



Impact of COVID-19 on Rhinology Practice: The Way Forward

<https://doi.org/10.47210/bjohns.2022.v30i1.590>

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ABSTRACT

Introduction

COVID-19 has been labelled as pandemic that has spread across many countries in 2020. Otorhinolaryngologists are considered high risk for contracting disease, as the virus resides in the nasal cavity, nasopharynx, and oropharynx. There is an urgent need of safety measures regarding rhinologic practice that need to be clarified both for the current epidemic as well as for future expected “waves”. In this study significant decline was seen in patients viewed physically during pandemic. Nasal endoscopy also became rarer with maximum rhinologists preferring RTPCR before any procedure. Imaging was substituted for endoscopy frequently to adhere to safety protocols relating to OPD rhinologic procedures. We need to discuss these aspects of rhinology as well as practical concerns relating to telemedicine, as these issues take on increasing importance for Rhinologists both in the present and the future.

Materials and Methods

A 27-question survey was designed to assess the present scenario of rhinology practise. The survey was electronically transmitted to rhinologists from 1st November 2020 and their responses were recorded.

Results

A total of 117 rhinologists responded to the survey. There was significant drop in the number of patients seen by each specialist in the COVID-19 era. There was significant reduction in the number of diagnostic nasal endoscopies performed in clinic daily by the specialists. This study provides an overview of how the COVID-19 pandemic has affected Rhinologic practice.

Conclusion

Rhinologists need to develop standardized guidelines for their practise. These include protocols pertinent to safety, the substitution of imaging for endoscopy when appropriate, RTPCR test prior to rhinologic procedures, donning of proper PPE and liberal use of telemedicine.

Keywords

COVID-19; Rhinology

Coronavirus Disease (COVID-19) has been labelled as “deadly worldwide pandemic” that has spread around the globe. Corona virus (SARS-CoV-2) is an RNA virus that ranges in its clinical effect from common cold to more severe lower respiratory symptoms

including pneumonia, acute respiratory distress syndrome (ARDS), and death.^{1,2} This crisis was officially named a pandemic by the World Health Organization (WHO) on March 11, 2020.³

The SARS-CoV-2 virus is mostly found in the upper airways, with high viral loads in the nasal cavities and the oral cavity.⁴ Any ENT diagnostic or therapeutic procedure therefore carries a risk of spreading the virus and contaminating the healthcare team. This risk seems to be particularly high in the field of rhinology, especially endoscopic endonasal surgery.^{5,6}

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The study was started with the aim to study the effect of COVID-19 on Rhinology practice, changes in Rhinology practice due to COVID-19 and safety protocols practiced by Rhinologists in office procedures. Our secondary goal was to chart a map for safe rhinology practice in the COVID-19 era.

Materials and Methods

This study was an observational cross-sectional study. Data was collected using a semi structured pretested questionnaire. A 27-question survey was created to fulfil these objectives.⁷ The survey was then distributed to 117 Otorhinolaryngologists in a web-based format via https://docs.google.com/forms/d/e/1FAIpQLSdE0GzRRPmzxjISIN3oVr_xf87jB9YZ9hJrNEKKJgtStQDdhA/viewform?usp=sf_link from 1st November 2020.

The questionnaire included demographic data like age, gender, type of clinical practice, years in practice, location of practice by region. It enquired effects of COVID-19 pandemic on clinic operations including number of physical consultations, implementation of telephone/video consultations, number of endoscopies performed, whether specific office procedures were still being performed (endoscope guided cultures, control of epistaxis, debridement), preferred personal protective

equipment (PPE) in the clinic, effects on medical management of chronic rhinosinusitis (CRS) (any change in recommendation for nasal steroid use, topical irrigation use) and if COVID-19 has had an effect on how CRS is being diagnosed, type of surgery being allowed at surgery centre/hospital, whether elective functional endoscopic sinus surgery (FESS) is being performed, whether urgent endoscopic skull base surgery for tumours is being performed, preferred operating room PPE. It further included the use of point of care COVID-19 testing prior to operation, whether the respondent had been furloughed or re-deployed to other areas of the healthcare system, and whether the respondent had ever contracted COVID-19.

