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ORIGINAL ARTICLE

Assessment of common signs and symptoms in patients with chronic rhinosinusitis visiting hospital: A retrospective study

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***ABSTRACT*:**
Background: Chronic rhinosinusitis (CRS) is characterized by chronic inflammation of the sinonasal mucosa and is clinically associated with sinus pressure, nasal congestion, rhinorrhea, and a decreased sense of smell persisting for greater than 12 weeks. **Aim of the study:** To retrospectively assess common signs and symptoms in patients with chronic rhinosinusitis visiting hospital. **Materials and methods:** Medical records of 100 patients with confirmed diagnosis of chronic rhinositis were reviewed. The information about 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:** Results showed that shows the frequency of patients with various past medical histories. We observed that 59 patients had history of anemia, 41 patients had history of reactive airway disease, 34 patients had the history of middle ear disease, 19 had history of eczema, 19 had history of tobacco exposure and 32 patients had family history of asthma. **Conclusion**: Rhinorrhea is the most common symptom experienced by patients with chronic rhinosinusitis and the most common past medical history of the patients was reactive airway disease.
Key words: Rhinosinusitis, sinus, nasal mucosa inflammation.

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INTRODUCTION:

Chronic rhinosinusitis (CRS) is characterized by chronic inflammation of the sinonasal mucosa and is clinically associated with sinus pressure, nasal congestion, rhinorrhea, and a decreased sense of smell persisting for greater than 12 weeks.[1,2] Generally, symptoms of CRS interfere with work, leisure and sleep, disrupting the patient's day-to-day life. This may significantly impact the related quality of life (HRQoL) of these patients[3]. Moreover, the QoL scores of CRS patients are significantly lower in comparison with the quality of life scores in other common chronic diseases such as congestive heart failure, angina, chronic obstructive pulmonary disease and back pain. CRS patients in India make repeated visits to the OPD clinics and consume significant health worker time. The pathogenesis of CRS is multifactorial with infectious, genetic and environmental factors all playing a role in the disease process.[4, 5] Yet, the exact contribution of each of these factors is unclear. Infections associated with CRS are typically viral or bacterial, but in some cases may be fungal.[6]Hence, the present study was conductedto retrospectively assess common signs and symptoms in patients with chronic rhinosinusitis visiting hospital.

MATERIALS AND METHODS:

The study was conducted in the Department of ENT of Hind Institute of Medical Sciences, Safedabad, Barabanki UP. The ethical clearance for study protocol was obtained from ethical committee of the institution before starting the study. Medical records of 100 patients with confirmed diagnosis of chronic rhinositis were reviewed. The information about 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 rhino sinusitis 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 11.0 for windows. Chi-square and Student's t-test were used for checking the significance of the data. A p-value of 0.05 and lesser was defined to be statistical significant.

RESULTS:

A total of 100 patients were selected for the study. Table 1 shows the frequency of patients with various past medical histories. We observed that 59 patients had history of anemia, 41 patients had history of reactive airway disease, 34 patients had the history of middle ear disease, 19 had history of eczema, 19 had history of tobacco exposure and 32 patients had family history of asthma. Table 2 shows the most common symptoms experienced by chronic rhinosinusitis patients. We observed that nasal obstruction was experienced by 49 patients, congestion by 36 patients, cough by 44 patients and rhinorrhea by 82 patients. The results on comparison were observed to be statistically non-significant (p>0.05).

Table 1: Frequency of patients with various past medical histories

Past medical history	No. of patients	p-value
Anemia	59	0.32
Reactive airway disease	41	
Middle ear disease	34	
Eczema	19	
Tobacco exposure	19	
Family history of asthma	32	

