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Artículo Original:
Prevalência de manifestações
otorrinolaringológicas na COVID-19
moderada e grave

Prevalence of ENT manifestations in
Moderate and Severe COVID-19

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Resumo

Objetivo: O objetivo do presente estudo foi de detetar, analisar e descrever a presença de manifestações otorrinolaringológicas em pacientes com COVID-19 moderada e grave.

Material e Métodos: 330 pacientes com diagnóstico laboratorial de COVID-19 entre Outubro e Dezembro de 2020 com necessidade de hospitalização, foram questionados acerca de manifestações do foro de Otorrinolaringologia, tais como, congestão nasal, rinorreia, odinofagia, cefaleia e disfunções do olfato e do paladar.

Resultados: Dos 330 pacientes, manifestações otorrinolaringológicas foram encontradas em 65 deles. A idade média foi de 59,29 anos. As manifestações otorrinolaringológicas começaram em média 5,52 dias antes do agravamento clínico. Os sintomas mais encontrados foram a rinorreia (n=28), cefaleia (n=27), odinofagia (n=21) e alterações do olfato (n=18). A rinorreia e a diminuição do olfato foram os sintomas isolados mais frequentemente encontrados. Por outro lado, a alteração do paladar não foi encontrada como queixa isolada em nenhum dos pacientes. A tríade mais comum foi a congestão nasal, rinorreia e cefaleia.

Conclusão: Concluímos que um em cada 5 doentes com progressão da COVID-19 para doença moderada e grave apresentaram manifestações otorrinolaringológicas previamente e, não apenas, sintomas respiratórios inferiores.

Palavras chave: ORL, otorrinolaringologia, COVID-19, SARS-CoV-2

Abstract

Objective: The goal of this study was to detect, analyze and describe the presence of Otorhinolaryngology manifestations in patients with moderate and severe COVID-19 disease.

Material and Methods: 330 patients with laboratory diagnosis of COVID-19 between October and December of 2020 and with hospitalization, were asked about ENT manifestations, such as, nasal congestion, rhinorrhea, odynophagia, headache and smell and taste dysfunctions.

Results: Of the 300 patients, Otorhinolaryngology symptoms were detected in 65 patients. The median age of the patients was 59,29 years. ENT symptoms started an average 5,52 days before the clinical worsening. The most common findings were rhinorrhea (n=28), headache (n=27), odynophagia (n=21) and smell dysfunction (n=18). Rhinorrhea and loss of smell were the most common complaints as a single symptom. On the other hand, isolated loss of taste was not found in the sample. The most common triad found was nasal congestion, rhinorrhea and headache.

Conclusion: We concluded that one in five patients who progress to moderate or severe disease had ENT symptoms previously and not only lower respiratory symptoms and we must be aware of them.

Keywords: ENT; otorhinolaryngology; COVID-19, SARS-CoV-2

Introduction

During 2019 in Wuhan, China, a new virus called SARS-CoV-2 was discovered which causes COVID-19^{1,2}. This disease spread throughout the world until World Health Organization declared it a pandemic disease in March 2020³. In recent days, more than 100 million cases are confirmed in laboratory around the world, and still counting and growing every day.

COVID-19 has a large spectrum of severity and associated symptoms. Clinically, it can go from asymptomatic to a severe disease needing hospitalization^{4,5}. When the disease is symptomatic, the common symptoms are fever, fatigue and dry cough, which may or not, on a severe case, develop Viral Pneumonia or even Severe Acute Respiratory Distress Syndrome.^{3,6} Ear, Nose and Throat (ENT) manifestations like, nasal obstruction, rhinorrhea, odynophagia, smell and taste dysfunctions and headache have been described, in most of the cases, as a mild disease^{2,7,8}. However, all these symptoms can be previously present or at the time of worsening of disease, as a difficulty of breathing can appear on an eight-day average after the beginning of the disease.

