Healthcare Burdens Across All Gastric-Related Disorders: More Understanding, Less Impairment?

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Chronic gastric-related conditions such as gastroparesis and functional dyspepsia are associated with significant quality-of-life impairment. Data derived from cross-sectional cohort samples suggest poor physical- and mental- health-related quality-of-life [1, 2], health-related costs (e.g., co-payments, medication costs) [3], and work impairment [2, 3]. Nevertheless, much of these data have been amassed from tertiary care center reports, including the NIH gastroparesis consortium [1, 4, 5]. Several studies have examined quality-of-life impairments in large community samples [6] and healthcare burdens in inpatient databases [7–9], but have been largely limited to gastroparesis samples. Thus, more data have been needed addressing the burdens engendered across the entire spectrum of gastric-related disorders among the broader population and across levels of care.

In this issue of *Digestive Disease and Sciences*, Bielefeldt [10] describes trends in healthcare utilization and functional impairment based on data gathered by the Medical Expenditure Panel Survey (MEPS) collected between 2000 and 2015 that studied 10,699 individuals with gastric-related conditions. One area that has been largely unaddressed by prior research is the burden of gastric-related conditions outside of the tertiary care setting, since tertiary care patients may be more likely to have greater illness severity. Bielefeldt [10] addresses this issue by using the MEPS, a publicly available database of a US population-based survey of acute and chronic medical conditions, collected through in-person household interviews by the National Health Interview

Survey. Using this large database, the author selected individuals who had self-reported “disorders of function of the stomach” (ICD-9 code 536) which includes the codes for achlorhydria, acute dilation of the stomach, persistent vomiting, gastroparesis, gastrostomy complications, dyspepsia and unspecified functional gastric disorder.

Importantly, Bielefeldt [10] found that healthcare utilization *related* to the gastric condition was actually lower than the reference cohort (i.e., presumably all individuals in the database without ICD-9 code 536), and lower than many rates reported from tertiary care gastroparesis samples. While the group of individuals with gastric-related conditions in Bielefeldt [10] had a significantly greater average utilization of office visits, ambulatory visits, hospitalizations, and prescriptions than the reference cohort, patients did not attribute all of these visits to their gastric condition. This relatively lower frequency of visits attributed to the gastric condition was stable over the 16-year period. This is novel information, as healthcare utilization data have been either limited to tertiary center cohorts [2, 3] or to data only studying inpatient hospitalizations [7–9]. The time trends are also unique since they cut across levels of care, beyond time trends reported for inpatient hospitalizations related to gastroparesis [7–9]. Bielefeldt [10] also found that healthcare expenses and quality-of-life impairments were higher for those in the gastric-related condition group, but these findings were more difficult to interpret, since they were not able to tease apart costs specifically attributable to the gastric-related condition.

Though the findings from Bielefeldt [10] expand knowledge regarding the healthcare utilization and impact of gastric conditions, there are certain limitations to the findings that can inspire future research: (1) burdens differentiated by condition type, (2) care fragmentation, and (3) other areas of quality-of-life impairment. First, while helpful to have data that capture a broader group of individuals with gastric-related conditions, it would be interesting to see differences in healthcare burden by type of condition. It is possible that

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the group of individuals with gastric-related conditions in this sample represent a group of individuals with greater overall illness comorbidity that is not related to chronic conditions such as gastroparesis. In fact, greater comorbidity was associated with a greater number of hospital admissions and emergency room visits. As the authors discuss, some individuals in the sample may have had *acute* rather than *chronic* gastric-related conditions—the participants included in the study had ICD-9 codes that included conditions that could be either acute or chronic.

Second, care fragmentation could be an interesting area for further study based on the findings from Bielefeldt [10]. In this sample, it is possible that many of the healthcare visits, including hospitalizations, occurred in different healthcare systems or at different centers. In addition to comorbidity as a factor associated with more frequent visits, individuals who receive care across multiple systems and centers are more likely to be high healthcare utilizers. Care fragmentation has been reported for 28–34% of hospital readmissions related to gastroparesis [9]. Thus, care fragmentation could be a contributing factor to greater healthcare utilization and costs among individuals with gastric-related conditions.

Finally, greater specificity of quality-of-life impairments among individuals with gastric-related conditions could inform prevention and intervention efforts. For example, Bielefeldt [10] reported that the MEPS data for absenteeism were operationalized as one day or more absent from work in the past year—the finding that about 33% of the sample met this criterion may not be precisely capture work impairments, given the low threshold for absenteeism. Instead, future population surveys may choose to survey rates of individuals not working or working limited hours due to their gastrointestinal condition (e.g., 30% and 15%, respectively, in a gastroparesis community sample [6]). Further, there may be particular areas that could be targeted with interventions aimed at improving quality-of-life. For example, Bielefeldt [10] found that their sample reported limitations to activity and social life—individuals with disorders of gut–brain interaction such as functional dyspepsia may avoid social events in attempt to prevent symptoms from occurring, although this avoidance can paradoxically reinforce their symptoms. More research is needed on such areas, particularly given that improving quality-of-life could indirectly decrease healthcare utilization and costs.

In summary, findings from the MEPS database in Bielefeldt [10] add to the literature on healthcare utilization and quality-of-life impairment among individuals who have

gastric-related conditions in a population sample broader than has been reported previously. This study can set the stage for future research designed to investigate differential healthcare burdens between acute and chronic gastric conditions and areas of quality-of-life disturbance related to gastric conditions in population-based samples.

Compliance with Ethical Standards

Conflict of interest BK has received research support from AstraZeneca, Takeda, Gelesis, Medtronic, and Genzyme and has served as a consultant to Shire, Takeda, and Ironwood. HBM has no personal or financial conflicts to declare.

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