Direct cost burden of gastroesophageal reflux disorder (GERD) to US employers

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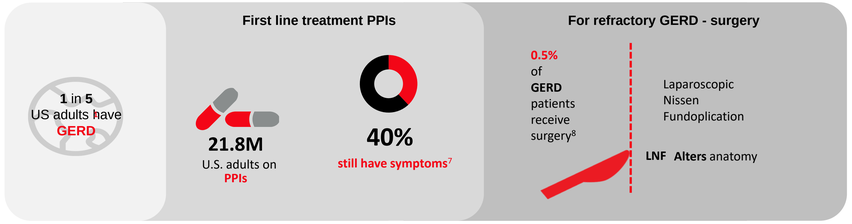
INTRODUCTION

- Gastroesophageal reflux disease (GERD) affects up to 20% of Americans and is one of the most common diagnoses managed in the ambulatory gastroenterology setting.[1-3]
- Non-surgical treatment options for GERD include lifestyle changes and medical therapy. The mainstay of GERD treatment remains the use of anti-secretory proton pump inhibitor (PPI) medications.[3]
- Up to 40% of patients with GERD treated with PPI therapy (even those on double-dose therapy) continue to experience heartburn or regurgitation symptoms despite adequate healing of esophagitis.[4-7]
- Anti-reflux surgery may be an option to better control persistent and refractory GERD symptoms (those with continued symptoms despite twice-daily PPI dosing for at least 12 weeks[7]) and to avoid lifelong GERD medical therapy.
- GERD has a considerable healthcare resource use (HCRU) and cost burden.
- The recent economic burden of patients with refractory GERD in the US is not well established as this depends on multiple factors related to the patient population evaluated and the treatments administered.
- A better and more current understanding of the economic burden of refractory GERD in US patients would be helpful to inform value assessments and healthcare decision making.

Current treatment modalities



OBJECTIVE

- This study assessed the economic burden of GERD among employer-sponsored insurance holders in a large multi-employer claims database in the US.

METHODS

- This retrospective observational study evaluated GERD costs in a claims database from Gallagher (benefits consulting organization), between January 1, 2019 and June 30, 2020.
- The study population was patients aged 18-65 years with a diagnosis for GERD (ICD-9 or ICD-10 codes) and continuous enrollment in employer-sponsored health plans.
- Patient demographics that were evaluated included age and sex. Baseline comorbidity (i.e., comorbid conditions present during the 6-month pre-index period) was assessed using the Charlson Comorbidity Index (CCI), an aggregate measure of comorbidity created by using 17 dimensions associated with chronic disease (e.g., heart disease, cancer) and overall health conditions.
- Annual medical claim reimbursement (inpatient and outpatient) and pharmacy claim reimbursement (excluding over-the-counter medications) were evaluated for all GERD patients and for the subset who received acid reflux surgery.
- All study variables were analyzed descriptively. Frequency counts and proportions were provided for categorical variables. Means and standard deviations were provided for continuous variables. Costs over one year were presented for patients with refractory GERD and for the subset of patients who had anti-reflux surgery. Analyses were conducted between surgical and non-surgical cohort to determine if results differed.
- Cost per day 90 days before the surgery, 90 days post-surgery and greater than 90 days post-surgery were calculated for surgical cohort and were compared to the cost per day for non-surgical cohort.

RESULTS

- A total of 145,656 patients with GERD (12.2%) were identified out of 1,193,097 patients in the database; 57,783 patients (44.3%) took prescription PPIs, and 646 patients (0.5%) received anti-reflux surgery.
- Among patients with surgery, overall cost per day and reimbursement were higher within 90-day window post- vs. pre-surgery (post-surgery $379 [$724] vs. pre-surgery $114 [$309], p<.0001).
- The pharmacy cost per-day (SD) greater than 90 days post-surgery was lower than non-surgical cohort (greater than 90 days post-surgery $5 [$17] vs. non-surgical cohort $7 [$32], p<.0001).

