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Ear Nose and Throat (ENT) Symptoms in Hospitalized Individuals with Confirmed COVID-19 Infection in a Tertiary Care Hospital

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Abstract **Original Research Article**

Background: Acute respiratory distress syndrome (ARDS) and other lower respiratory tract-related symptoms, such as fever, coughing, dyspnea, and pressure in the chest, are the major symptoms of COVID-19. ***Objectives:*** The aim of the study was to assess the Ear Nose and Throat (ENT) Symptoms in Hospitalized Individuals with Confirmed COVID-19 Infection. ***Methods:*** This cross-section observational study was carried out in the Department of ENT, Rangpur Medical College, Rangpur, Bangladesh. The duration of the period from July 2020 to July 2021. A total of 125 patients were participate in the study. All included patients were diagnosed as having confirmed COVID-19 by polymerase chain reaction (PCR) test. After collection, the data were checked and cleaned, followed by editing, compiling, coding and categorizing according to the objectives and variable to detect errors and to maintain consistency, relevancy and quality control. Statistical evaluation of the results used to be obtained via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24). ***Results:*** Mean ± SD age was 35 ± 0.9. Among all the patients 60% were female and 40% were male. Regarding comorbidity, 40% had DM, 48% had HTN, 20% had Thyroid related disease and 10% had CKD. Regarding ENT manifestation, 30% had Sore throat, 60% had Anosmia**,** 35% had Nasal congestion, 33% had nasal obstruction, 34% had Sneezing, 38% had headache, 30% had olfactory and taste dysfunction, 28% had Runny nose or rhinorrhea, 19% had Upper Respiratory Tract Infection (URTI), 10% had Tonsil enlargement and 8% had Allergic rhinitis. There was a significant relationship between age and Severity of COVID-19, Sex and Severity of COVID-19, -19, smoking and Severity of COVID-19. More severe cases were observed in female patients. Most severe COVID-19 cases were reported in patients with comorbidities. ***Conclusion:*** The most prevalent symptoms of COVID-19 are fever and cough, although ENT signs of the disease are also frequent and should be considered, especially if the nasal examination was unremarkable. The most typical signs include a sore throat, nasal obstruction and congestion, headaches, and finally olfactory impairment.

Keywords: ENT, Anosmia, COVID-19.

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INTRODUCTION

The 2019 novel Coronavirus (2019-nCoV), also known as the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), first appeared in Wuhan, China, in December 2019 [1]. Since then, the newly discovered virus, also known as Coronavirus Disease 2019 (COVID-19), has rapidly spread over the world, spanning national borders, and has been declared a pandemic disease by the World Health Organisation (WHO) on March 11, 2020 [2]. The SARS-CoV-2 is a member of the family of SARS-related coronaviruses that have caused epidemics in the past two decades, including the SARS-CoV in China in 2002–2003 [3]. As well as the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in Saudi Arabia between 2012 and 2013 [4]. Acute respiratory distress syndrome (ARDS) and other lower respiratory tract-related symptoms, such as fever, coughing, dyspnea, and pressure in the chest, are the major symptoms of COVID-19 [5]. However, COVID-19 also results in a variety of symptoms that are connected to the upper respiratory system, such as nasal congestion, sore throat, and olfactory impairment [6]. To the best of our knowledge,

there aren't many review studies on olfactory impairment in COVID-19-positive individuals, and the data on ENT manifestations of COVID-19 are scarcely reported. There is still a dearth of peer-reviewed data to indicate a causal relationship between anosmia and COVID-19, and olfactory and taste dysfunctions in COVID-19 patients were only infrequently addressed in the literature [7]. Thus the aim of the study was to assess the Ear Nose and Throat (ENT) Symptoms in Hospitalized Individuals with Confirmed COVID-19 Infection.

