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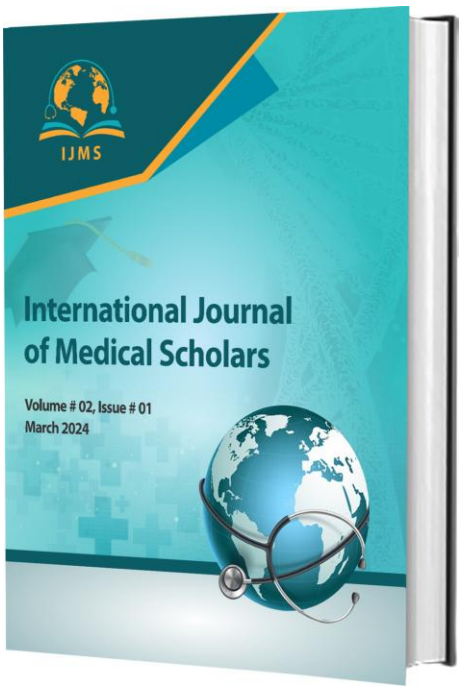

Frequency of Granulomatous Invasive Fungal Sinusitis in Patients with Clinical Suspicion of Chronic Fungal Rhinosinusitis

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Original Article

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ABSTRACT

Objective: *The aim is to assess the incidence of granulomatous invasive fungal sinusitis within the context of chronic fungal rhinosinusitis in the proposed case.*

Methods: *Of those, 45 patients agreed and 36 did not after the option was presented in the study. Frequency of invasive fungal sinusitis and demographic variables (described below) were collected by the principal investigator using data collection form specially prepared for this study. Quantitative variables, namely: disease duration, patient age in years were presented as measures of central tendency, means and standard deviation. Results: For qualitative data such as gender and granulomatous invasive fungal sinusitis count, we used categorical frequency table and percentage to present. Relations b/w these two variables were analysed with chi-square—the test seen. A P-value of 0. 05 and a P-value≥.03 were considered statistically significant. 05.*

Results: *Of hundred patients with clinical suspicion of CFRS, average age 42 years, males = females and selected on the basis of inclusion and exclusion criteria among which 81 were finally enrolled in the study. Of these for 40 patients diagnosed with granulomatous invasive fungal sinusitis (IGS) and 104 without the disease, as in Figure 1.*

***Conclusion*:** *In conclusion, the present investigation confirms that granulomatous invasive fungal sinusitis is not infrequent in patients clinically suspected to have CFRS.*

Keywords: *Frequency, Granulomatous, Sinusitis, Fungal, Rhinosinusitis*

1. INTRODUCTION

Rhinosinusitis (CRS) is an oft-diagnosed condition in patients who present to an otolaryngologist, with symptoms of congestion, anterior and posterior rhinorrhea, headaches, facial pain and anosmia. In recent days though it has been linked with chronic rhinosinusitis, but the association remains controversial till now. There are various conditions and super fine particles of fungi in the environ-ment which when colonisation, invasion leading to either invasive form or non-invasive form of fungal sinusitis depending on degree of immune compromise of the host. Fungal rhinosinusitis is a heterogeneous group divided into two main categories, based on their ability to penetrate the mucosal barrier (invasive and non invasive). The invasive form of the disease is divided into three categories: acute invasive, chronic invasion and granulomatous. Allergic fungal rhinosinusitis, fungal ball and fungi associated eosinophilic rhinosinusitis are:

Researches have revealed the occurrence of fungal infection varies from region to region. Primary fungal disease caused by NGM is usually insidious and manifests as chronic granulomatous fungal sinusitis, which in a majority of cases has been reported from the Indian subcontinent, Pakistan or Sudan. But still, if this is a region or race related situation then the answer will have to be sought in that domain. In the study by Challa S, prevalence of fungal rhinosinusitis included both acute/chronic forms of noninvasive and invasive types and found that overall prevalence was 45.7%, being 30% for granulomatous invasive fungal sinusitis, 23% allergic fungal sinusitis, 8% acute noninvasive (non-granulomatous), 1% chronic noninvasive (non-gtanulomatous), 15% chronic invasive (granulomatous) and persistent invasive in up to 10%. Eighty-seven percent suffered from chronic hepatitis, and 28.5% of surgeries were performed on acute fulminant cases. This disease may, in its most severe form, erode into the CNS or orbit and among granulomatous invasive fungal sinusitis (GIFS) cases could be confused easily.

