Evaluating health outcomes trend in hospitalized Inflammatory Bowel Disease patients: a nationwide study.

BACKGROUND

- Hospitalized Inflammatory bowel disease (IBD) patients are at the highest risk for morbidity, mortality, and health care utilization costs.
- Variation in care and disease outcomes among hospitalized IBD patients is common across different centers.
- Our aim is to compare and assess the health outcomes in hospitalized IBD patients in the recent years.

METHODS

- We queried the Premier Healthcare database (PHD) for nationwide adult inpatient admissions between 2016-2018 with all relevant ICD10 diagnosis codes for inflammatory bowel disease.
- Outcomes of interest included complications, readmissions, post-operative mortality (PM), and Mean Length of stay (MLOS). Outcome risks are calculated via multivariate regression at the patient level and based on CareScience methodology.
- Chi square test was performed to compare categorical variables and ANOVA test to compare risk-adjusted, observed (O) to expected (E) outcomes.

RESULTS

- A total of 64025 inpatient admissions over a period of 3 years.
- Complication rate varied across the years (4.98% in 2016 vs 5.24% in 2018; **p=0.05**), however the observed rate was significantly better than expected (Mean O:4.98% vs E:5.43%; **p=0.04**).
- Furthermore, 8% decline in readmissions was observed (4.80% in 2016 to 1.98% in 2018; **p=0.0002**).
- The observed PM was significantly lower than expected (Mean O:0.20% vs E:0.28%, **p=0.004**).
- No significant difference seen between observed and expected values for readmissions and MLOS.

Table 1. Health outcomes trend in hospitalized IBD patients.

Year	Total inpatient admissions	Complications	Readmissions	Mortality
Total cases	64025	3189 (4.98%)	8445 (13.19%)	131 (0.20%)
2016	20692	1026 (4.96%)	2893 (13.98%)	45 (0.22%)
2017	22020	1044 (4.74%)	2861 (12.79%)	42 (0.19%)
2018	21313	1117 (5.24%)	2732 (12.82%)	45 (0.21%)
p-value		0.0567	0.0002	0.81

Table 2. Comparing Observed (O) and risk-adjusted Expected (E) Health Outcomes.

Outcomes	Inpatient Admissions	Complications		Mortality		Readmissions		Mean Length of stay	
Year	Total Cases	O	E	O	E	O	E	O	E
Total cases	**64,025**	**4.98%**	**5.43%**	**0.20%**	**0.28%**	**13.18%**	**12.36%**	**3.25**	**3.33**
2016	20,692	4.96%	5.33%	0.22%	0.29%	13.96%	12.25%	3.31	3.34
2017	22,020	4.74%	5.40%	0.19%	0.28%	12.79%	12.37%	3.23	3.34
2018	21,313	5.24%	5.55%	0.21%	0.26%	12.82%	12.48%	3.20	3.31
p-value		0.04		0.004		0.1		0.07	

CONCLUSION

- Readmissions, PM and complications have declined for hospitalized IBD patients in recent years. Further research is needed to identify the underlying factors contributing to the trends.
- Appropriate inpatient care improvement strategies and quality improvement frameworks can lessen the burden of disease and associated mortality or morbidity in hospitalized IBD patients.

Manasi Parikh MD MS[1]; John R.T. Monson MD[1]
[1]Center for Colon and Rectal Cancer, Surgical Health Outcomes Consortium, AdventHealth Orlando, Orlando, Florida, USA