METHODOLOGY

This cross-section observational study was carried out in the Department of ENT, Rangpur Medical College, Rangpur, Bangladesh. The duration of the period from July 2020 to July 2021. A total of 125 patients were participate in the study. All included patients were diagnosed as having confirmed COVID-19 by polymerase chain reaction (PCR) test. Suspected and non-confirmed COVID-19 cases, not willing to participate were excluded. All patients were subjected to full history taking, and COVID-19 was categorized into 4 classes of severity (1) mild: mild respiratory symptoms without imaging features of pneumonia; (2) moderate: fever, respiratory symptoms with imaging findings of pneumonia; (3) severe: shortness of breath, systemic oxygen (O2) saturation < 93% at rest on room air, respiratory rate > 30 breaths per minute, ratio of the systemic arterial partial O2 pressure to the fraction of inspired air O2 ≤300 mmHg, or > 50% progress of radiologic pulmonary lesions over 24 to 48 hours; and (4) critical: demanding mechanical ventilation, extracorporeal membrane oxygenation, or other organ support therapy in the intensive care unit (ICU) [8]. After collection, the data were checked and cleaned, followed by editing, compiling, coding and categorizing according to the objectives and variable to detect errors and to maintain consistency, relevancy and quality control. Statistical evaluation of the results used to be obtained via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24).

RESULT

Table-1: Distribution of the respondents by age

Age group (years)	N=125	%
18-29	20	16
30-39	25	20
40-49	40	32
50-59	30	24
≥60	10	8
Mean ± SD age	35 ± 0.9	

Among all the patients 16% were within the age group of 18-29, 20% were within the age group of 30-39, 32% were within the age group of 40-49, 24% were within the age group of 50-59 and 8% had ≥60 years of age. Mean ± SD age was 35 ± 0.9.

Among all the patients 60% were female and 40% were male.

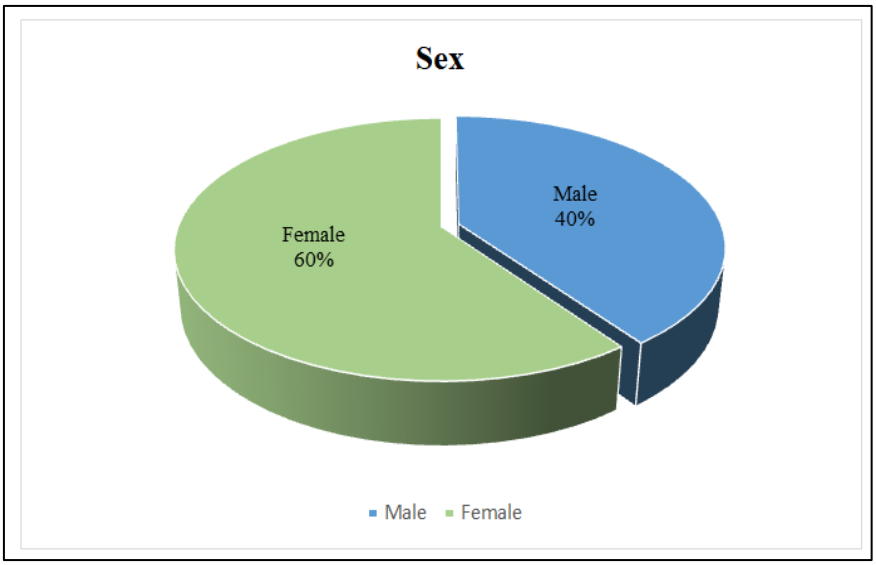

Figure-1: Distribution of the respondents by sex

Table-2: Distribution of the respondents by occupation

Occupation	N=125	%
Service holder	30	24
Businessman	25	20
Housewife	28	22.4
Students	30	24
Others	12	9.6

Here, 24% of the respondents were service holder and students respectively, 20% were businessman, 22.4% were housewife and 9.6% had other types of occupation.

Regarding comorbidity, 40% had DM, 48% had HTN, 20% had Thyroid related disease and 10% had CKD.