What is known about the pathophysiology of granulomatous invasive fungal sinusitis and associated issues is there, but still not adequate due to less knowledge about this disease and general unawareness among common people. Thus, the main aim behind this work, to be held in retrospective method within a certain geographical area, is to reveal the ratio of granulomatous invasive fungal sinusitis amongst patients with severe fungal rhinosinusitis. Knowledge of this prevalence is important since we can then plan to spread the message at local and national level about what the disease actually looks like in humans. CAP can be prevented to some extent by exercising and undergoing a healthy lifestyle, however an increased awareness will lead to symptoms being detected early and medical consultation which could result in prompt treatment and limit the effect of the disease.

2. METHODOLOGY

This is a descriptive study conducted from 1stJanuary 2017 to 1stJuly, 2018 at the ENT Department, Nistar Hospital Multan i!..cab League of Hos:ital, Australia themesa. Base oil chrome method from tile hospital ethics committee. The sample size was decided by Challa S. et al. A 95% confidence interval, a margin of error of 10%, and a 30% observed spread were measured. The type of sample used was a non-random probability method for calculating the sample size (n) [5] with 17 patients excluded from the trauma cases for a total of 81 eligible trauma cases that were agreed to they will be involved.

Samples, either obtained during an excision under local anaesthesia or from the nasal growths by sinus otomicroscopy biopsy performed in consultation with a surgeon having more than 5 years experience of working as faculty. The tissue specimens were then submitted to a pathologist for creating slides in order to determine the presence of fungal sinusitis. Data collection: The questionnaire included questions regarding the demographic characteristics and frequency of granulomatous invasive fungal sinusitis was designed by a research that was administered. We carried out manual sorting and analysis of the qualitative data collected, while statistical software SPSS version 23.0 was utilized for data analysis, such as disease duration and patient age, including mean and standard deviations calculated for variables; in addition to details on gender and frequency of granulomatous IFIS which were presented in summaries of qualitative data.

3. RESULTS

Inclusion Criteria: Patients with clinical suspicion of CFRSS (suggestive history along with brownish black nails and presence of longitudinal melanonychia) were included in the studyExclusion Criteria: In this study, it was detected that granulomatous invasive fungal sinusitis occurred in 24 of the 81 patients (29. Of the 57 patients in this study group, none had any involvement of granulomatous invasive fungal sinusitis (70.6% as shown in figure I below). 4% of the study population. Six patients (66.7%) with granulomatous invasive fungal sinusitis were discharged out of the ten patients who presented to our emergency department. 7%) were male while 8 (33. 3%) were female. The mean age of the patients was thirty three years. 87 ± 2. An additional three quarters of all patients to be obediently dead in 7.15 ± 1.49 ××

Among the patients without granulomatous invasive fungal sinusitis the male patients were 35 (61. 4%) and the female patients were 22 (38. 6%). It Was Therefore Established That The Mean Age For These Participants Was Thirty Four. 42 ± 2. , The peak age of development was 71 years, —and the average length of the disease lasted 10. 78 ± 4. 12 weeks. The age distribution was as follows: from this therefore thirty two patients were below twenty years of age while twenty five patients were aged between twenty years and thirty five years and no patients was found aged between thirty six years and fifty years. Duration of the disease was ranged between 7 – 12 weeks for 49 (86%) patients and greater than 12 weeks for 8 (14%) patients. A history of diabetes was found in 5 patients (8. 8%). Of these, twenty five, (43. 9%) were residing in rural areas while 32, (56. 1%) were from the urban setting. Patient socio economic status was classified as poor 26, middle income 25 and rich 6 patients.

Disease duration ($t = 2.112$, $p = 0.046$), history of diabetes ($t = 2.944$, $p = 0.016$) and place of residence ($t = 2.0$, $P \leq .05$) showed significantly different among the respondents as indicated in Table IIB below Table II.