The collected data was assessed in Microsoft Excel. Data is represented in frequencies and percentages, charts and graphs. Mean and standard deviation of quantitative variables is shown. Appropriate statistical tests are applied using SPSS software version 21 for analysis. Chi square test is used for association between the study variables. Statistical significance is considered at $p < 0.05$.

Results

A total of 117 rhinologists responded to the survey (Fig. 1), age ranging from 30 years to >70 years. The most

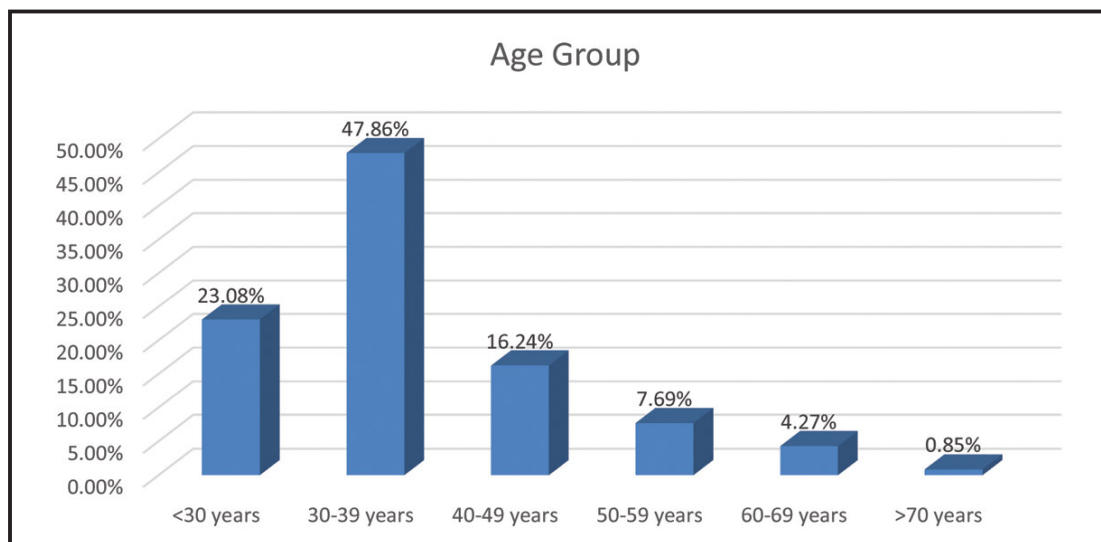


Fig. 1. Age group wise distribution of study participants

common age group was 30-39 years (47.86%) followed by <30 years (23.08%), 40-49 years (16.24%), 50-59 years (7.69%), 60-69 years (4.27%) and 0.85% in >70 years.

In the present study of 117 rhinologists, 70.09% were males (M=82) and 29.91% were females (F=35). Regarding clinical practice setting, 31.62% respondents were from government hospitals, followed by medical colleges (27.35%), single speciality private (17.09%), multi-speciality private (16.24%) and solo private practice (7.69%). Study participants were most commonly in practice for less than 5 years (51.28%) followed by 5-10 years (21.37%), 10-20 years (17.09%), more than 30 years (5.98%) and 20-30 years (4.27%). The regional representation of the respondents was most commonly from Maharashtra and the southern states of India 58.12% while 41.88% responded from northern and rest of the states of India.

