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Original Article

Retrospective Analysis of Patients with Chronic Rhinosinusitis Visited in Hospital: A Hospital Based Study

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***ABSTRACT*:**

Background: Adult chronic rhinosinusitis (CRS) is one of the most common health care problems for which an individual seeks medical care, resulting in high direct medical costs. **Aim of the study:** To retrospectively analyze patients with chronic rhinosinositis visiting in hospital. **Materials and methods:** The study was conducted in the department of General medicine of the Government D.B. General Hospital, Churu, Rajasthan, India. We reviewed the medical records of 50 patients with a clinical diagnosis of Chronic Rhinos sinusitis. All charts were reviewed and the information acquired. **Results:** A total of patients were selected for the study. We observed that 21 patients had history of anemia, 35 patients had history of reactive airway disease, 18 patients had the history of middle ear disease, 19 had history of eczema, 34 had history of tobacco exposure and 19 patients had family history of asthma. **Conclusion:** The most common symptom experienced by patients was rhinorrhea and the most common past medical history of the patients was reactive airway disease.

Keywords: Rhinosinositis, cough, asthma

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INTRODUCTION:

Chronic Rhinosinusitis in adults is in most guidelines defined as an inflammation of the nose and the paranasal sinuses characterised by at least 8-12 weeks of at least 2 symptoms, like nasal blockage/obstruction/congestion, nasal discharge (anterior/posterior nasal drip), facial pain/pressure and/or reduction or loss of smell and either endoscopic signs of disease or relevant CT scan changes.[1, 2] Confirmation of sinus disease using an objective measure is required because the symptoms can be nonspecific and mimicked by several disease entities (eg, upper respiratory tract infection, (allergic) rhinitis, migraine). Conversely, in the absence of symptoms, diagnosis of CRS based on radiology alone is not appropriate because of a high incidence of radiological anomalies on CT scans in normal individuals. Thus, the presence of symptoms plus an objective finding are necessary.[3] Addition of nasal endoscopy to symptom assessment substantially increased diagnostic accuracy in confirming the presence of CRS using sinus CT as the criterion standard. Adult chronic rhinosinusitis (CRS) is one of the most common health care problems for which an individual seeks medical care, resulting in high direct medical costs. Estimates suggests that CRS is more wide spread than arthritis and hypertension, with impacts on the quality of life, even in comparison to chronic debilitating diseases such as diabetes mellitus and congestive heart failure.[4] Furthermore, CRS not only causes significant physical symptoms but also results in substantial functional and emotional impairment. In the present day scenario functional endoscopic sinus surgery (FESS) is considered to be the surgical option in patients with chronic rhinosinusitis not responding to medical management.[5, 6] Hence, the present study was planned to retrospectively analyze patients with chronic rhinosinositis visiting in hospital.

MATERIALS AND METHODS:

The study was conducted in the department of General medicine of the Government D.B. General Hospital, Churu, Rajasthan, India. 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 50 patients with a clinical diagnosis of Chronic Rhinos sinusitis. 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 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 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 patients were selected for the study. Table 1 shows the past medical history and frequency of patients in the study. We observed that 21 patients had history of anemia, 35 patients had history of reactive airway disease, 18 patients had the history of middle ear disease, 19 had history of eczema, 34 had history of tobacco exposure and 19 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 21 patients, congestion by 31 patients, cough by 29 patients and rhinorrhea by all the patients. The results on comparison were observed to be statistically non-significant ($p>0.05$).