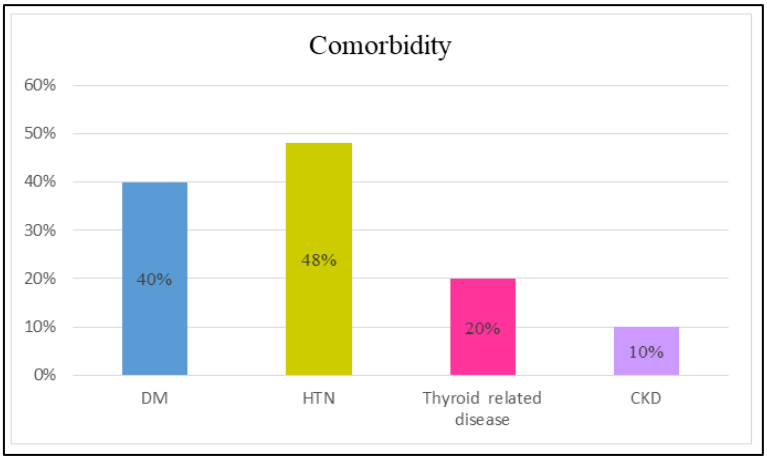

Figure-2: Distribution of the patients by comorbidity, (n=70)

Table-3: Distribution of the respondents by smoking habit

	N=125	%
Smoker	48	38
Non-smoker	77	90

Among all the respondents 38% were smoker and 90% were non-smoker.

Table-4: Distribution of the respondents by ENT manifestation (n=100)

ENT manifestation	N=100	%
Sore throat	30	30
Anosmia	60	60
Nasal congestion	35	35
Nasal obstruction	33	33
Sneezing	34	34
Headache	38	38
Olfactory and taste dysfunction	30	30
Runny nose or rhinorrhea	28	28
Upper Respiratory Tract Infection (URTI)	19	19
Tonsil enlargement	10	10
Allergic rhinitis	8	8

Table-4 shows that, regarding ENT manifestation, 30% had Sore throat, 60% had Anosmia**,** 35% had Nasal congestion, 33% had nasal obstruction, 34% had Sneezing, 38% had headache, 30% had olfactory and taste dysfunction, 28% had Runny nose or rhinorrhea, 19% had Upper Respiratory Tract Infection (URTI), 10% had Tonsil enlargement and 8 % had Allergic rhinitis.

Among Male patients 18% were moderate and 2% were severe COVID-19 patients. Among female 19% were moderate and 3% were severe COVID-19 patients.

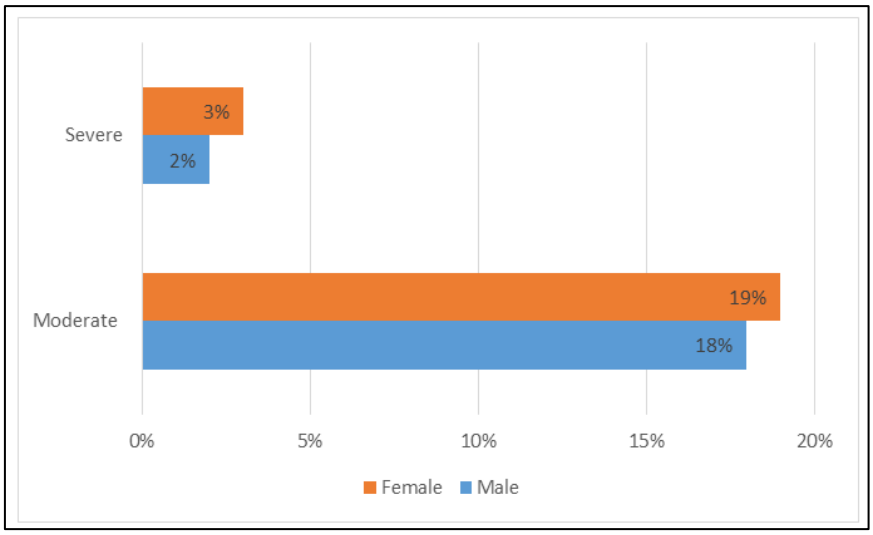

Figure-3: Distribution of the patients by severity of COVID-19 between male and female