35.90% of respondents were evaluating an average of >40 patients daily pre COVID-19, followed by 10-20 (18.80%), 21-30 (17.09%), 31-40 (14.53%) and 1-10 (13.68%). At the time of survey, 28.21% respondents reported seeing >20 patients per day, followed by 0-5 (23.93%), 6-10 (21.37%), 11-15 (16.24%) and 16-20 (10.26%). There was significant difference in number of

patients seen by the specialists pre-COVID-19 and during-COVID-19. ($p < 0.001$) (Table I)

Pre-COVID-19 average number of patients consulted per day was around 32, while during COVID-19 it was around 24. Maximum number of patients consulted pre-COVID-19 was more than 40 per day by 42 respondents (35.90%) while during COVID-19, maximum consultants (33 doctors; 28.21%) reported consulting less than 10 patients per day.

Pre COVID-19, respondents were performing <10 (70.09%), followed by 10-20 (26.50%), 21-30 (1.17%) and >30 (1.71%) nasal endoscopies daily. During the pandemic, 58.97% were performing 1-5 endoscopies per day, followed by 0 (34.19%), 6-10 (5.13%), 11-15 (0.85%) and >15 (0.85%) (Table II). There was significant difference in the number of diagnostic nasal endoscopies performed in clinic daily by the specialists before and during COVID-19. ($p < 0.001$) (Table II)

Pre-COVID-19 average number of diagnostic nasal endoscopies performed in clinic daily was around 18, while during COVID-19 it was around 7. Maximum number of diagnostic nasal endoscopies performed pre-COVID-19 was 10-20 per day by 69 respondents (58.97%) while during COVID-19 maximum consultants

Table I: Distribution of study participants according to average patients evaluated in clinic daily before and during COVID-19

PATIENTS EVALUATED IN CLINIC DAILY	PRE-COVID-19		DURING-COVID-19	
	FREQUENCY	PERCENT	FREQUENCY	PERCENT
< 10	16	13.68%	33	28.21%
10 to 20	22	18.80%	28	23.93%
21 - 30	20	17.09%	25	21.37%
31 - 40	17	14.53%	19	16.24%
> 40	42	35.90%	12	10.26%
Total	117	100.00%	117	100.00%
$X^2 = 23.95, df=4, p < 0.001$				

Table II: Distribution of study participants according to diagnostic nasal endoscopies performed in clinic daily before and during COVID-19 Pandemic

DIAGNOSTIC NASAL ENDOSCOPY PERFORMED IN CLINIC DAILY	PRE-COVID-19		DURING-COVID-19	
	FREQUENCY	PERCENT	FREQUENCY	PERCENT
<10	40	34.19%	82	70.09%
10 – 20	69	58.97%	31	26.50%
21 – 30	6	5.13%	2	1.71%
> 30	2	1.7%	2	1.71%
Total	117	100.00%	117	100.00%
$X^2 = 30.89, df=3, p < 0.001$				

(82 doctors ;70.09%) reported performing less than 10 diagnostic nasal endoscopies per day. There was significant reduction in diagnostic nasal endoscopies performed in clinic daily.

The most common method to establish diagnosis of chronic rhinosinusitis (CRS) during COVID-19 was clinical, with supportive CT scan (49.60%) and via clinic visit (23.90%), followed by symptoms and endoscopy in the clinic (23.10%), symptoms alone via virtual consultation (telephone and /or video; 3.40%).

Overall, 86.32% responders were getting RT-PCR Swab test done before rhinology procedures whereas 13.68% didn't. 77.78% didn't do HRCT Chest before rhinology procedures and 81.20% denied performing endoscope-guided cultures. 53.85% rhinologists were performing surgical debridement whereas 46.15% weren't. 57.26% responders denied using microdebrider and drill whereas 42.74% were using it. 87.18% were still managing epistaxis in the clinic.

For those performing diagnostic endoscopy or office procedures, preferred PPE was N95 mask (78.63%), elastomeric respirator with P100 filter (12.82%), surgical mask (5.98%) and PAPR (2.56%).