The goal of this study was to detect, describe and analyze the presence of Otorhinolaryngology manifestations in patients with moderate and severe COVID-19 disease on the day of hospital admission.

Material and Methods

This is a descriptive study carried out in a tertiary care center. The present study complies with the rules of Ethics Committee at *Centro Hospitalar Universitário do Porto*.

Patients with a confirmed polymerase chain reaction (PCR) positive for SARS-CoV-2 admitted with moderate to severe disease from October to December at Centro Hospitalar Universitário do Porto in Portugal, were included in the study. Patients with an inability to give a verbal response, patients with less than 18 years old and patients with chronic nasal pathology and recent ENT surgery were excluded.

A detailed clinical history, assessing all symptoms of COVID-19, was taken from these patients who consented for the study. Patients were asked in admission day about ENT manifestations, namely, nasal obstruction, rhinorrhea,odynophagia, headache and smell and taste dysfunctions. The onset of symptoms and their duration before the condition worsening were also questioned.

To statistical analysis, we use Statistical Package for Social Sciences (SPSS, versão 26) and applied descriptive tests, t-test and ANOVA.

Results

A total of 330 patients that fulfilled the inclusion criteria were hospitalized at *Centro Hospitalar Universitario do Porto* between October and December of 2020. The cohort consists of 164 women and 166 men. It has an average age of $71.07 \pm 16,99$ years, with an interval between 21 and 101 years.

Of the 330 patients, all of them presented with breathing difficulty and Otorhinolaryngology symptoms were detected on the day of hospitalization in 65 patients, with an average age of $59,29 \pm 18,47$ years. Thirty-three were women and thirty-two were men. The patients with ENT symptoms were younger than patients without ENT symptoms detected and this difference between the two groups was statistically significant ($p < 0,05$). No differences were found regarding genders.

Graphical representation of ENT manifestation is illustrated in Fig.1. Out of 65 patients with ENT manifestations the most common findings were rhinorrhea ($n=28$) and headache ($n=27$). Rhinorrhea was presented in 43,1%; headache in 41,5%; odynophagia in 32,3%; smell dysfunction in 27,7%; nasal congestion in 18,5%; taste dysfunction in 4,6% and epistaxis in 3,3%. Only two out of 65 patients had smell and taste dysfunction at the same time.

The most found symptom as a single complaint was rhinorrhea ($n=10$) and then loss of smell ($n=9$). The least frequent was nasal congestion ($n=2$) and isolated loss of taste was the only one that was not found in any of patients.

The most prevalent set of symptoms were rhinorrhea and headache ($n=5$), odynophagia and headache ($n=5$) and, finally, nasal congestion, rhinorrhea, and headache ($n=4$) (Table 1).

ENT symptoms started an average 5,52 (SD= 2,84 days) days before the clinical worsening, with an interval between 1 and 14 days before.

Distribution of symptoms by gender is illustrated in Fig.2. We found through t-test that there are statistically significant differences between males and females when the symptom is headache ($p=0,006$). In the other symptoms there weren't differences between gender.

We divided all the 65 patients into four groups according to age group. Group 1 aged 20-39 years, consisting of 11 patients; group 2 aged 40-59 years with 22 patients; group 3 aged 60-79 years with 21 patients and aged 80-99 with 11 patients. We can see that most patients are in group 2 and 3. Subsequently, we applied the ANOVA test, to detect whether there were statistically significant differences in symptoms in each of these groups. However, no differences were found. (Fig.3).

Discussion

With this study we tried to investigate the frequency of ENT symptoms in patients with positive laboratory diagnosis of COVID-19 and with criteria of moderate and severe disease.

It is known that fever and cough are the most commonly encountered symptoms in patients with COVID-19 disease⁹. But it is also known that virus has a wide spectrum of symptom presentation, and the focus should not only be on lower respiratory symptoms but also on upper respiratory symptoms since virus lodges in the oropharynx and nasopharynx^{6,10}.

