the Chinese government notified WHO about this epidemic. The relevant cause was recognized as a novel coronavirus (2019-nCoV), also known as SARS-CoV-2 on January 7, 2020. After that, the novel coronavirus gene sequence was analyzed and detection methods were developed. The WHO named the disease COVID-19. Although the 2019-nCoV correlates with SARS-CoV and MERS-CoV, the 2019-nCoV gene sequence is completely changed. Early cases show that it may not be as severe as SARS CoV and MERS-CoV but, the quick increase in occurrence and the increasing sign of social transmission show that the novel virus is very dangerous than SARS-CoV and MERS-CoV. In Pakistan uptill now total 324077 confirmed positive cases have been identified, 9384 active cases, 6673 deaths and 308,020 recoveries. In these total cases there are 38708 confirmed positive cases, 426 active cases, 1265 deaths and 37,017 recoveries in KPK, the recent statistics released by Ministry of health. In this study, we find the prevalence and clinical characteristics of the novel coronavirus (SARS-CoV-2) confirmed cases in district Swat. Also the proportion and comparison of the characteristic between common and severe cases of COVID-19. Common cases may be Symptomatic or Asymptomatic. Symptomatic cases were well-defined as positive confirmed cases with fever, sore throat, and cough, while asymptomatic cases were defined as positive confirmed cases with minor fever and flu symptoms. Severe cases of COVID-19 patients syptoms were define as Positive confirmed cases with common symptoms like fever, cough and sore throat but the most severe syptoms these patients have are shortness of breath and Diarrhea.
MATERIALS AND METHODS

Data Collection
Data were collected from the molecular PCR lab at SGTH Swat from 14 to 17 May, 2020 with all positive and negative cases. The data was obtained after written permission from Incharge Public health Lab and hospital administration.

Study Design
Patients were selected from May 14 to May 17, 2020, at Saidu group of teaching hospitals in Swat, KP, Pakistan. It described the characteristics of all SARS-CoV-2 cases reported in Swat. It was a cross-sectional study and referenced. Data was extracted from the case reported system and removed the personally identifiable information of all cases during the analysis to protect personal privacy.

Data Sources
All cases were reported immediately through the disease information system. The information of all cases were entered into the data system of the local hospital and disease control and prevention system, they were investigated and collect possible exposure of information. The cases were collected from reported information system and hide all personally identifiable information to form a separate data set for analysis. All cases were included in this study, so there was no need of a predetermined sample size or considering the case inclusion criteria.

Variable Information

Definition
A suspected case a SARS-CoV-2 was tested for the SARS-CoV-2 taking swab from the throat (oropharyngeal) and nose (nasopharyngeal) and the result of positive patients is shown on the RT-PCR, while the suspected cases both have both the following conditions: like symptoms cough, fever, shortness of breath and diarrhea were considered as severe cases and fever, flu, sore throat as common cases and having contact with the positive case. All these cases are reported from 7 different regions and Health facilities in Swat i.e Saidu group of teaching hospital (SGTH), Civil hospital Barikot (CH Barikot), district health officer Swat (DHO swat), Nawaz Sharif kidney hospital (NSKH), THQ khwazakhela, THQ Matta and THQ Kabal. The exclusion criteria was that those cases positive for covid-19 on RT-PCR and without any symptoms were excluded.

Statistical analysis
Confirmed cases were used in descriptive statistical and clinical characteristics of the cases. The crude mortality rate was the number of confirmed cases (numerator) divided by the total positive number of confirmed cases (denominator) listed as a percentage. The data was examined in SPSS Version 25, after moving the data on the MS Excel sheet to make simple tabulation. To examine the association between any two selected variables of the study and make a appropriate graph for demography

RESULTS
The results showed that (Table 3.1) 400 patients diagnosed from May 14 to May 17, 2020. Out of these 50 (12.5%) patients were confirmed SARS-CoV-2 positive. In 400 tested patients, most of the confirmed positive patients were from SGTH 18 (36.0%). Second most confirmed positive patients were identified in DHO swat 15 (30.0%).

Table 3.1: Common and severe cases of COVID-19 cases in Swat from 7 different Regions

| Facility       | All cases | Severe cases | Common cases |
|----------------|-----------|--------------|--------------|
| SGTH SWAT      | 18 (36.0%)| 5 (45.5%)    | 13 (33.3%)   |
| DHO SWAT       | 15 (30.0%)| 2 (18.2%)    | 13 (33.3%)   |
| THQ MATTI      | 6 (12.0%) | 2 (18.2%)    | 4 (10.3%)    |
| CH BARIKOT     | 2 (4.0%)  | 1 (9.1%)     | 1 (2.6%)     |
| NSKH SWAT      | 7 (14.0%) | 1 (9.1%)     | 6 (15.4%)    |
| THQ KHWAZKHEL  | 1 (2.0%)  | 0 (0.0%)     | 1 (2.6%)     |
| THQ KABAL      | 1 (2.0%)  | 0 (0.0%)     | 1 (2.6%)     |
| Total          | 50        | 11           | 39           |

Figure 3.1: COVID-19 cases in Swat from 7 different Regions. SGTH 15 (36.0%), DHO 15 (30.0%), THQ Matta 6 (12.0%), CH Barikot 2 (4.0%), NSKH 7 (14.0%), THQ Khwazakhela 1 (2.0%), THQ Kabal 1 (2.0%).
Comparison between Common and Severs Cases of COVID-19

These 50 patients were categorized into two groups respectively, severe and common group. In this two group of patients 39 (78.0%) were common and 11 (22.0%) were severe cases. The severe patients have two major symptoms Shortness of breath and Diarrhea or some patients were both, the common group included 39 (78.0%). Some were symptomatic while some were asymptomatic positive cases. Symptomatic were 31 (79.5%) and asymptomatic were 8 (20.5%). The most common symptoms of illness onset were fever (78.0%), cough (62.0%), sore throat (70.0%) and flu (18.0%).