Fig 1: Past medical history in patients with chronic rhinosinusitis

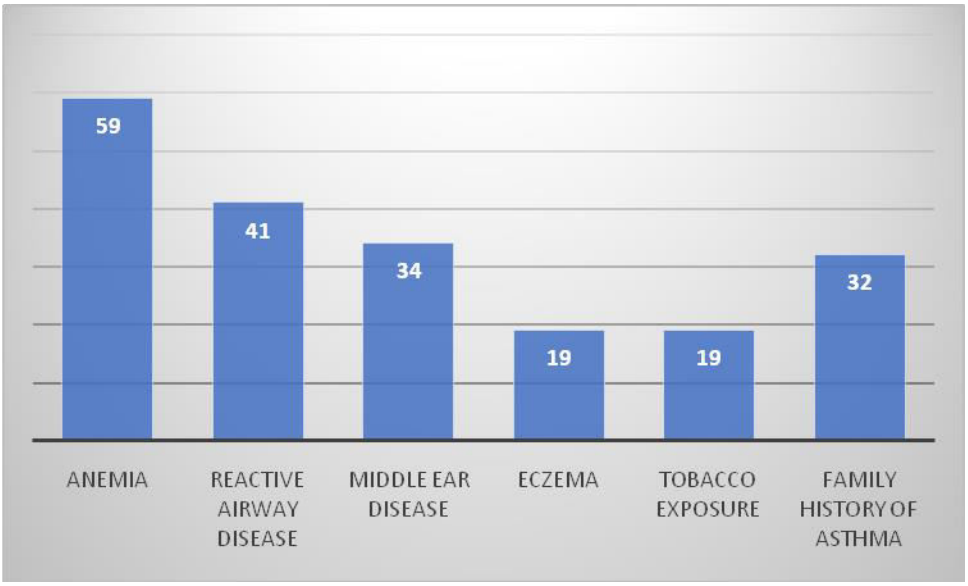
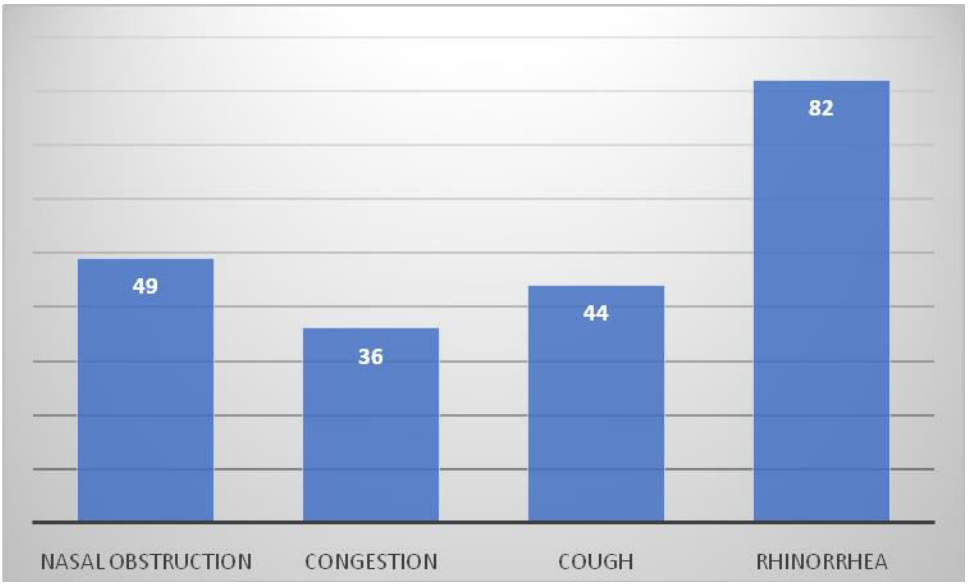


Table 2: Most common symptoms experienced by chronic rhinosinusitis patients

Common symptoms	No. of patients	p-value
Nasal obstruction	49	0.77
Congestion	36	
Cough	44	
Rhinorrhea	82	