Both odynophagia, nasal congestion and loss of smell can be initial symptoms of COVID-19².

With this cohort constituted by 330 patients with moderate and severe COVID-19, we saw that approximately one in five had ENT manifestations and that rhinorrhea, headache, odynophagia, and loss of smell were common symptoms while nasal congestion and loss of taste were rare. It should be noted in all patients with ENT symptoms that these were present before the hospitalization day. The results of this study show that not only patients with mild disease have Otorhinolaryngologic complaints, although they were not as common as lower respiratory symptoms.

Last year, the American Academy of Otolaryngology – Head and Neck Surgery proposed to add anosmia and dysgeusia to the list of screening tools for COVID-19 infection, and we can really conclude that loss of smell is a very prevalent complaint in these patients^{2,7}.

We concluded that not all patients who progress to moderate and severe illness had only fever and cough. Other clinical findings, like ENT symptoms, may be present before the clinical conditions gets worse and we must be aware of them.

Our study had some limitations: the symptoms were answered based on patient's self-report and no scale were applied and there was not a reassessment of symptoms.

Conclusion

This descriptive study highlights the importance of detecting otolaryngologic symptoms in COVID-19, not only in mild disease but also in moderate and severe disease, since it doesn't exist in literature. It is extremely important to continue researching about this still mysterious new virus, so we can identify and treat it.

Declaration of Conflict of Interest: We have no conflict of interest.

