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Epidemiology and Clinical Course of Asymptomatic COVID-19 Infection

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Abstract **Original Research Article**

Background: Comprehensive studies on transmission from asymptomatic patients are difficult to conduct, as they require testing of large population cohorts and more data are needed to better understand and quantified the transmissibility of SARS-CoV-2. WHO is working with countries around the world, and global researchers, to gain better evidence based understanding of the disease as a whole, including the role of asymptomatic patients in the transmission of the virus. An asymptomatic laboratory confirmed case is a person infected with COVID-19 who does not develop symptoms. Asymptomatic transmission refers to transmission of the virus from a person, who does not develop symptoms. The virus can cause a range of symptoms mild illness to pneumonia. Symptoms of the disease are cough, fever, sore throat, rhinorrhoea, loss of smell, loss of taste, diarrohea, headaches and others. ***Aim of the study****:* The study aim was to assess the epidemiology and clinical course of asymptomatic COVID-19 infection in patient. ***Materials and methods:*** This prospective observational study was conducted in the Department of Medicine, 250 Beded District Sadar Hospital, Sunamgonj, Bangladesh during the period from June 2020 to August 2020. Eighty two (82) patients diagnosed with asymptomatic COVID-19 infection were included in this study as the study population. Collected data were entered in a predesigned case report form and subsequently analyzed by SPSS 22. ***Results:*** The total study population was 82 patients, 61 (74.39%) were males and 21 (25.61%) were females. Table I demonstrated the Sex distribution of the study population.Clinical course of asymptomatic COVID-19 infection in patient. (n=82). The Figure I shows of Symptoms following RT-PCR become positive among the study population 51(62.19%) patients had Cough develop after ± 3days (mean duration), 30(36.58%) patients had Fever developed after ± 6days (mean duration), 23(28.04%) patients had Sore Throat developed after ± 3days (mean duration), 7(8.54%) patients had Rhinorrhoea developed after ± 3days (mean duration), 5(6.09%) patients had Loss of Smell develop after ± 3days (mean duration), 14(17.07%) patients had Loss of Taste develop after ± 6days (mean duration), 3(3.65%) patients had Diarrohoea develop after ± 6days (mean duration). Study People had Discharge with good recovery, 80(97.56%) patients had Discharge with good recovery RT-PCR 2nd Sample Result, and 2 (2.44%) patients had Discharge with good recovery RT-PCR. All the path was recovered well, 80(97.56%) found RT-PCR negative from 2nd sample and patients found RT-PCR negative on 3rd sample. ***Conclusions****:* Asymptomatic and symptomatic COVID-19 both patients can be appropriately quarantined, community and family clustered transmission may be hugely reduced. But in patients who were asymptomatic COVID-19, no big events were detected during the two-month observation. Contact tracing and testing of the suspected case could be another strategy for preventing and controlling the disease.

Keywords: Asymptomatic, COVID-19, Pandemic.

INTRODUCTION

In December 2019, Coronavirus disease 2019 (COVID-19) flowed in Wuhan, China, and subsequently spread outside China [3]. Comprehensive studies on transmission from asymptomatic patients are difficult to conduct, as they require testing of large population cohorts and more data are needed to better understand and quantified the transmissibility of SARS-CoV-2. WHO is working with countries around the world, and global researchers, to gain better evidence based understanding of the disease as a whole, including the role of asymptomatic patients in the

transmission of the virus. An asymptomatic laboratory confirmed case is a person infected with COVID-19 who does not develop symptoms [4, 5]. Asymptomatic transmission refers to transmission of the virus from a person, who does not develop symptoms. The virus can cause a range of symptoms from mild illness to pneumonia. Symptoms of the disease are cough, fever, sore throat, rhinorrhoea, loss of smell, loss of taste, diarrohea, headaches and others. Available evidence from contact tracing reported by countries suggests that asymptomatically infected individuals are much less likely to transmit the virus than those who develop symptoms [6, 7]. Both terms refer to people who do not have symptom. The difference is that asymptomatic refers to people who are infected but never develop any symptoms, while pre –symptomatic refers to infected people who have not yet developed symptoms but go in to develop symptoms later. Using available preliminary data, the median time from onset to clinical recovery for mild cases is approximately 2 weeks and is 3-6 weeks for patients with severe or critical disease [11, 12]. Most people (about 80%) recover from the disease without needing special treatment, and for the majority especially for children and young adults illness due to COVID-19 is generally minor. However, for some people it can cause serious illness. Around 1 in every 5 people who are infected with COVID-19 develops difficulty in breathing and requires hospital care. People, who are aged over 60 years, who have underlying medical conditions such as diabetes, heart disease, respiratory disease or hypertension are among those who are at greater risk [13-15].