Table 1: Past medical history and frequncy of patients

Past medical history	No. of patients	p-value
Anemia	21	0.23
Reactive airway disease	35	
Middle ear disease	18	
Eczema	19	
Tobacco exposure	34	
Family history of asthma	19	

Figure 1: Past medical history and frequncy of patients

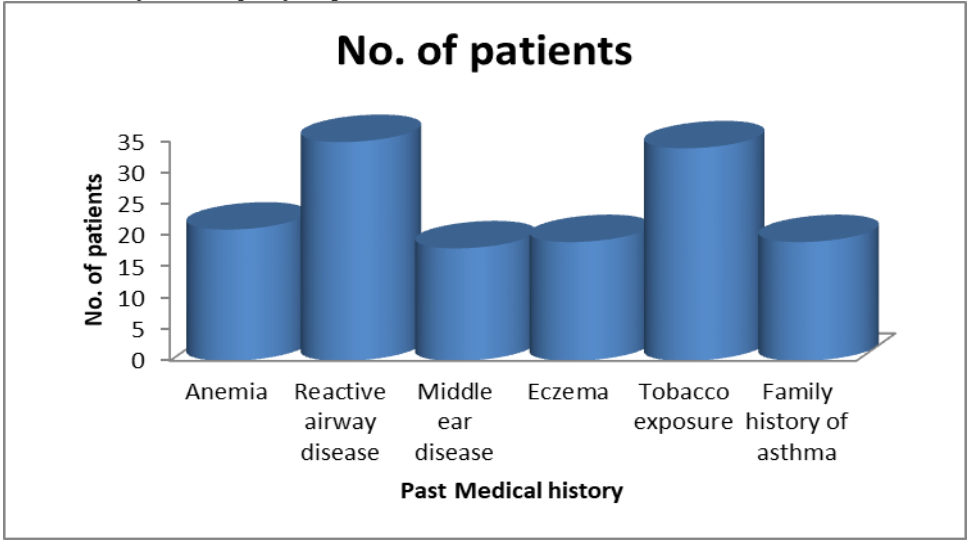
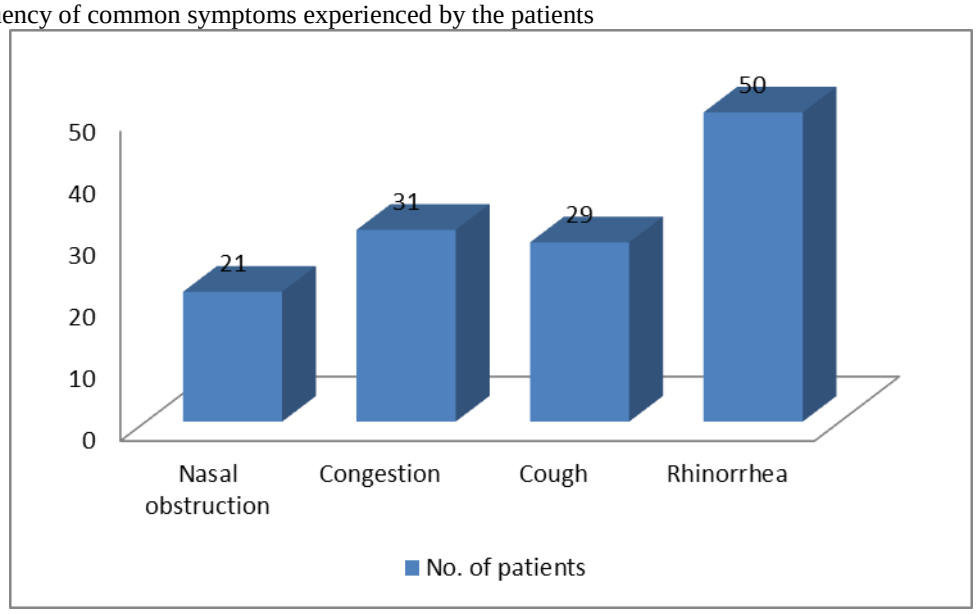


Table 2: Frequency of common symptoms experienced by the patients

Common symptoms	No. of patients	p-value
Nasal obstruction	21	0.21
Congestion	31	
Cough	29	
Rhinorrhea	50	

Figure 2: Frequency of common symptoms experienced by the patients



DISCUSSION:

