

## Original Article

### Assessment of Patients with Chronic Rhinosinusitis visiting a Hospital: A Retrospective Study

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#### ABSTRACT:

**Background:** Rhinosinusitis is an inflammatory disease of the nasal and paranasal sinus mucosa. It is defined as chronic when it lasts longer than 3 months without complete symptom resolution. Diagnostic criteria consist of the presence of symptoms including purulent nasal discharge, nasal obstruction, facial pain/pressure/fullness, and/or decreased sense of smell plus either endoscopic findings of inflammation, purulent discharge or edema of the middle meatus or ethmoid region, polyps in the nasal cavity or the middle meatus, and/or radiographic imaging showing inflammation of the paranasal sinuses. **Aim of the study:** To retrospectively assess the patients with chronic rhinosinusitis visiting a hospital. **Materials and methods:** The study was conducted in the Department of ENT of the medical institute. We reviewed the medical records of 80 patients with a clinical diagnosis of Chronic Rhinosinusitis. All charts were reviewed and the following information acquired: age, sex, presenting signs and symptoms, duration of symptoms, comorbidities, medical and family history, presence of tobacco smoke or day care exposure, results of immunologic testing, computed tomography (CT) scan results, concurrent surgical procedures performed, maxillary sinus culture and sensitivity results, postoperative antibiotic treatment regimen and duration, whether resolution was achieved, surgical and antibiotic-related complications, and compliance with follow-up and therapy. **Results:** A total of 80 patients were selected for the study. We observed that 44 patients had history of anemia, 32 patients had history of reactive airway disease, 29 patients had the history of middle ear disease, 11 had history of eczema, 39 had history of tobacco exposure and 28 patients had family history of asthma. We observed that nasal obstruction was experienced by 39 patients, congestion by 42 patients, cough by 34 patients and rhinorrhea by 72 patients. **Conclusion:** Within the limitations of the study we conclude that the most common symptom experienced by patients was rhinorrhea and the most common past medical history of the patients was reactive airway disease.

**Key words:** Chronic sinusitis, rhinorrhea, CRS.

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#### INTRODUCTION:

Rhinosinusitis is an inflammatory disease of the nasal and paranasal sinus mucosa. It is defined as chronic when it lasts longer than 3 months without complete symptom resolution. Diagnostic criteria consist of the presence of symptoms including purulent nasal discharge, nasal obstruction, facial pain/pressure/fullness, and/or decreased sense of smell plus either endoscopic findings of inflammation, purulent discharge or edema of the middle meatus or ethmoid region, polyps in the nasal cavity or the middle meatus, and/or radiographic imaging showing inflammation of the paranasal sinuses.<sup>1, 2</sup> Chronic rhinosinusitis (CRS) is a common health problem which significantly affects quality of life. CRS has a significant impact on patients in seven of eight domains of the 36-item short form health survey (SF-36). Patients have significantly higher bodily pain and decreased social function compared to other chronic

diseases (congestive heart failure, angina, chronic obstructive pulmonary disease, and back pain).<sup>3,4</sup> Treatment of CRS includes medical and surgical therapy. Medical therapy often requires combining multiple medications including antibiotics, nasal decongestants, topical nasal steroids and/or oral steroids, and saline irrigation. The rationale of this regimen is to control precipitating factors, treat the infection, reduce mucosal edema, and facilitate drainage. However, some patients do not respond with full medical treatment alone; in these cases, treatment with endoscopic sinus surgery should be considered as an alternative.<sup>5,6</sup> Hence, the present study was conducted to retrospectively assess the patients with chronic rhinosinusitis visiting a hospital.

#### MATERIALS AND METHODS:

The study was conducted in the Department of ENT of the medical institute. The ethical clearance for the study

was obtained from the ethical board of the institute prior to commencement of the study. We reviewed the medical records of 80 patients with a clinical diagnosis of Chronic Rhinosinusitis. All charts were reviewed and the following information acquired: age, sex, presenting signs and symptoms, duration of symptoms, comorbidities, medical and family history, presence of tobacco smoke or day care exposure, results of immunologic testing, computed tomography (CT) scan results, concurrent surgical procedures performed, maxillary sinus culture and sensitivity results, postoperative antibiotic treatment regimen and duration, whether resolution was achieved, surgical and antibiotic-related complications, and compliance with follow-up and therapy. All patients included in the study carried a clinical diagnosis of chronic rhinosinusitis as defined by the presence of thick nasal discharge and productive cough for a minimum of 3 months and confirmation of mucopurulent secretions in the nasal cavity via anterior rhinoscopy. The data was tabulated and subjected to statistically analysis. The statistical analysis of the data was done using SPSS version 20.0 for windows. The Student's t-test and Chi-square test were used to check the significance of the data. The p-value less than 0.05 was predetermined as statistically significant.