MATERIALS AND METHODS

This prospective observational study was conducted in the Department of Medicine, 250 Bed District Sadar Hospital, Sunamgonj, Bangladesh during the period COVID-19 cases were reported by the Institute of Epidemiology, Disease Control and Research (IEDCR). Since then, the spread of COVID-19 has increased exponentially along with panic the Government of the People's Republic of Bangladesh declared general holidays (or lock-down). Due to nationwide lock-down, health center-based data collection or community-based local sampling surveys were not feasible. Hence, a telephone-based cross-sectional survey method was adapted from June 2020 to August 2020. In total 82 patients, diagnosed with asymptomatic COVID-19 infection in patient were included in this study as the study population. Collected data were enteredin a predesignedcase report form and subsequently analyzed by SPSS 22. As there are limited comparative data on the individuals with symptomatic and asymptomatic COVID-19, this study was conducted to assess the clinico-epidemiological profile of asymptomatic COVID-19-positive patients in 250 Bed District Sadar Hospital, Sunamgonj, Bangladesh. These data would help set effective preventive, and control strategies against this severe public health threat [19, 20].

Inclusion Criteria

- Patients of both gender
- Patients with severe of Asymptomatic COVID-19 Infection

Exclusion Criteria

- Patients who would not give consent.
- Unstable patients with severe prior complications who symptomatic COVID-19 Infection.

RESULT

The total study population was 82 patients, 61 (74.39%) were males and 21 (25.61%) were females. Table I demonstrated the Sex distribution of the Epidemiology Characteristics and clinical course of asymptomatic COVID-19 infection in patient. (n=82). The Figure I show of Symptoms following RT-PCR become positiveCOVID-19 infection in patient. The full (100%) percentage patients had signs of No Symptoms of positiveCOVID-19 infection in patient. The symptoms of positive COVID-19 infection in 51(62.19%) patients had Cough develop after ± 3days (mean duration), 30(36.58%) patients had Fever development after ± 6days (mean duration), 23(28.04%) patients had Sore Throat develop after ± 3days (mean duration), 7(8.54%) patients had Rhinorrhoea develop after ± 3days (mean duration), 5(6.09%) patients had Loss of Smell develop after ± 3days (mean duration), 14(17.07%) patients had Loss of Taste develop after ± 6days (mean duration), 3(3.65%) patients had Diarrohoea develop after ± 6days (mean duration) and All Patients were Asymptomatic COVID-19 Infection. The Study patients were kept under observation for about two months. During the two months of observation, the patients did not have any major problem, such as hospitalization or ventilation or heart attack. The following Figure II shows the Outcome of Epidemiology Characteristics and clinical course of asymptomatic COVID-19 infection in patient. (n=82) the one hundred percentage patients had Discharge with good recovery, 80(97.56%) patients had Discharge with good recovery RT-PCR 2nd Sample Result, 2(2.44%) patients had Discharge with good recovery RT-PCR 3rd Sample Result, There was no Death in this study.

Table-I: Sex distribution of the study participants. (n=82)

Sex	n=82	%
Male	61	74.39
Female	21	25.61
Total	82	100

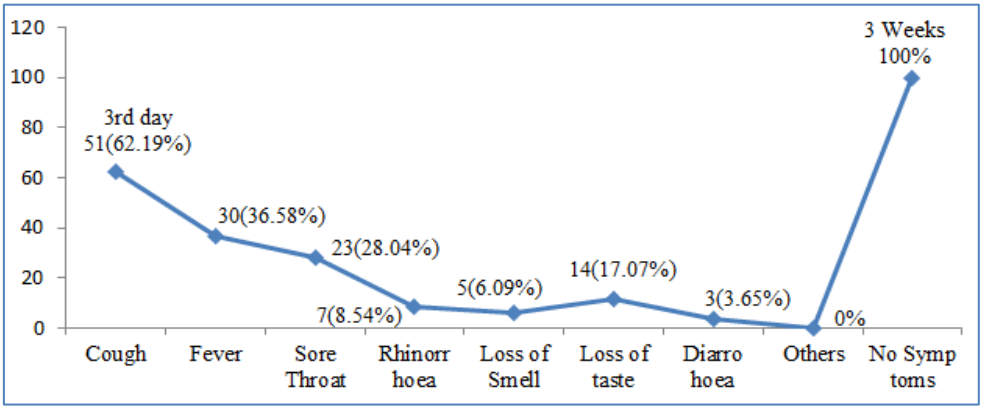

Fig-I: Symptoms following RT-PCR became positive (n=82)

