



QUALITY OF LIFE OF ADULT SUBJECTS WITH CHRONIC RHINOSINUSITIS IN SOUTHWESTERN NIGERIA.

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ABSTRACT

Background: Chronic rhinosinusitis (CRS) is defined as an inflammatory disorder of the paranasal sinuses persisting for 12 weeks or longer and almost always accompanied by concurrent nasal airway inflammation. The symptoms of CRS are diverse, difficult to qualify and often refractory. This combination greatly increases the likelihood of the disease affecting the quality of life of individuals who suffer from it. **Objectives:**

- To determine the severity score of individual symptoms of CRS
- To determine the effect of CRS on quality of life using sinonasal outcome test score (SNOT-22)

Methods

This was a prospective cross sectional study of Fifty- two consecutive adult patients with a clinical and radiologically confirmed diagnosis of CRS. **Results:** Age of patients ranged from 19 – 91 years. Male to female ratio was 1:1.26. The symptom spectrum of CRS ranged from need to blow nose (n=42) to dizziness (n=18). The three most severe symptoms of CRS were postnasal dripping, nasal blockage/congestion and need to blow nose. The mean total SNOT-22 score in this study was 38.67. **Conclusion:** Postnasal dripping, nasal blockage and need to blow nose are the most severe symptoms of CRS. The quality of life of adult patients with CRS is significantly decreased as a result of the disease.

KEYWORDS: Chronic rhinosinusitis, Quality of life, Sinonasal outcome score - 22, Nigeria.

INTRODUCTION

Quality of life (QoL) assessment is a broad concept that incorporates all aspects of life (health, social, psychological, emotional, physical and financial) and has been used in a variety of disciplines including medical science.^[1] It is a unique personal experience that reflects not only health status but other factors in a patient's life such as disabilities and impairment which can only be described by each individual patient.^[2, 3] A part of the overall quality of life is health related quality of life (HRQoL) which is influenced by the health of patients and can be changed through treatment. Chronic rhinosinusitis (CRS); defined as an inflammatory disorder of the paranasal sinuses persisting for 12 weeks or longer and almost always accompanied by concurrent nasal airway inflammation^[4, 5], is a disease that may strongly impact the quality of a person's life.^[6, 7] Most cases of CRS are continuation of unresolved acute sinusitis^[8] with a multifactorial aetiology, as different inflammatory mechanisms that can lead to the development of the disease.^[8,9] Risk factors include allergic rhinitis, non-allergic rhinitis, intubation, smoking, anatomic obstruction in the osteomeatal complex.^[8, 10]

The diagnosis of CRS is made with a combination of symptoms and signs, radiological photographs and endoscopy findings. The major symptoms and sign being nasal obstruction, facial discomfort, nasal discharge, distortion of smell and minor symptoms and sign includes headache, fever fatigue, dental pain, cough and ear pain.^[11,12]

Since the symptoms of CRS are varied and not easy to quantify^[13], health related quality of life (HRQoL) has recently gained awareness as an outcome measure for intervention in CRS, using various questionnaire instruments. The most adequate of these instruments for CRS is SNOT-22.^[14-20]

This is a specific questionnaire to analyze QoL in sinonasal diseases. It includes assessment of nasal, paranasal, and psychological symptoms, and those associated with sleep. It is a questionnaire which is broadly used in literature. It primarily assesses chronic rhinosinusitis and is considered the most adequate questionnaire to assess the severity of CRS as well as the quality of life of patients with the disease.^[6,21] Additional questions regarding nasal obstruction, and disorders of smell were added to SNOT-20 to produce the SNOT-22. The added questions are very significant because problems with olfaction and nasal obstruction are directly related to the QoL of patients with CRS and therapeutic interventions and are designed to positively influence these two annoying symptoms.^[6, 22-27] The Royal College of

