A New Tool for Assessment of Quality of Life in Patients with Chronic Rhinosinusitis: The EQ-5D

Aaron Remenschneider, MD MPH; Laura D’Amico BA ; Eric Holbrook, MD; Stacey Gray, MD; Ralph Metson, MD
Department of Otology and Laryngology, Massachusetts Eye and Ear Infirmary, Harvard Medical School

Abstract

Educational Objective:
• Understand the emerging role of the EQ-5D for CRS patient assessment of quality of life
• Appreciate how the EQ-5D allows for comparative studies using Health Utility Values (HUV) and Quality Adjusted Life Years (QALYs)
• Differentiate disease specific quality of life surveys in CRS from general health related quality of life (HRQoL) surveys and determine their respective roles in outcomes research

Methods: Review of relevant CRS quality of life literature with a focus on validated disease specific and general HRQoL studies. Extrapolate from the robust European literature using QALYs to draw conclusions about the relevance of CRS to other chronic diseases. Describe the authors’ experience in enrolling over 500 patients as part of an institutional quality study using the EQ-5D assessment.

Results: A review of the English literature using terms ‘Quality of Life’ & ‘Sinusitis’ returned >400 articles. Research focused on ‘before and after’ intervention to demonstrate change in disease specific or general health complaints. When terms ‘QALY’ or ‘EQ-5D’ were added, 6 articles appeared, with 4 related to decision making in treatment of acute bacterial sinusitis. There is no published literature on CRS and QALYs, but there are ample data for other chronic disease states, including diabetes / COPD & heart disease, that allow comparisons.

Conclusions: There is a need for general HRQoL research in patients with CRS. The EQ-5D is a validated, powerful new instrument that allows comparisons between chronic disease states. Collection and analysis of these data may be important for health care policy decision-making.

Introduction

Rhinosinusitis affects over 31 million people each year and has an enormous economic impact, measured to be as much as 5.8 billion dollars annually.1,2 Most research into treatment outcomes has focused on disease specific measures, which assess how a patient’s chronic rhinosinusitis (CRS) symptoms change over time. Many different surveys have been proposed with varying reliability, validity and responsiveness.3 Establishing a common language has been important for the comparison of treatment modalities between studies and institutions. The Chronic Sinusitis Survey (CSS) and SinoNasal Outcomes Test (SNOT-22) have been widely accepted as standard outcomes assessments.3

While disease specific instruments can allow intragroup analysis (before and after treatment), general HRQoL assessments allow comparisons between disease states. General health surveys can be described as ‘patient focused assessments’ and allow a global view of a health and chronic disease. In a similar way the Euroqol – 5 Dimension survey (EQ-5D-5L)4 has served as a common language for comparison between chronic disease states. (Figure 1, 2)

The Euroqol 5-Dimension survey (Figure 1,2) is a widely used, simple assessment of a patient’s HRQoL, and it has been used extensively in other chronic disease states.5 Each dimension is evaluated with 5 possible responses within each category. This recent update allows more accurate assessment of HRQoL.6 A Visual Analog Scale (VAS) is included and completes a patient’s overall score.

Unlike other measures of general HRQoL, such as the SF-36, data collected from the EQ-5D is easily translated into a health utility value (HUV). This value is scored between 0 (death) and 1 (perfect health). Responses are stratified by country and allow for direct comparisons between chronic disease states, eg: diabetes and heart disease. When input costs are associated with this value, QALYs may be calculated.

A literature review of quality of life research in CRS was conducted on Pubmed using the terms ‘quality of life’ and ‘sinusitis.’ A focus was on high quality disease specific and general HQRoL research. A second search was performed using the terms ‘EQ-5D’ and/or ‘Sinusitis’, and ‘QALY.’ All articles were screened for English language.

A review of our institution’s experience using the CSS, SNOT-22 and EQ-5D was performed, with interviews of research administrators. Ease of use and approximate time to complete surveys were recorded.

Results

English language articles searched using terms ‘Quality of Life’ and ‘Sinusitis’ returned over 400 publications. (Figure 3) Most research focused on outcomes before and after an intervention to demonstrate changes in disease specific outcome measures. When further narrowed to ‘general health quality of life,’ less than 50 articles have been published. Nearly all use the Short Form-12 (SF-12) or SF-36 questionnaire. Over 2250 articles have been published using the EQ-5D assessment, but only 2 include sinusitis. Research on QALYs in this field is limited to acute sinusitis. There is no published literature on CRS and QALYs.

Both the CSS and the SNOT-22 are easily understood by patients and take less than 5 minutes to complete. The EQ-5D-5L is similarly straightforward and takes less than 1 minute to complete. All surveys are transferable to web-based versions to allow for timed interval assessment.

Discussion

Research on outcomes in CRS began in the mid-1990s and has focused mainly on disease specific symptoms at baseline and over the course of medical or surgical therapy.7,8 These outcomes measures have been critical for focused research on specific symptomatology. However, patient’s overall health and wellbeing can be significantly impacted by sinus disease and has led to the incorporation of general HRQoL research, mainly using the Short-Form 36 question test.9 This shift allows a ‘patient focused’ outcome assessment that incorporates the entire individual’s wellbeing.

An initial report on HUVs in CRS was recently published using the SF-36 as the basis of HUV calculation.10 While the SF-36 has been a powerful general HRQoL tool, a regression analysis and conversion to EQ-5D states is necessary to obtain HUV values. A large-scale project is currently underway to record patient sinus symptoms on the EQ-5D. Interval assessment following sinus surgery will allow the pairing of HUV with the expense of HUV values.

Contact

Aaron Remenschneider
Massachusetts Eye and Ear Infirmary
Email: aaron_remenschneider@meei.harvard.edu
Phone: 617-573-3654

References


Figure 1. EQ-5D-5L Questionnaire

Figure 2. EQ-5D Visual Analog Scale

Figure 3. Status of Quality of Life Research in Chronic Rhinosinusitis

Number of Publications

All EQ-SD
Gen Health Qol and Sinusitis
EQ-5D and Sinusitis
QALY and CRS
Qol and Sinusitis

Under each heading, please check the ONE box that best describes your health TODAY

MOBILITY

• have no problems walking, arm or leg strength adequate

• have some problems walking, arm or leg strength adequate

• have severe problems walking, arm or leg strength adequate

• I am unable to walk

SELF-CARE

• I have no problems washing or dressing myself

• I have some problems washing or dressing myself

• I have severe problems washing or dressing myself

• I am unable to wash or dress myself

USUAL ACTIVITIES (eg. go to work, school, housework, household chores)

• I have no problems doing my usual activities

• I have some problems doing my usual activities

• I have severe problems doing my usual activities

• I am unable to do my usual activities

PAIN/COMFORT

• I have no pain

• I have slight pain or discomfort

• I have heavy pain or discomfort

• I am not sure how much pain/discomfort I have

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

For the next question, please use the number you picked on the scale below.

The best health state you can imagine.

The worst health state you can imagine.

Number of Publications

All EQ-SD
Gen Health Qol and Sinusitis
EQ-5D and Sinusitis
QALY and CRS
Qol and Sinusitis