In the present study we retrospectively analyzed patients with chronic rhinosinositis visiting in hospital. We observed that majority of patients had history of reactive airway disease. Rhinorrhea was the most common symptoms experienced by all the patients. But the results were statistically non-significant. The results were compared with previous studies and results were consistent with previous studies. 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). 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 followup 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.Goh LC et al evaluated the clinicopathological and mycological manifestations of fungal rhinosinusitis occurring in the TengkuAmpuanRahimah Hospital, in Klang, Malaysia, which has a tropical climate. Records of patients treated from 2009 to 2016 were analysed retrospectively. Data from the records were indexed based on age, gender, clinical presentations, symptom duration, clinical signs and mycological growth. Of 80 samples, 27 (33.75 per cent) had fungal growth. Sixteen patients were classified as having non-invasive fungal rhinosinusitis and 11 as having invasive fungal rhinosinusitis. The commonest clinical presentation was nasal polyposis in non-invasive fungal rhinosinusitis patients and ocular symptoms in invasive fungal rhinosinusitis patients. The commonest organism was aspergillus sp. in non-invasive fungal rhinosinusitis and mucorales in invasive fungal rhinosinusitis. They concluded that there is an almost equal distribution of both invasive and non-invasive fungal rhinosinusitis, as seen in some Asian countries. Invasive fungal rhinosinusitis, while slightly uncommon when compared to non-invasive fungal rhinosinusitis, is potentially life threatening, and may require early and extensive surgical debridement. The clinical presentation of nasal polyposis was often associated with non-invasive fungal rhinosinusitis, whereas ocular symptoms were more likely to be associated with invasive fungal rhinosinusitis.[7, 8] Abuzeid WM et al determined the efficacy of ethmoidectomy alone for the treatment of chronic frontal sinusitis. Adults with chronic rhinosinusitis prospectively enrolled in a multi-center study who demonstrated frontal sinusitis on computed tomography were divided into two groups: 1) endoscopic sinus surgery (ESS) incorporating ethmoidectomy, but excluding frontal sinusotomy; and 2) ESS incorporating frontal sinusotomy. The primary outcome was improvement in SNOT-22 scores. Secondary outcomes included endoscopic scores and use of corticosteroids and antibiotics. 196 cases undergoing frontal sinusotomy and 30 cases treated with ethmoidectomy without frontal sinusotomy were analyzed and were comparable demographically. The prevalence of nasal polyps, previous ESS, asthma, and aspirin intolerance was more common in the frontal sinusotomy group. Preoperative endoscopy and computed tomography scores were higher in

the frontal sinusotomy group. Postoperatively, both groups showed comparable SNOT-22 scores with worse endoscopy scores in the frontal sinusotomy group. Postoperative improvement in SNOT-22 total and subdomain scores was comparable between groups. Nasal endoscopy scores improved to a greater degree in the frontal sinusotomy group. Duration of postoperative topical steroid use was higher in the frontal sinusotomy group. Revision surgery was needed in 2.6% of frontal sinusotomy patients and 0% of patients without frontal sinusotomy. They concluded that the treatment of chronic frontal sinusitis through ethmoidectomy is a potential alternative to frontal sinusotomy achieving similar QOL improvements in patients manifesting less severe sinus disease.Gutiérrez C et al described the teamwork of otolaryngologists and bronchopulmonary specialists in patients with CF. They performed a descriptive, retrospective study over the last 17 years, which included 14 patients with CRS and CF attended at a private hospital. Of the patients, 64% were male and the median age was 23 years. The most frequent mutations found were ΔF508, M470 and R553. All of the patients with ΔF508 mutation had nasal polyps. 100% of the patients had clinical findings of CRS. All the patients had had endoscopic nasal surgery. The median number of endoscopic surgeries was 2. It was concluded that given the high prevalence of CRS in patients with CF, everyone should have a computed tomography scan of the PNS during the initial assessment, considering that sinus germs are the ones that colonise the lower airway. The otolaryngologist should be part of the CF team. Before receiving a lung transplant or in cases of chronic headache, endoscopic surgery should be performed in patients in whom medical treatment fails to clear the sinuses because this infection is the one that colonises the lower airway.[9, 10]

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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