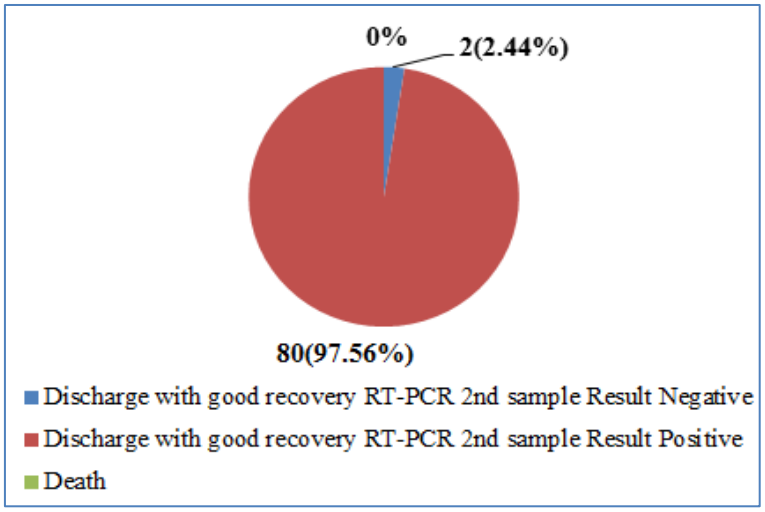

Fig-II: Clinical Outcome (n=82)

DISCUSSION

In this current study, we observed remarkable clinical improvement among patients with Epidemiology Characteristics and clinical course of asymptomatic COVID-19 infection in patient was significant. Patients have no symptoms of asymptomatic COVID-19 infection. Unfortunately, in our study, we did not have any comparative group with other mode of treatment. But in the literature, there are some comparativestudies ofclinical course of asymptomatic COVID-19 infection in patient affecting the mobility and quality of life among individuals. Asymptomatic COVID-19 treatments have been prescribed by physicians with good short-term results. There has been increasing interest in biological and regenerative methods. However, it is to be noted that any invasive procedure may have some placebo effect. To better understand the effect of each treatment modality, it is always recommended to have a alities with favorable outcomes. The virus can cause a range of symptoms from ranging from mild illness to pneumonia. Symptoms of the disease are cough, fever, sore throat, rhinorrhoea, loss of smell loss of taste, diarrohea, headaches and others. Available evidence from contact tracing reported by countries suggests that asymptomatically infected individuals are much less likely to transmit the virus than those who develop symptoms. Both terms refer to people who do not have symptom. The difference is that asymptomatic refers to people who are infected but never develop any symptoms, while pre –symptomatic refers to infected people who have not yet developed symptoms but go in to develop symptoms later. Using available preliminary data, the median time from onset to clinical recovery for mild cases is approximately 2 weeks and is 3-6 weeks for patients with severe or critical disease. Most people (about 80%) recover from the disease without needing special treatment, and for the majority especially for children and young adults illness due to COVID-19 is generally minor. However, for some people it can couse serious illness. Around 1 in every 5 people who are

infected with COVID-19 develops difficulty in breathing and requires hospital care. The total study population was 82 patients, 61 (74.39%) were males and 21 (25.61%) were females. Table I demonstrated the Sex distribution of the Epidemiology Characteristics and clinical course of asymptomatic COVID-19 infection in patient. (n=82). The Figure I show of Symptoms following RT-PCR become positiveCOVID-19 infection in patient. The full (100%) percentage patients had signs of No Symptoms of positiveCOVID-19 infection in patient. The symptoms of positive COVID-19 infection in 51(62.19%) patients had Cough develop after ± 3days (mean duration), 30(36.58%) patients had Fever development after ± 6days (mean duration), 23(28.04%) patients had Sore Throat develop after ± 3days (mean duration), 7(8.54%) patients had Rhinorrhoea develop after ± 3days (mean duration), 5(6.09%) patients had Loss of Smell develop after ± 3days (mean duration), 14(17.07%) patients had Loss of Taste develop after ± 6days (mean duration), 3(3.65%) patients had Diarrohoea develop after ± 6days (mean duration) and All Patients were Asymptomatic COVID-19 Infection. The Study patients were kept under observation for about two months. During the two months of observation, the patients did not have any major problem, such as hospitalization or ventilation or heart attack. The following Figure II shows the Outcome of Epidemiology Characteristics and clinical course of asymptomatic COVID-19 infection in patient. (n=82) the one hundred percentage patients had Discharge with good recovery, 80(97.56%) patients had Discharge with good recovery RT-PCR 2nd Sample Result, 2(2.44%) patients had Discharge with good recovery RT-PCR 3rd Sample Result. There was no Death in this study. In our study, unfortunately, there was no comparison group, clinical course of asymptomatic COVID-19 infection showed significant clinical improvement.

Limitations of the study

This was a single center study with small sample size. So, it will be difficult to generalize in the whole community.

CONCLUSION

Define asymptomatic patients to reduce the transmission of SARS-CoV-2.As their potential to spread the virus cannot be misjudged. Asymptomatic and symptomatic COVID-19 both patients can be appropriately quarantined, community and family clustered transmission may be hugely reduced. But in patients who were asymptomatic COVID-19, no big events were detected during the two-month observation. Contact tracing and testing of the suspected case could be another strategy for preventing and controlling the disease. We have summarized the Epidemiology and clinical course of asymptomatic COVID-19 infection in patient.

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