Table 1: Basic characteristics of study population			
		N	%
Sex	Female	71666	55.4
	Male	55555	42.9
	Other	2220	1.7
Age group	18-39	28299	22.0
	40-49	33539	26.1
	50-59	44294	34.5
	60-65	22416	17.4
GERD related procedure	Surgical cohort	646	0.5
	Non-surgical cohort	129857	99.5
Drug use	Any PPI claims	57783	44.3
	Any H2RA claims	10792	8.3

- The cost burden of GERD was substantial. GERD patients had a total of $13,331 annual paid claims per person (SD=$26,600). Overall mean (SD) annual healthcare cost was higher for patients with surgery compared to patients without surgery (non-surgery $13,194 [$25,703] vs. surgery $40,772 [$99,073], p<.0001). Overall mean (SD) annual pharmacy cost was lower for patients with surgery compared to patients without surgery (surgical cohort $3,136 [$8,981] vs. non-surgical cohort $2,855 [$4,630], p<.0001).

Table 2: Annual healthcare cost of patients with GERD by treatment option				
	Overall	Non-Surgical Cohort	Surgical Cohort	p-value
	N = 130,503	N = 129,857	N = 646	
Annual paid claims (SD)	$13,330.9 ($26,600.0)	$13,194.3 ($25,703.2)	$40,772.1 ($99,072.8)	<.0001
Annual medical claims (SD)	$11,402.6 ($25931.0)	$11,254.2 ($24,771.1)	$38945.8 ($106158.9)	<.0001
Annual pharmacy claims (SD)	$3,135.3 ($8,963.4)	$3,136.8 ($8,981.0)	$2,855.3 ($4,630.1)	<.0001

- Among patients with surgery, overall cost per day and reimbursement were higher within 90-day window post- vs. pre-surgery (post-surgery $379 [$724] vs. pre-surgery $114 [$309], p<.0001).
- The pharmacy cost per-day (SD) greater than 90 days post-surgery was lower than non-surgical cohort (greater than 90 days post-surgery $5 [$17] vs. non-surgical cohort $7 [$32], p<.0001).

Table 3: Healthcare cost of patients pre- and post-surgery for refractory GERD and non-surgery cohort			
	Non-Surgical Cohort*	Surgical Cohort	p-value
	N = 129857	N = 646	
Cost per day 90 days before the procedure	$36.2 ($105.7)	$114.3 ($308.8)	<.0001
Cost per day 90 days after the procedure		$379.0 ($724.2)	<.0001
Cost per day greater than 90 days after the procedure		$218.4 ($453.6)	<.0001
Pharmacy cost per day 90 days before the procedure	$6.5 ($32.4)	$8.8 ($20.6)	<.0001
Pharmacy cost per day 90 days after the procedure		$7.1 ($192.2)	<.0001
Pharmacy cost per day greater than 90 days after the procedure		$5.2 ($16.9)	<.0001
*** Cost per day for non-surgery cohort patients was the average daily cost during the entire study period.**			

STRENGTHS AND LIMITATIONS

Strengths

- This large U.S. retrospective database study demonstrated the substantial HCRU and cost burden of GERD in an employer-covered population.

Limitations

- The claims-based study does not capture use of the over-the-counter medications.
- Administrative claims data are collected for the reimbursement of healthcare goods and services, and not specifically for research. Potential problems with using administrative data for research include the risk of clerical inaccuracies, recording bias secondary to financial incentives, temporal changes in billing codes, and a lack of clinically relevant variables.
- When comparing the cost burden, no adjustments were made for differences in baseline characteristics between patients with and without surgery.
- The findings based on a U.S. multi-employer claims database may not be generalizable to other populations or countries

CONCLUSIONS

This large U.S. retrospective database study demonstrated the substantial cost burden of GERD for employers. Overall medical and pharmacy reimbursements were higher among patients who received surgery; however, analyses did not account for potential confounders or longer-term benefits of surgery.

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DISCLOSURES

C. Mei is a contractor of Ethicon. Inc, and may be stockholders in Johnson & Johnson.