What’s in a Number? Assessing the Burden of Diverticular Disease

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INTRODUCTION

Annually, nearly 3 million Americans are diagnosed with diverticulitis, and 1 in 4 have recurrent episodes.¹,² The American Society of Colon and Rectal Surgeons recommends individualizing the decision to operate based on the impact of diverticular disease on quality of life (QoL), rather than measures such as diverticulitis episode count.³ Measuring the impact of diverticular disease requires the use of standardized and validated tools that address both the patients’ function and well-being.⁴ Patient-reported outcome measures are increasingly incorporated into surgical research to assess the impact of disease on health-related QoL. To translate guidelines into practice, clinicians need a meaningful measure of diverticular disease burden linked to treatment recommendations. The diverticulitis quality of life survey (DVQOL) is a health-related QoL measure that was developed to assess diverticular disease burden on patients across 4 domains of function and well-being: physical symptoms, concerns, emotions, and behavioral changes.⁵ The DVQOL has not been adopted in practice, in part because there is a lack of evidence about its correlation with other QoL measures like work and activity impairment, and in part because there is uncertainty about whether the DVQOL is better correlated than episode count to other QoL measures or not. In this study we aim to (1) assess the correlation between the DVQOL and other expressions of disease measures including work impairment, activity impairment, and contentment with gastrointestinal (GI)-related health and (2) assess whether the DVQOL is better correlated than diverticulitis episode count with these measures.

MATERIALS AND METHODS

This was a prospective observational cohort of adults with a wide spectrum of diverticular disease burden from the Diverticulitis Evaluation of Burden and Trajectory (DEBUT) study. We recruited patients (≥18 years of age) with a confirmed diagnosis of diverticular disease by a physician report or computed tomography scan from emergency departments, surgery clinics and gastroenterology clinics at 9 US centers (2016–2019). We excluded patients who did not speak English, used a medical proxy for decision making, or had a colon resection. Participants were given baseline and follow-up quarterly surveys that included the DVQOL survey, work productivity and activity impairment (WPAI) questionnaires, contentment through the question “Are you satisfied with your digestive quality of life today?”, self-reported history of total number of diverticulitis episodes at baseline, and number of diverticulitis episodes quarterly.

The DVQOL is a 17-item questionnaire to assess the burden of diverticular disease across 4 domains; with a total score ranging from 0 [best] to 10 [worst] and a score of <3.2 considered acceptable.⁵,⁶ The WPAI v2.0 is a 6-item questionnaire that measures absenteeism, presenteeism, and the impairments in unpaid activity because of health problems during the past 7 days.⁷ We assessed correlations between patients’ reported measures (average 6, 9, and 12 months) and total episode count in 12 months using the Spearman method in a subset with at least 4 surveys between baseline and follow-up at 1 year. We also performed a by-quarter analysis to further assess the correlation between the DVQOL and episode count.

RESULTS

Among 200 patients (mean age of 56 years; 61% female), 118 were recruited in emergency departments, 61 in surgery clinics, and 21 in gastroenterology clinics. Median follow-up time was 4 quarters (IQR 0–7.5, max 12), median number of episodes was 3 (IQR 0–3), with median time since diagnosis of 1.1 years (IQR 0.1–5.9). At baseline, DVQOL median was 3.8 (IQR 2.2–5.7). Median activity impairment was 30% and median work impairment was 20% among those employed. Forty-eight percent reported contentment with their GI-related health.

A total of 79 patients had complete data at 1 year. DVQOL had a stronger correlation compared to episode count with work impairment, activity impairment, and contentment at 1 year (rho [r] = 0.24, 0.28, −0.35 vs 0.71, 0.61, −0.67, respectively). Across a total of 788 patient-quarters; when patients reported at least 1 diverticulitis episode in the quarter (34.5% of total patient-quarters), only 48.5% reported a high disease burden (DVQOL > 3.2). Among the patient-quarters when patients reported high diverticulitis burden (DVQOL > 3.2), 41.4% reported 0 diverticulitis episodes.
DISCUSSION

The DVQOL survey has a stronger correlation with other disease measures than episode count. Relying on episode count alone to determine if a patient has burdensome diverticulitis may underrepresent the burden of disease in patients who report worse DVQOL scores and may overrepresent the burden in patients who report satisfactory DVQOL scores. These findings support the broader use of the DVQOL in assessing the burden of diverticulitis and monitoring response to medical and surgical management.

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