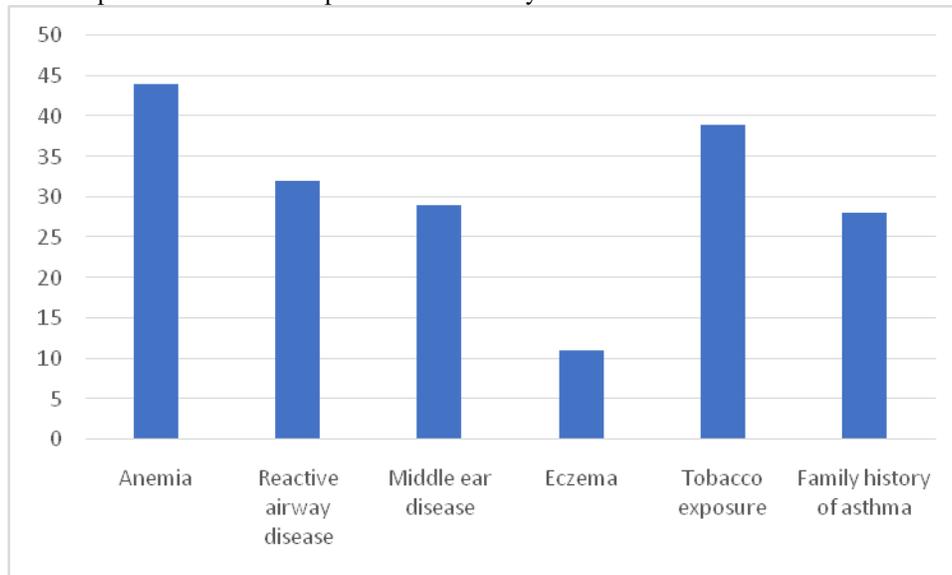
**RESULTS:**

A total of 80 patients were selected for the study. Table 1 shows the past medical history and frequency of patients in the study. We observed that 44 patients had history of anemia, 32 patients had history of reactive airway disease, 29 patients had the history of middle ear disease, 11 had history of eczema, 39 had history of tobacco exposure and 28 patients had family history of asthma. Table 2 shows the frequency of common symptoms experienced by the patients. We observed that nasal obstruction was experienced by 39 patients, congestion by 42 patients, cough by 34 patients and rhinorrhea by 72 patients. The results on comparison were observed to be statistically non-significant (p>0.05).

**Table 1:** Past medical history and frequency of patients

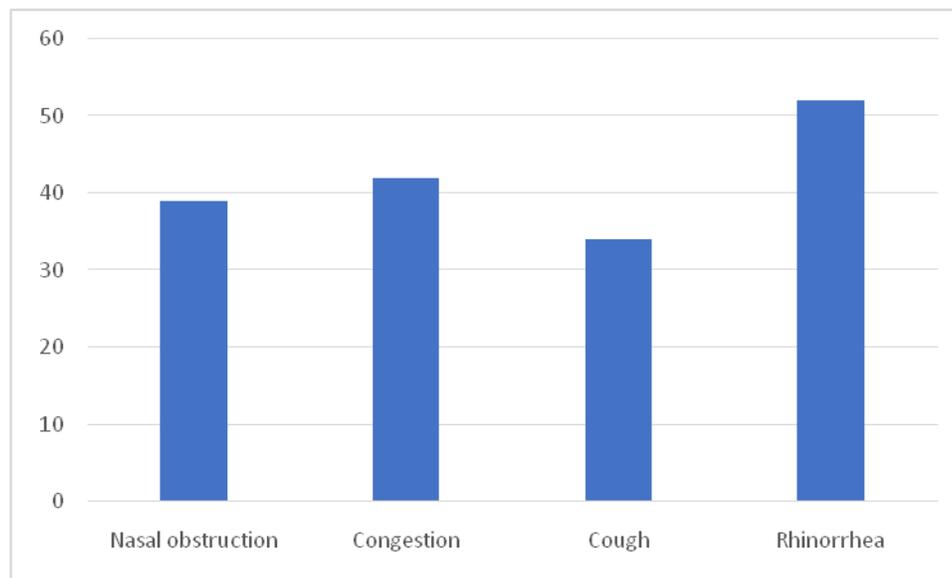
Past medical history	No. of patients	p-value
Anemia	44	0.59
Reactive airway disease	32	
Middle ear disease	29	
Eczema	11	
Tobacco exposure	39	
Family history of asthma	28	

**Figure 1:** Number of patients with various past medical history



**Table 2:** Frequency of common symptoms experienced by the patients

Common symptoms	No. of patients	p-value
Nasal obstruction	39	0.88
Congestion	42	
Cough	34	
Rhinorrhea	72	