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Tables and Figures

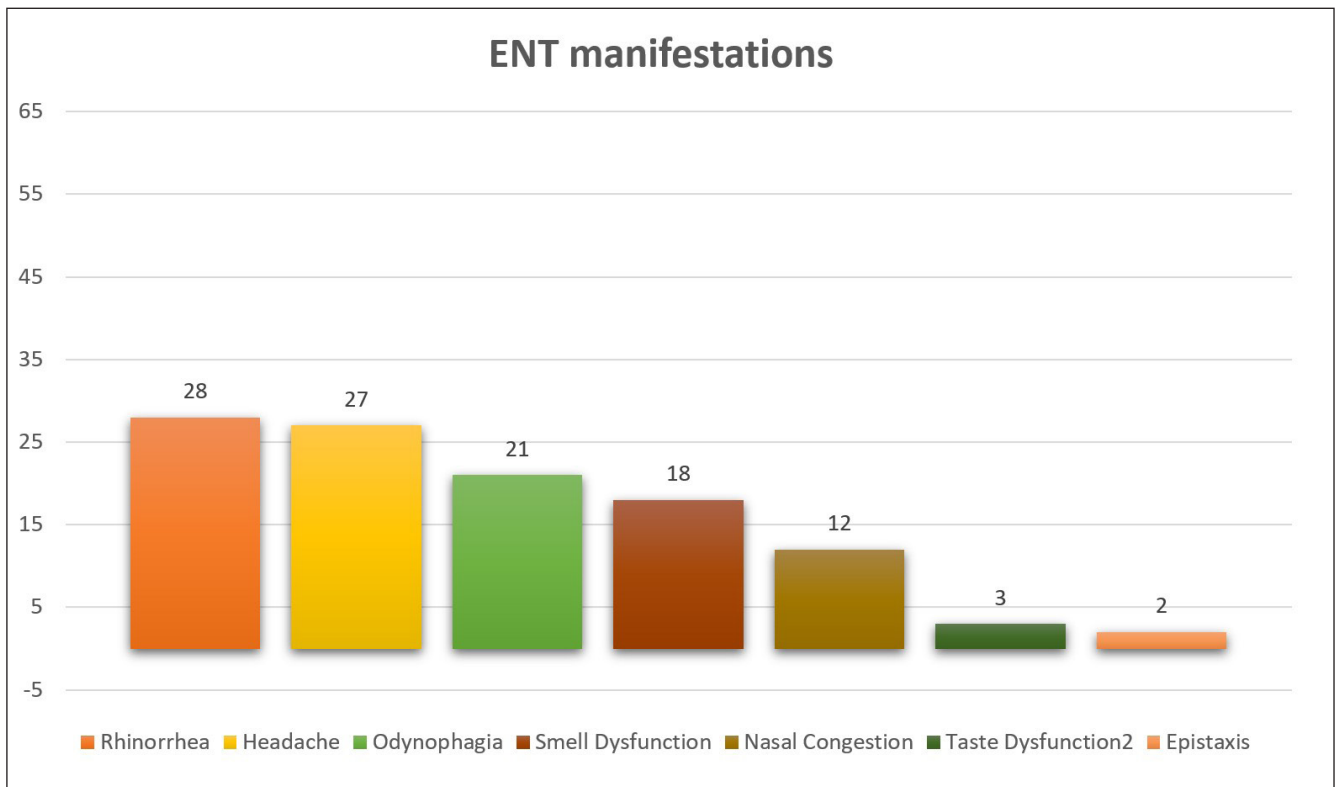


Fig. 1 – ENT manifestations in patients with moderate and severe disease.

Symptoms	Frequency (n)	Percentage (%)
Rhinorrhea	10	15,4
Loss of Smell	9	13,8
Odinophagy	7	10,8
Headache	6	9,2
Rhinorrhea + Headache	5	7,7
Odinophagy + Headache	5	7,7
Nasal Congestion + Rhinorrhea + Headache	4	6,2
Rhinorrhea + Odinophagy	3	4,6
Loss of Smell + Headache	3	4,6
Nasal Congestion	2	3,1
Nasal Congestion + Rhinorrhea	1	1,5
Nasal Congestion + Odinophagy	1	1,5
Rhinorrhea + Loss of Smell	1	1,5
Nasal Congestion + Loss of Smell + Odinophagy	1	1,5
Rhinorrhea + Odinophagy + Loss of Smell	1	1,5
Nasal Congestion + Rhinorrhea + Odinophagy + Loss of Smell	1	1,5
Nasal Congestion + Headache	1	1,5
Rhinorrhea + Odinophagy + Headache	1	1,5
Nasal Congestion + Loss of Taste + Headache	1	1,5
Loss of Smell + Loss of Taste + Headache	1	1,5
Odinofagia, Hiposmia, Ageusia e Cefaleia	1	1,5
Total	65	100

Table 1 – Different sets of symptoms found in the sample.

