ORIGINAL RESEARCH PAPER

Otorhinolaryngology

QUALITY OF LIFE AFTER ENDOSCOPIC SINUS SURGERY : KEY FACTORS AND PATIENT EXPERIENCES

KEY WORDS:

Dr.Chinmayi	Junior Resident, Sapthagiri Institute Of Medical Science And Research Centre, Bengaluru
Dr Deepika Pratap	Assistant professor, Sapthagiri Institute Of Medical Science And Research Centre, Bengaluru
Dr Almas Ambreen	Junior Resident, Sapthagiri Institute Of Medical Science And Research Centre, Bengaluru
Dr Rashmi Shetty	Junior resident, Sapthagiri Institute Of Medical Science And Research Centre ,Bengaluru
Dr Aiswarya Suresh	Junior Resident, Sapthagiri Institute of Medical Sciences and Research Centre Bengaluru
Dr Gagana Sparshitha S	Junior resident, Sapthagiri institute of medical sciences and Research Centre Bengaluru
Dr Sachin Kumar E M	Junior Resident,Sapthagiri institute of medical sciences and Research Centre Bengaluru

ABSTRACT

The EuroQol 5-Dimension (EQ-5D) is a general health survey that is widely used to determine the Quality of life and can be directly converted into health utility values (HUV) . The aim of our study was to compare the quality of life among chronic Rhinosinusitis patients (CRS) before and after Endoscopic sinus surgery using EQ-5D Questionnaire. Out of 90 patients included in our study , 57 were male and 33 were females and mean age of study group was 32.01. Patients were asked to fill in the Questionnaire pre and post operatively . There was a significant improvement in pain / discomfort, usual activities and anxiety/ depression also reduced , hence quality of life improved after endoscopic sinus surgery.P value of the study was about 0.03 ($p< 0.05$) and the study was statistically significant.

INTRODUCTION

Chronic rhinosinusitis (CRS) is an inflammatory disease of the paranasal sinuses and nasal mucosa that impairs quality of life, and has been demonstrated with CRS-specific patient-reported outcome measures (PROMs) including the 22-item Sino-Nasal Outcome Test (SNOT-22) and the Rhinosinusitis Disability Index (RDSI). [1,2] These tools are frequently implemented to assess the efficacy of medical and surgical management on CRS.While useful in evaluating CRS symptomatology, these instruments do not assess general health-related quality of life, thus limiting our ability to compare CRS with other chronic diseases.

One validated tool that has been widely used to measure general health-related quality of life is the EuroQol5 Dimension questionnaire (EQ-5D).[3,4] This brief five-question survey collects information across five domains: mobility, self-care, usual activity, pain/discomfort, and anxiety/ depression. Critically, the EQ-5D can be translated into Health Utility Values (HUV), a key building block for calculating quality adjusted life years that then allows for comparison of outcomes with a large number of pathologies and treatments beyond CRS.[5,6]

The purpose of this study was to investigate the outcomes of the Endoscopic Sinus surgery (ESS) in a large prospective cohort of CRS patients as measured with the EQ-5D general health-related quality of life questionnaire. In addition, we assessed the impact of clinical factors on these outcomes.

MATERIALS AND METHODS

An observational study was conducted in the Department of Ent and head and neck surgery in tertiary care hospital , Bengaluru , Karnataka on 90 patients from June 2025 to December 2025 .

All the patients included in the study were assessed by same clinician. All participants underwent a detailed ENT examination and were subjected to diagnostic nasal endoscopy.

Inclusion criteria

1. All patients who underwent endoscopic sinus surgery either primary or revision, for treatment of CRS who are refractory to medical therapy between the age group 18 years to 55 years

Exclusion criteria

1. Patients with history of cerebrospinal leak
2. History of nasal trauma
3. History of sinonasal tumours
4. History of external sinus procedures

PROCEDURE:

Patients who were potential candidates of Endoscopic sinus surgery were enrolled in the study and were made to fill the EQ-5D Questionnaire pre operatively and post operatively and the scores were compared. Based on the scores quality of life was compared before and after Endoscopic sinus surgery. The EQ-5D questionnaire is a general health-related quality of life instrument that assess five domains: mobility, self-care, usual activity, pain/discomfort, and anxiety/depression.[7] Scores within each domain range from 1 (no problem) to 5 (extreme problems). EQ-5D scores are then translated into HUV based on a widely used algorithm. HUV describes health states on a spectrum from O (health state equivalent to death to 1 (perfect health). Importantly, HUV are a key building block for calculating quality adjusted life years and allow for comparison of outcomes with a number of disease processes and treatments beyond CRS.[8]

By placing a checkmark in **ONE** box in each group below, please indicate which statements best describe your own health state **TODAY**.

Mobility

I have no problems walking ☐

I have slight problems walking ☐
I have moderate problems walking ☐
I have severe problems walking ☐
I am unable to walk ☐

Self-Care
I have no problems washing or dressing myself ☐
I have slight problems washing or dressing myself ☐
I have moderate problems washing or dressing myself ☐
I have severe problems washing or dressing myself ☐
I am unable to wash or dress myself ☐

Usual Activities *(e.g. work, study, housework, family or leisure activities)*
I have no problems doing my usual activities ☐
I have slight problems doing my usual activities ☐
I have moderate problems doing my usual activities ☐
I have severe problems doing my usual activities ☐
I am unable to do my usual activities ☐

Pain/Discomfort
I have no pain or discomfort ☐
I have slight pain or discomfort ☐
I have moderate pain or discomfort ☐
I have severe pain or discomfort ☐
I have extreme pain or discomfort ☐

Anxiety/Depression
I am not anxious or depressed ☐
I am slightly anxious or depressed ☐
I am moderately anxious or depressed ☐
I am severely anxious or depressed ☐
I am extremely anxious or depressed ☐

Figure 1: EuroQol 5-Dimension (EQ-5D) Questionnaire

Statistical Method

Descriptive statistics was used to summarise baseline characteristics. Paired t test was used to compare pre operative and post operative quality of life.