Figure I

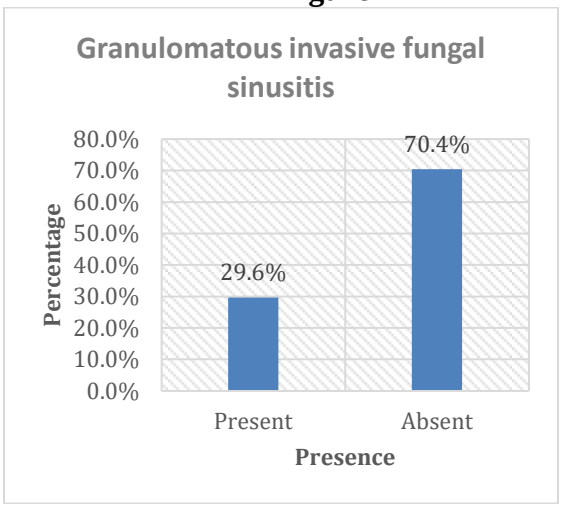

Table I
Demographic characteristics across the different groups

Variable	Granulomatous invasive fungal sinusitis		
Gender	**Present (n=24)**	**Absent (n=57)**	**P-value**
Male	n=16 (66.7%)	n=35 (61.4%)	0.654
Female	n=8 (33.3%)	n=22 (38.6%)	
Age (years)	33.87±2.84	34.42±2.71	0.417
20-35 years	n=16 (66.7%)	n=32 (56.1%)	0.379
36-50 years	n=8 (33.3%)	n=25 (43.9%)	
Duration of Disease (weeks)	10.47±3.99	10.78±4.12	0.690
7-12 weeks	n=16 (66.7%)	n=49 (86%)	0.046
More than 12 weeks	n=8 (33.3%)	n=8 (14%)	
Diabetes History	n=8 (33.3%)	n=5 (8.8%)	0.016
Residential area			
Rural	n=16 (66.7%)	n=25 (43.9%)	0.061
Urban	n=8 (33.3%)	n=32 (56.1%)	
Socio-economic status			
Poor	n=10 (41.7%)	n=26 (45.6%)	0.234
Middle income	n=8 (33.3%)	n=25 (43.9%)	
Rich	n=6 (25%)	n=6 (10.5%)	

4. DISCUSSION

These are the plants that can blossom at any random time, anywhere, in fluctuation and stability. Fungi, depending on the environment and host can be saprophytic or invasivemyoses which are quite deadly. There has been a high mortality and morbidity in the last years due to increasing frequency of fungal infections. This might be because of higher antibiotic and chemotherapeutic drug usage accompanied by immunosuppression therapies, critical care measures, and more immune compromised states. In the current literature, fungi can also involve paranasal sinuses and nasal cavity in both immunocompromised as well as immunocompetent patients which can be detected on examination. Fungal rhinosinusitis is an increasingly recognized problem that presents with clinically evident manifestations and quality-of-life-impairing symptoms as well as significant morbidity. Fungal rhinosinusitis is classified into five clinical types following diagnosis [8]: количество — systemic mycoses, sinusi задача/maxillary sinus invasive fungal rhinosinusitis (IFRS), chronic^*** noninvasive fu diseased the[OR apparently normal] with appropriate volume expander.

It could be classified into two histopathological forms: granulomatous and non-granulomatous, that are generally un-subtype dependant [9]. The therapeutic approach is multimodal and includes multiple surgeries along with a combination of different antifungals however recurrences are inevitable. Methods: A total of 81 patients who were diagnosed to have chronic fungal sinusitis clinically. Distribution of gender: The skews towards male to a very large extend was in accordance with early published data-analysis (^)(. Similar to the observation by Navya et al., this male-only gender distribution. and Montone et al. and Krishnan et al. Karthikayen et al. In these only 23.2% of the female; whereas Challa S. et al had reported chronic fungal rhinosinusitis to be more common in male as compared to their counterpart [12]. [6] Not only.

5. CONCLUSION

Our study results show that granulomatous invasive fungal sinusitis is a common in patients with clinical suspicion of chronic Invasive Fungal Rhinosinusitis.

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