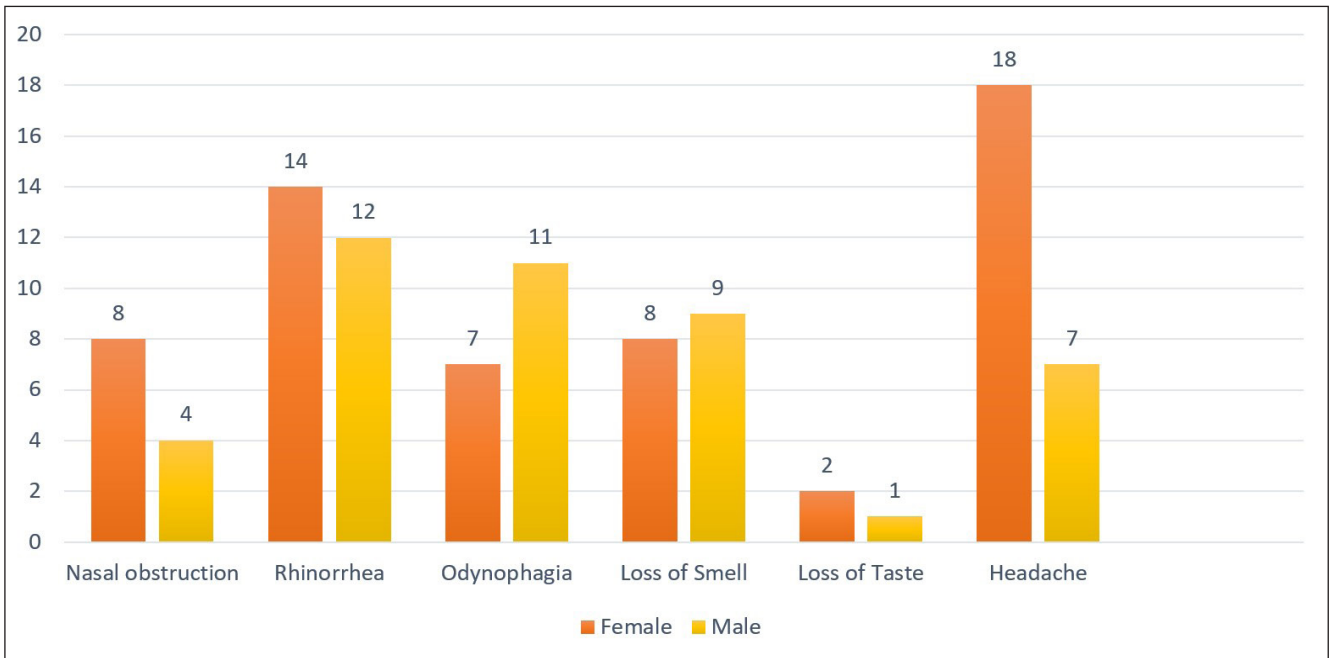


Fig. 2 – Distribution of ENT symptoms by gender.

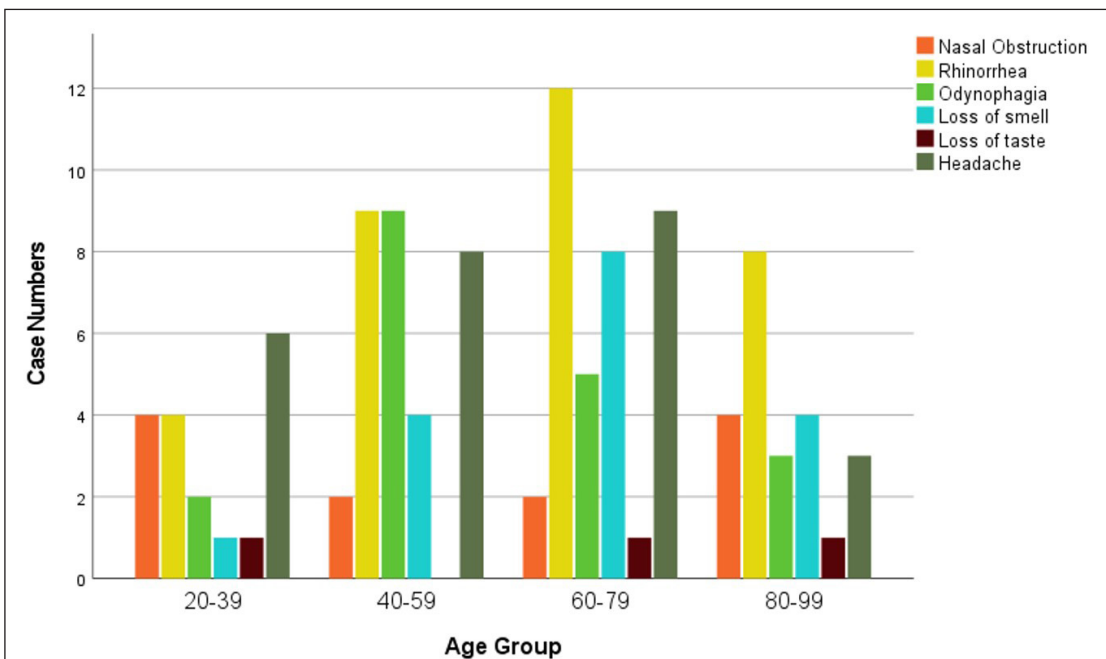


Fig. 3 – Distribution of symptoms by age group.