Surgeons of England used SNOT-22 in a National Comparative Audit of Survey for nasal polyposis and CRS. Data from this study came from 3128 patients using questionnaire SNOT-22; the questionnaire was found easy to use and provided good discriminant validity.^[28] In 2009, the SNOT-22 with good cronbach's alpha value (0.9) was validated and recommended for routine clinical practice.^[6] The total sum of the questionnaire score numerically indicates the impact of the disease on the QoL of the individual.^[21] The higher the SNOT-22 score, the greater the impact of the disease on QoL.^[6]

The burden of affected individuals in terms of decreased productivity, absenteeism from the workplace and disruption of private lives^[29], has given rise to interests on how otorhinolaryngologists can contribute to the management of CRS and improve the quality of life of sufferers; especially in Sub-Saharan Africa where documentation of this problem is sparse. This study was therefore designed to determine the symptom characteristics of CRS and its effect on the quality of life of adult patients with the disease.

METHODS

This was a prospective cross-sectional study of adult patients diagnosed with CRS presenting at the Otorhinolaryngology clinic of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, a tertiary institution in the southwestern region of Nigeria over a period of one year (April 2014 to March 2015).

Ethical clearance was sought and obtained for this work from the hospital ethics review committee after which a written informed consent was obtained from individual participants in this study.

Inclusion criteria

- Adult patients from 18years of age and above.
- Patients who had not had prior medical or surgical intervention at a medical center before presentation
- Patients with clinical and radiological confirmation of CRS.

Exclusion criteria

- Patients who refused to participate in the study.
- Previous medical/surgical treatment at a medical center prior to presentation

The patients were enrolled as they presented and were attended to at the outpatients' clinic. After the preliminary assessment with regards to the inclusion and exclusion criteria, a thorough clinical history was obtained and physical examination (ear, nose, throat, head and neck) was done. This was aimed at making a clinical diagnosis of CRS based on symptoms and signs of the diagnostic criteria for CRS.^[30] Sino-nasal outcome test score-22 (SNOT-22) questionnaire, the most adequate instrument to assess the quality of life in chronic rhinosinusitis^[31-33] was then administered to each patient. This was to estimate the individual and overall symptom severity score and determine the effect of CRS on quality of life. The maximum score obtainable from the SNOT-22 questionnaire was one hundred and ten (110) and the minimum score was zero (0). A total SNOT-22 score of ≤ 9.3 was regarded as normal and indicative of a normal QoL.^[6]

The maximum score for each symptom in the SNOT-22 questionnaire was five (5) which represented maximum severity and the minimum score was zero (0) which represented the least severity. Thus the mean severity score for each symptom of CRS on the SNOT-22 questionnaire was calculated to determine their individual severity score.

Upon completion of the questionnaire, each patient was asked if these symptoms had affected their quality of life.

RESULTS

Fifty-two adult patients with CRS were recruited into this study, 23(44.2%) males and 29(55.8%) females, giving a male to female ratio of 1:1.26. Their ages ranged from 19 – 91 years (mean 45.0 ± 5.5).

The symptom spectrum of CRS ranged from: Need to blow nose; seen in 42(80.8%) of patients to Cough; seen in 24(46.2%) of patients.

Postnasal discharge (dripping at the back of the nose) had the highest mean severity score among patients at 3.04 ± 0.14 . Dizziness was the symptom with the least mean severity score at 0.71 ± 0.31 . The rhinological symptom domain had the highest severity score distribution and mean total score (2.39 ± 0.44) followed by the psychological symptom domain (1.42 ± 0.43). The symptom domain titled "others" had the least mean severity score of 1.06 ± 0.40 as shown in Table 1.

