



# Short Bowel Syndrome is associated with increased morbidity and health-care utilization but not mortality in patients hospitalized for Crohn's disease flare: An analysis from National Inpatient Database

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## Introduction

- ❑ Crohn's disease is an inflammatory disorder of the gastrointestinal tract that can affect any part of the tract, ranging from the mouth to the perianal area.
- ❑ Depending on the location and severity of inflammation, small bowel resections might be necessary to control disease.
- ❑ Short Bowel Syndrome (SBS) is a common complication arising after extensive bowel resection, especially in medically refractory Crohn's disease. These patients are at a high risk of adverse outcomes when hospitalized.

## Aims and Objective

- ❑ The primary aim of this study was to analyze the impact of SBS on mortality of patients hospitalized for Crohn's disease flare.
- ❑ Secondary objectives were morbidity, length of stay and health care utilization charges due to SBS in these patients.

## Methodology

- ❑ All adult hospitalized patients from January 2016 to December 2019 in the nationwide inpatient sample (NIS) database were captured using ICD-10 codes (International Classification of Diseases, tenth edition).

## Methodology

- ❑ We then identified patients with a secondary diagnosis of SBS. The Crohn's disease population was divided into patients with SBS (study group) and without SBS (control group).
- ❑ We used liner regression to compare continuous variables and Chi-square tests for categorical variables. Morbidity, mortality and healthcare utilization were analyzed using multivariate logistic and linear regression models where appropriate.

## Results

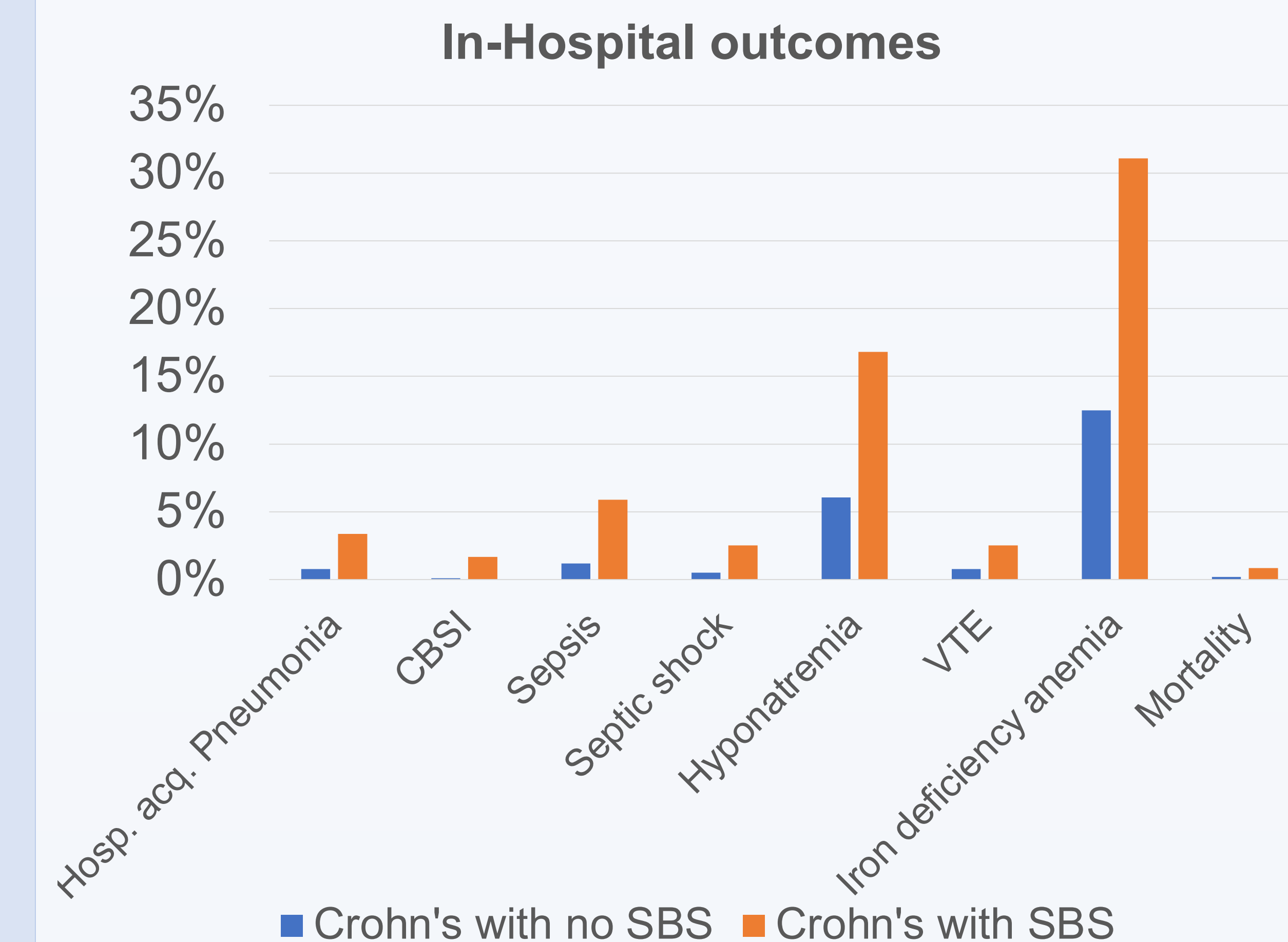
- ❑ The sample size included 374,745 patients admitted for Crohn's disease flare, of which 99.75% did not have underlying SBS while 0.25% did.
- ❑ Study group had a higher incidence of Hospital-acquired pneumonia (Adjusted OR (aOR) =2.93), Catheter related blood-stream infection (aOR=7.71) and Sepsis (aOR=2.99), all with p<0.05 or less.
- ❑ There was also a statistically higher risk of hyponatremia (aOR=1.79) and Iron-deficiency anemia (aOR=1.68) in the study group.
- ❑ The adjusted mean change in hospitalization charge was \$44,359 and mean change in length of stay was 6.35 days in study group vs control.
- ❑ Mortality though was higher in SBS group, this lost significant following multivariate analysis.