Fig 2: Common symptoms experienced by chronic rhinosinusitis 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. Wensing M et al determined the relationship between functional status and health problems, age and comorbidity in primary care patients. Patients from 60 general practitioners who visited their general practitioner were recruited and asked to complete a written questionnaire, including a list of 25 health problems and the SF-36 to measure functional status. The response rate was 67% (n = 4,112). Poorer functional status which was associated with increased age (except for vitality) and increased co-morbidity. Patients with asthma/ bronchitis/COPD, severe heart disease/infarction, chronic backpain, arthrosis of knees, hips or hands, or an 'other disease' had poorer scores on at least five dimensions of functional status. Patients with hypertension, diabetes mellitus or cancer did not differ from patients without these conditions on more than one dimension of functional status. In the multiple regression analysis age, had a negative effect on functional status (standardised beta-coefficients between -0.03 and -0.34) except for vitality. Co-morbidity had a negative effect on physical role constraints (-0.15) and bodily pain (-0.09). All health problems had effects on dimensions of functional status (coefficients between -0.04 and -0.13). General health and physical dimensions of functional status were better predicted by health problems, age and co-morbidity (between 6.4 and 16.5% of variation explained) than mental dimensions of functional status (between 1.1 and 3.2%). They concluded that higher age was a predictor of poorer functional status, but there was little evidence for an independent effect of co-morbidity on functional status. Health problems had differential impact on functional status among primary care patients. Chung SD et al investigated differences in the utilization of healthcare services between subjects with CRS and comparison subjects using Taiwan's National Health Insurance database. In total, 5,849 CRS subjects and 17,547 selected comparison subjects were included in this study. We evaluated healthcare resource utilization in a 1-year period. Variables of healthcare resource utilization included the following: numbers of outpatient visits and inpatient days, and the mean costs of outpatient and inpatient treatment. We also divided healthcare resource utilization into ear, nose, and throat (ENT) and non-ENT services. On the utilization of ENT services, CRS subjects had significantly more outpatient visits and significantly higher outpatient costs than comparison subjects. As for the use and costs of all healthcare services, CRS subjects had significantly more outpatient visits and significantly higher outpatient and total costs than comparison subjects. Namely, on average, CRS subjects had 152% more outpatient visits and 139% higher total costs than comparison subjects. This study found that subjects with CRS had significantly higher use of all healthcare services and costs than aged-matched controls.[7, 8]

Durr DG et al reviewed their experience with rhinosinusitis and its impact on health, as measured using a generic quality of life instrument, the Medical Outcome Study 36-Item Short-Form Health Survey (SF-36), in a selected patient population. One hundred and ten patients (divided

into three subgroups: recurrent acute rhinosinusitis, chronic rhinosinusitis, and nasal polyposis) completed the SF-36 survey on the day of the diagnostic visit in the outpatient sinus clinics of two hospitals. The scores of the SF-36, in chronic rhinosinusitis, are compared with the normative values of a healthy U.S. population showing statistically significant differences in seven of eight domains. A comparison of the scores of chronic rhinosinusitis with a U.S. study on chronic rhinosinusitis shows statistically significant differences in five of eight domains. A comparison of the scores in the three diagnostic subgroups shows a statistical significance in two domains: bodily pain and vitality are more affected in recurrent acute and chronic rhinosinusitis. They concluded that chronic rhinosinusitis affects the quality of life of patients with rhinosinusitis and represents an important health burden. Some differences are noted with the U.S. chronic rhinosinusitis population. Recurrent acute and chronic rhinosinusitis seem to have more impact on vitality and bodily pain than nasal polyposis. Bhattacharyya N determined incremental increases in health care expenditures and utilization associated with chronic rhinosinusitis (CRS). Patients with a reported diagnosis of CRS were extracted from the 2007 Medical Expenditure Panel Survey medical conditions file and linked to the consolidated expenditures file. The patients with CRS were then compared to patients without CRS to determine differences in health care utilization (office visits,emergency facility visits, and prescriptions filled), as well as differences in health care expenditures (total health care costs, office visit costs, prescription medication costs, and self-expenditures) by use of demographically adjusted and comorbidity-adjusted multivariate models. An estimated 11.1+/-0.48 million adult patients reported having CRS in 2007. The additional incremental health care utilizations associated with CRS relative to patients without CRS for office visits, emergency facility visits, and number of prescriptions filled were 3.45+/-0.42, 0.09+/-0.03, and 5.5+/-0.8, respectively. Similarly, additional health care expenditures associated with CRS for total health care expenses, office-based expenditures, prescription expenditures, and self-expenditures were $772+/-$300, $346+/-$130, $397+/-$88, and $90+/-$24, respectively. They concluded that chronic rhinosinusitis is associated with a substantial incremental increase in health care utilization and expenditures due to increases in office-based and prescription expenditures. The national health care costs of CRS remain very high, at an estimated $8.6 billion per year.[9,10]

CONCLUSION:

From the results of this study, this can be concluded that rhinorrhea is the most common symptom experienced by patients with chronic rhinosinusitis and the most common past medical history of the patients was reactive airway disease.

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