Table 1: Mean symptom severity score of CRS (Peak score = 5)

Symptom Domain	Sino-Nasal Outcome test	Number of patient	Mean severity score	STD severity score
Rhinological Symptoms	Need to blow nose	42	2.17±0.41	1.52
	Sneezing	41	2.21±0.43	1.59
	RunnyNose	41	2.46±0.45	1.66
	Post nasal discharge (dripping at back of nose)	46	3.04±0.41	1.53
	Thick nasal discharge	41	2.29±0.40	1.65
	Sense of taste/smell	30	1.67±0.49	1.81
	Blockage /congestion of nose	45	2.88±0.49	1.79
Total			2.39±0.44	1.62
Ear/facial symptoms	Ear fullness	31	1.15±0.32	1.19
	Dizziness	18	.71±0.31	1.14
	Ear pain/pressure	25	.88±0.64	1.20
	Facial pain/pressure	35	2.13±0.48	1.77
Total			1.21±0.44	1.32
Sleep symptoms	Difficulty falling asleep	31	2.00±0.52	1.92
	Waking up at night	35	1.98±0.46	1.67
	Lackof a good night's sleep	31	1.69±0.45	1.66
	Waking up tired	32	1.79±0.47	1.75
Total			1.24±0.48	1.75
Psychological symptoms	Fatigue during the day	31	1.42±0.40	1.47
	Reduced productivity	28	1.40±0.42	1.58
	Reduced concentration	25	1.23±0.41	1.52
	Frustrated /restless/irritable	28	1.40±0.42	1.55
	Sad	30	1.56±0.45	1.66
	Embarrassed	28	1.52±0.45	1.69
Total			1.42±0.43	1.58
Others	Cough	24	1.06±0.40	1.49

The mean total SNOT-22 of the patients in this study was 38.67 with standard deviation of 17.20. The median was 41.50, mode was 42.00, minimum score was 4.0 and maximum score was 76.0. The total SNOT-22 score was not skewed but approximately normally distributed. 83% (n=43) of patients in this study expressed dissatisfaction with their QoL as opposed to 17% (n=9) who expressed satisfaction.

DISCUSSION

Although the symptoms of CRS are not life threatening, they can be disabling and impact negatively on diurnal and nocturnal activities ultimately increasing the likelihood of impairment of quality of life in individuals with the disease. Thus estimating the overall and individual symptom severity of chronic rhinosinusitis becomes relevant as it aids the

otolaryngologist in making a diagnosis, choosing an appropriate treatment plan as well as providing a means of evaluating the success of therapy.

Bhattacharyya *et al*^[34] reported the symptom severity of chronic rhinosinusitis in the order of decreasing severity scores. In this order, nasal blockage was the most severe symptom followed by nasal congestion and nasal discharge. Our study found this order slightly reversed as postnasal dripping was the most severe symptom of CRS followed by nasal blockage/congestion as a single symptom. The third most severe symptom of CRS was runny nose (anterior nasal discharge). Abdalla *et al*^[35] working in England and using a similar instrument (SNOT-22) as the index study, reported nasal blockage/congestion as the most severe symptom of CRS followed by altered taste/smell and need to blow nose.

Hopkins *et al*^[6] reported the mean total SNOT-22 score in healthy individual without CRS to be 9.3. Eduardo *et al*^[36] reported a mean total SNOT-22 score of 11.42 as normal for individuals without CRS. Gilletet *al*^[37] advocated the use of the median score as the normality threshold instead of the mean, since SNOT-22 values in healthy adult patients do not tend to normal distribution. They therefore considered 7 as the normality threshold for the SNOT-22.

This study found the mean SNOT-22 score to be 38.67 and the median score to be 41.50. This was a staggering three - fold increase in the normally acceptable SNOT-22 score in individuals without CRS. Thus objectively speaking, this study found CRS does have a negative impact on the lives of these individuals. But a questioned persisted; and this was – do patients with CRS agree that their lives have been negatively affected by the disease?

Though Dotlicet *al*^[38] reported a negative impact of CRS on QoL, he noted that majority of his subjects expressed satisfaction with their QoL. This outcome is different from that of our study as over 80% of patients corroborated the questionnaire scoring of their disease by expressing dissatisfaction with their QoL, saying the disease does impair their QoL. In conclusion, CRS significantly decreases the QoL of adult patients who suffer from the disease.

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