Chi-square test was used to find the association between categorical variables.

Statistical significance was considered $p<0.05$. SPSS was used for analysis.

RESULT

Out of 90 students included in our study , 55 were males and 35 were females and mean age of study group was 32.01 .All the participants included were asked to fill the EQ-5D questionnaire pre operatively and one month post operatively respectively. Many literature have reported about the various medical therapy involved in the management of CRS. Surgical management becomes the first line in the management of CRS patients who are refractory to medical treatment. At baseline, patient's reported the greatest difficulties in the pain/ discomfort, usual activities and anxiety/ depression. Problems in mobility and self care was not noted There was a significant reduction in the pain/ discomfort(67.6% vs 94.8%)and usual activities (73.6% vs 94.3%). Anxiety / depression domain also has minimal reduction postoperatively. No change in self care and mobility was noted.

DISCUSSION

The positive impact of ESS on quality of life among patients with CRS, as measured with both disease- specific and general health-related quality of life measures has been well described in the immediate post-operative' period.[9]

However, the longterm outcomes of ESS on quality of life are less well understood.

In this study, patients with CRS experienced sustained improvements in general health-related quality of life as measured by the EQ-5D for one month postoperatively. These improvements in quality of life primarily occurred within the pain/discomfort usual activity and anxiety/ depression domains. A beneficial impact on patients' over all health state after ESS was reflected in the improved HUV. The EQ-5D survey provides additional insight into general health with the visual analog scale. Similar to HUV, patients experienced a sustained improvement in the VAS postoperatively. Furthermore, a majority of patients reached the MCID (Minimal Clinical Important Difference)for both the HUV and VAS postoperatively.[10]

This finding highlights both the impact that CRS has on quality of life as a chronic disease and the potential for sustained improvement after sinus surgery.Patients with CRS have a greater burden of facial pain as compared with controls , and prior studies suggest that pain and sleep difficulties account for the greatest impairment in general health related quality of life . Patients experience significant improvement in these symptoms after ESS .[11]

This study results match with the prior studies . At baseline, patients reported the highest rate of problems in the pain and discomfort domain , whereas after surgery , this domain demonstrated the greatest improvement.The included patients report problems within EQ-5D domains that is pain and discomfort 52.4% , usual activities 16.4% and frequency of problems associated with anxiety and depression also reduced. No change in self care and mobility. The strengths of our study include a large sample size treated by one single surgeon , One month follow-up with good response rates for a study of this methodology, and measurement of general health-related quality of life PROMs. Study limitations include the likely presence of confounding variables that we do not consider in our analysis.

CONCLUSION

This study helps in examining the general health related quality of life for a period of six months after endoscopic sinus surgery. We have found significant reduction in the pain/ discomfort and usual activities .Anxiety / depression domain also has minimal reduction postoperatively. The degree of improvement of quality of life after endoscopic sinus surgery is the indicator of surgical success.

REFERENCES:

1. Tashman K, Adams D, Vickery TW, Holbrook EH, Gray ST, Bleier BS, et al. Five-year EuroQol 5-Dimension outcomes after endoscopic sinus surgery. Laryngoscope. 2024;134(6):2592-601.
2. Quintanilla-Dieck L, Litvack JR, Mace JC, Smith TL. Comparison of disease-specific quality-of-life instruments in the assessment of chronic rhinosinusitis. Int Forum Allergy Rhinol. 2012;2(6):437-43.
3. Devlin NJ, Brooks R. EQ-5D and the EuroQol Group: past, present and future. Appl Health Econ Health Policy. 2017;15(2):127-37.
4. Herdman M, Gudex C, Lloyd A, Janssen M, Kind P, Parkin D, et al. Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). Qual Life Res. 2011;20(10):1727-36.
5. Zhou T, Guan H, Wang L, Zhang Y, Rui M, Ma A. Health-related quality of life in patients with different diseases measured with the EQ-5D-5L: a systematic review. Front Public Health. 2021;9:675523.
6. Ko Y, Coons SJ. Self-reported chronic conditions and EQ-5D index scores in the US adult population. Curr Med Res Opin. 2006;22(10):2065-71.
7. Shearer D, Morshed S. Common generic measures of health related quality of life in injured patients. Injury. 2011;42(3):241-7.
8. R Core Team. R: a language and environment for statistical computing. Vienna: R Foundation for Statistical Computing; 2021.
9. Remenschneider AK, Scangas G, Meier JC, Gray ST, Holbrook EH, Gliklich RE, et al. EQ-5D-derived health utility values in patients undergoing surgery for chronic rhinosinusitis. Laryngoscope. 2015;125(5):1056-61.
10. Sedaghat AR. Understanding the minimal clinically important difference (MCID) of patient-reported outcome measures. Otolaryngol Head Neck Surg. 2019;161(4):551-60.
11. DeConde AS, Mace JC, Ashby S, Smith TL, Orlandi RR, Alt JA. Characterization of facial pain associated with chronic rhinosinusitis using validated pain evaluation instruments. Int Forum Allergy Rhinol. 2015;5(8):682-90.