**Figure 2:** Frequency of common symptoms in patients**DISCUSSION:**

In the present study, we retrospectively analyzed patients with chronic rhinosinusitis visiting in hospital. We observed that majority of patients had history of reactive airway disease. Rhinorrhea was the most common symptoms experienced by 72% of patients. But the results were statistically non-significant. The results were compared with previous studies and results were consistent with previous studies. Iseh KR et al assessed the clinical pattern and outcome of conventional management measures of chronic rhinosinusitis. All new patients with the diagnosis of rhinosinusitis over a 2-year period from July 1999 to July 2001 were analyzed for clinical features, conventional radiological findings, and treatment modalities over a period of 3 years follow up. There were 195 (11.7%) new cases of rhinosinusitis out of a total number of 1661 patients seen over the period under review. Only 146 case notes were accessible for the study. Eighty-four (57.5%) were males and 62 (42.5%) were females. The main clinical symptoms and signs were nasal discharge or rhinorrhea (84.9%), nasal obstruction (24.7%), epistaxis (22.0%), and sneezing (20.6%). The duration of symptoms ranged from few days to about 10 years with 24 (16.4%) being acute cases while 122 (83.6%) were chronic cases giving a prevalence of 1.4% and 7.3%, respectively. Maxillary sinus (58.9%) was the commonest sinus involved. More than one sinus involvement accounted for 37.7% of the cases. Infective causes accounted for 67.1% of cases followed by allergy (28.8%). Mode of treatment were medical (86.3%), and conventional surgery was carried out in 13.7% of the cases for either failed medical treatment or associated complications. Facial

paraesthesia along the sites of surgery was the commonest complications, otherwise the outcome of treatment was excellent. They concluded that rhinosinusitis should be managed medically first before recourse to surgical measures in carefully selected cases. Endoscopic sinonasal surgery is most desirable in keeping with current global trends of treatment of rhinosinusitis but where facilities do not exist, conventional surgical measures may be used. Soontrapa P et al determined the clinicopathologic findings of invasive and non-invasive fungal rhinosinusitis and compared the features of the two diseases. The medical records of patients with invasive and noninvasive fungal rhinosinusitis at Ramathibodi Hospital between July 1999 and June 2009 were analyzed. The study included 43 cases of invasive fungal rhinosinusitis and 68 cases of non-invasive fungal rhinosinusitis. There were 44 male, and 67 female patients. The mean age at diagnosis was 54.6 years (range: 5 to 86 years). A total of 70 (63.1%) were attributed to aspergillosis, 8 (7.2%) to candidiasis, 6 (5.4%) to zygomycosis, 4 (3.6%) to phaeohyphomycosis, 1 (0.9%) to pseudallescheriasis, 1 (0.9%) to entomophthoromycosis and 21 (18.9%) to nonspecific fungi. Cultures from sinonasal tissues were positive for fungus in 37 of 87 cases (42.5%). The clinical presentations of fungal rhinosinusitis included nasal stuffiness (27.9%), nasal discharge (27.9%), facial pain (27.9%), fever (24.3%) and headache (19.8%). One-fifth of cases had an underlying hematologic malignancy. They concluded that invasive fungal rhinosinusitis is significantly associated with hematologic malignancy and neutropenia.<sup>7,8</sup>

da Lilly-Tariah OB et al evaluated the symptoms, signs and types of chronic simple rhino-sinusitis. All the

patients had symptoms of more than 8 weeks duration. Only patients with symptoms indicative of chronic rhino-sinusitis were included in the study. All the patients had plain x-rays of the paranasal sinuses done and a radiologist reported such. One hundred and fifteen patients were studied. The male to female ratio was 1:1.4 age range 15 years to 70 years. The mean duration of symptoms was 32.03 months. Rhinorrhoea 100%, stuffy nose 97.4%, sneezing 67.6%, anosmia 54.8% and headache 54.8% were the common symptoms while engorged inferior turbinates 79.1%, anterior nasal discharge 63.5% and postnasal discharge 39.1% were the common findings on examination. The clinical diagnosis was chronic infective sinusitis 72.7%, vasomotor rhinitis 17.4% and allergic rhinitis 10.4%. Engorged turbinate was the commonest radiological comment. It was concluded that chronic infective rhinosinusitis is the commonest type of chronic rhinosinusitis seen in this study. Shivakumar T et al evaluated how functional endoscopic sinus surgery (FESS) modifies patients symptom profile and to also confirm that FESS is the modality of treatment in patients with refractory CRS. The study was retrospective analysis. 105 patients with symptoms of CRS were included in the study (between August 2006 to July 2009). Patients were assessed for CRS symptoms preoperatively and postoperatively using grading symptoms. Leading symptom of CRS was nasal obstruction followed by headache. Furthermore patients reported of anosmia, facial pressure, postnasal drip, purulent nasal discharge, halitosis, dental pain, cough, earache. None of the patients had fever as their complaint. After a postoperative follow up of 6 months there was improvement in the symptoms. All minor symptoms had 100% improvement. Nasal obstruction responded best, next followed by. An overall improvement of 86.66% was recorded. The restriction of quality of life in patients with CRS is mainly caused by these symptoms, which can be improved in excellent fashion by FESS in majority of the patients.<sup>9, 10</sup>

#### CONCLUSION:

Within the limitations of the study we conclude that the most common symptom experienced by patients was rhinorrhea and the most common past medical history of the patients was reactive airway disease.

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