Regarding topical nasal steroid usage for pre-existing allergies or CRS, 63.25% recommended continued use of current dosage, 26.50% recommended reducing

dosage, 8.55% were unsure on best practice, and 1.71% had patients stop nasal steroids. Regarding topical saline irrigation use for pre-existing allergies or CRS, 79.49% recommended continuing current frequency, 13.68% recommended reduction in frequency, 5.13% were unsure on best practice, and 1.71% had patients stop saline irrigations.

Regarding concerned hospitals allowing surgical care during COVID-19, 59.83% allowed elective cases, 20.51% allowed emergent cases only, 11.11% allowed emergent and time critical (cancer) cases only and 8.55% allowed no surgery. 56.41% rhinologists were performing elective functional endoscopic sinus surgery (FESS) for CRS with and without polyps and 39.3% were performing time critical endoscopic cancer or skull base procedures during COVID-19 pandemic.

89.74% rhinologists preferred CT PNS imaging technique over Diagnostic Nasal Endoscopy. 11.11% (13) rhinologists had contracted COVID-19 due to current clinical responsibilities. Out of 117 rhinologists, 61.54% were not redeployed and rest 38.46% were redeployed to different areas (13.68% in medical floor, ICU 10.26%, surgical floor 8.55%, emergency department 5.98%). 14.53% responders were temporary laid off from work due to COVID-19 pandemic and have been re-deployed; the locations include the general medical floor (8),

emergency department (4), intensive care unit (3) and surgical floor (2).

Discussion

The disease COVID-19 resulting from the novel corona virus strain (SARS-CoV-2) represents an extraordinary threat to the health of the global population. This study provides an overview into the effect of COVID-19 pandemic on rhinology practice.

There has been a statistically significant decline in the number of patients seen physically by the specialists. Further, there has been a drastic decrease in the number of nasal endoscopies, debridement, endoscope-guided cultures, and epistaxis management in the office. The results were found in accordance with the study done by Papagiannopoulos et al.⁷

According to our study, 63.25% rhinologists are maintaining patients on their pre-COVID-19 dosage of topical steroid sprays and frequency of saline irrigations as compared to 82.6% rhinologists in the study done by Papagiannopoulos et al.

Most rhinologists preferred to establish the diagnosis of chronic rhinosinusitis (CRS) during COVID-19 era clinically and supportive CT rather than with virtual consultation only.

Maximum responders were getting RTPCR test done before performing any rhinological procedure to safeguard the surgeons and the staff in high risk aerosolizing procedures. But 77.78% denied requesting HRCT Chest before rhinology procedures. Maximum participants were using only N-95 mask as preferred protection equipment. There is probably a need for education and sensitisation of health care workers about the need of using proper PPE at work.

In our study we found that during the pandemic era 59.83% hospitals allowed elective cases to be performed and 56.41% rhinologists were performing FESS for CRS.

There are a few limitations of this study. The sample size is small which is probably inadequate to arrive at a definitive conclusion. A greater part of the respondents was new (<5 years) to rhinology practise which may have

effects on the conclusions drawn from this study. Experienced and senior rhinologists having an established practise are less comfortable to electronic questionnaire surveys. Hence the real effect of COVID-19 on rhinology practise may not have been revealed in our study. Sensitisation of rhinologists regarding the use of proper PPE is an important step to provide safe and successful care to our patients in present and additional waves of the pandemic.

Conclusion

The COVID-19 pandemic has tremendously impacted our entire society, including healthcare providers. Otolaryngologists bear unique risks due to the virus predominantly lodging in the nasopharynx and nose. This makes nasal endoscopy and other OPD rhinologic procedures a concern for the Otolaryngologist with increased risk for infection. Rhinologists need to develop standardized guidelines for undertaking potentially aerosol-generating procedures (AGPs). These include protocols pertinent to safety, the substitution of imaging for endoscopy when appropriate, and importantly, RTPCR test prior to common rhinologic procedures, wearing of proper PPE and liberal use of telemedicine. Further extensive studies are needed in this area.

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