## Results

Table 1 In-hospital outcomes			
Variables	Crohn's with no SBS (Control)	Crohn's with SBS (Study)	p-value
Hospital acquired pneumonia	0.78%	3.36%	<0.001
	Adjusted OR <sup>1</sup> =2.93		0.042
Catheter related blood-stream infection	0.1%	1.68%	<0.001
	Adjusted OR=7.71		0.005
Sepsis	1.19%	5.88%	<0.001
	Adjusted OR <sup>1</sup> =2.99		0.006
Septic shock	0.51%	2.52%	0.002
	Adjusted OR <sup>1</sup> = 2.36		<0.15
Hyponatremia	6.07%	16.81%	<0.001
	Adjusted OR <sup>1</sup> =1.79		0.02
Venous thrombo-embolism	0.77%	2.52%	0.02
	Adjusted OR <sup>1</sup> =1.84		<0.29
Iron deficiency anemia	12.49%	31.09%	<0.001
	Adjusted OR <sup>1</sup> =1.68		0.045
Mean total hospitalization charge (\$) <sup>1</sup>	\$44,911	\$100,203	<0.001
	Mean change in charges <sup>1</sup> = \$44,359		<0.001
Mean length of stay (days) <sup>1</sup>	4.78	12.53	<0.001
	Mean change in length of stay <sup>1</sup> = 6.35		<0.001
In-hospital mortality	0.2%	0.84%	0.11
	Adjusted OR <sup>1</sup> =2.44		0.39

<sup>1</sup>Adjusted for Age, Sex, Race, income, hospital characteristics and Elixhauser score

## Results



## Conclusion

- ❑ SBS increases the risk of infections, electrolyte deficiency and anemia in patients admitted for Crohn's disease flare but venous thromboembolism and mortality rates of both groups remains similar. This proves to be a huge burden on both the patients and the healthcare.
- ❑ The outcomes of patients with SBS could be greatly improved by more effective prevention of these complications, and treatment of high-risk Crohn's patients more vigilantly.

## Contact

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