Table-5: Distribution of the respondents by association between severity of COVID-19 and Age, sex, Comorbidity, Smoking and ENT manifestation

	Severity of COVID-19
Age	0.001*
Sex	0.003*
Comorbidity	0.209
Smoking	0.005*
ENT manifestation	0.07

Table-5 shows that there was a significant relationship between age and Severity of COVID-19, Sex and Severity of COVID-19, -19, smoking and Severity of COVID-19. More severe cases were observed in female patients. Most severe COVID-19 cases were reported in patients with comorbidities.

DISCUSSION

A novel coronavirus (CoV) epidemic caused by the SARS-CoV-2 (severe acute respiratory syndrome coronavirus) emerged from China in December 2019 [9]. The sickness brought on by this novel virus was given the COVID-19 designation by the WHO on February 11, 2020. Because of its wide spread infectivity and dispersion, COVID-19 is a significant virus that poses an endless health hazard [10]. The clinical spectrum of COVID-19 ranges widely, from minimal symptoms to septic shock and multiple organ dysfunction [11]. There is still a dearth of literature on the ENT symptoms of COVID-19. As a result, it is important to research the ENT effects of this unique virus, and it is necessary to pinpoint the distinctive ENT epidemiological and clinical traits of COVID-19. As a result, we investigated, documented, and analysed the various ENT manifestations in verified COVID19 patients in the current study. We also examined how these manifestations related to other manifestations and the severity of COVID-19.

In our study, Among all the patients 16% were within the age group of 18-29, 20% were within the age group of 30-39, 32% were within the age group of 40-49, 24% were within the age group of 50-59 and 8% had ≥60 years of age. Mean ± SD age was 35 ± 0.9. Among all the patients 60% were female and 40% were male. 38% were smoker and 90% were non-smoker. A previous study showed that, Smoking increases androgen pathway upregulation, which raises SARS-CoV-2 vulnerability [12]. In this current study, regarding ENT manifestation, 30% had Sore throat, 60% had Anosmia, 35% had Nasal congestion, 33% had nasal obstruction, 34% had Sneezing, 38% had headache, 30% had olfactory and taste dysfunction, 28% had Runny nose or rhinorrhea, 19% had Upper Respiratory Tract Infection (URTI), 10% had Tonsil enlargement and 8% had Allergic rhinitis which is similar to what has been reported by in the study by Speth *et al*., [13]. When COVID-19 presents clinically, allergic rhinitis (AR) may be mistaken for it; however, sudden and total anosmia may be an early symptom of COVID-19 infection, distinguishing it from

AR [14]. Another previous study showed, 47% with confirmed COVID-19 reported anosmia [15]. Mao *et al*., [16] detected anosmia in 5.1% of their studied cases, and El-Anwar *et al*., [17] detected an incidence of 6%. According to Menni *et al*., [18], a combination of loss of taste and smell, fever, a prolonged cough, exhaustion, and GIT symptoms is a predictor of a COVID-19 positive test result. Anosmia, however, was not investigated in relation to other manifestations.

In this study, Among Male patients 18% were moderate and 2% were severe COVID-19 patients. Among female 19% were moderate and 3% were severe COVID-19 patients. There was a significant relationship between age and Severity of COVID-19, Sex and Severity of COVID-19, -19, smoking and Severity of COVID-19. More severe cases were observed in female patients. Most severe COVID-19 cases were reported in patients with comorbidities.

CONCLUSION

The most prevalent symptoms of COVID-19 are fever and cough, although ENT signs of the disease are also frequent and should be considered, especially if the nasal examination was unremarkable. The most typical signs include a sore throat, nasal obstruction and congestion, headaches, and finally olfactory impairment.

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