DISCUSSION

COVID-19 is a pandemic that spread worldwide and is responsible for lung disease. Infected people with a wide collection of symptoms are stated ranging from common to severe symptoms. Symptoms are shown in between 2-14 days after contact with the SARS-CoV-2. Most symptoms include cough, fever and sore throat. Recently the COVID-19 infection is spread in Swat, Pakistan, but the proportion of common cases versus severe cases of SARS-CoV-2 infection clear symptoms is still unidentified that hampers realistic calculation of the virus epidemic potential and complicates the outbreak response. Based on this study, first it is provided the proportion of common versus severe cases of the SARS-CoV-2 infection symptoms which was nearly 39:11, including 42 (84.0%) symptomatic cases and 8 (16.0%) asymptomatic cases respectively. Incidence will vary if isolation and Quarantine ensure and avoid gathering in this pandemic because 32(64.0%) had close contact with confirmed cases, as mentioned in the medical report sheets. Therefore, person-to-person contact is the main reason for transmission of SARS-CoV-2. According to the investigation, the transmission of SARS-CoV-2 is poorly understand. How a virus can spread from one person to another and lack of knowledge not following the WHO guidelines. It was observed that many people in swat they don't wear a mask and shake hand with each other and did not follow the social distancing.

The majority of the patient were young adults (20.0%). There was a sufficient difference and can effect both male and female in this study. The patients were all the residents of Swat and data was collected from seven different hospitals. The most common symptoms of illness onset were fever, sore throat and cough, severe cases with shortness of breath, and diarrhea. Among the other provinces and cities with positive confirmed cases of COVID-19, the ranking of swat has fallen over more rapidly than other districts. Therefore, swat was effective in controlling and preventing the COVID-19 pandemic, it was because of correct lockdown time, ban on the transport and tourist from other provinces and cities and mass awareness of the people of swat about the virus.
CONCLUSIONS
The overall prevalence of COVID-19 was 12.5%. In this study, the COVID-19 is more prevalent in district Swat. Most of the COVID-19 cases were mild in severity and more than 50% with identified epidemiological exposure. In the study, a highly related risk factor of COVID-19 was observed due to lack of knowledge, low financial status, poor hygiene, poor proficiency, not maintaining social distances, not properly washing hands and not avoiding handshake are the major cause of illness. Most COVID-19 confirmed cases have common symptoms in swat. The next steps in controlling and preventing the SARS-CoV-2 infection may be controlled in the early stages by isolation of patients in early stages and quarantine of the exposed individual to avoid the spread of disease.

REFERENCES
1. Pneumonia of unknown cause China.
2. Wang C, Horby PW, Hayden FG, Gao GF: A novel coronavirus outbreak of global health concern. Lancet 2020, 395(10223):470-473.
3. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, Zhao X, Huang B, Shi W, Lu RJNEJoM: Anovel coronavirus from patients with pneumonia in China, 2019. 2020.
4. Hui DS, Azhar EI, Madani TA, Ntoumi F, Kock R, Dar O, Ippolito G, Mchugh TD, Memish ZA, Drost CJJoID: The continuing 2019-nCoV epidemic threat of novel coronaviruses to global healthThe latest 2019 novel coronavirus outbreak in Wuhan, China. 2020, 91:264-266.
5. Chan JF-W, Kok K-H, Zhu Z, Chu H, To KK-W, Yuan S, Yuen K-YJEm, infections: Genomic characterization of the 2019 novel human-pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan. 2020, 9(1):221-236.
6. Tan W, Zhao X, Ma X, Wang W, Niu P, Xu W, Gao GF, Wu G. 2020, $2(4):61-62$.
7. Paules CI, Marston HD, Fauci ASJ: Coronavirus infectionsmore than just the common cold. 2020, 323(8):707-708.
8. Munster VJ, Koopmans M, van Doremalen N, van Riel D, de Wit EJNEJoM: A novel coronavirus emerging in China: key questions for impact assessment. 2020, 382(8):692-694.
9. Chan JF-W, Yuan S, Kok K-H, To KK-W, Chu H, Yang J, Xing F, Liu J, Yip CC-Y, Poon RW-SJTL: A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. 2020, 395(10223):514-523.

DATA SHARING STATEMENT: The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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AUTHOR'S CONTRIBUTION
Following authors have made substantial contributions to the manuscript as under

Shah SM, Lal A: Concept and design of study, Collection of data, statistical analysis
Ali I: Writing of manuscript, critical review of manuscript
Amin S: Analysis and interpretation of data, statistical analysis
Imran T, Khan A: Data collection, bibliography

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.