Disparities in Open VS. Minimally Invasive Surgery for Colorectal, Gastric, and Pancreatic Cancers

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Background

The use of minimally invasive surgery (MIS) for management of intraabdominal malignancies is on the rise. Several studies have shown presence of disparities in access to MIS compared to open surgery in patients of different race, insurance type, and income level. The aim of this study is to assess disparities in access to MIS for the management of the most common intraabdominal malignancies.

Methods

- 8-year analysis using the NCDB (2010-2017) including patients who underwent colorectal, gastric, or pancreatic cancer resections.
- Patients were excluded if they did not undergo surgery or surgical approach was not specified.
- Demographic variables relevant to socio-economic status and ethnoracial identity were analyzed.

Results

- 231,336 surgical patients included: gastric cancer (n=52,038), colorectal cancer (n=126,220) and pancreatic cancer (n=53,078)
- The minimally invasive approach accounted for 40.8%, 51%, and 26.4% of cases in gastric, colorectal, and pancreatic cancer resections, respectively

Results

For gastric cancer, a greater proportion of patients identifying as white underwent a MIS approach compared to patients identifying as black (41.9% v. 35.9%, p<0.01). Colorectal and pancreatic cancer surgery patients had equitable distribution among white and black-identifying patients. Hispanic identifying patients were less likely to undergo MIS as compared to open surgery for gastric cancer, however this trend was not seen in colorectal or pancreatic cancer surgery. Asian/Pacific Islanders were more likely to undergo MIS compared to open, than patients in other racial groups. Across all types of cancer operations, patients with higher incomes, private insurance and treated in an urban location were more likely to undergo MIS. On trend analysis (Graphs 1-3), there is an overall increase in MIS over time, especially in colorectal cancer surgery.

Conclusion

In this national retrospective study, there is unequal access to MIS for cancer treatment in disfavor of black race, lower income, and treatment in a rural setting. For gastric cancers, Hispanic ethnicity is associated with lower access to MIS, however this relationship was not seen in colorectal or pancreatic cancer. Interestingly, Asian/Pacific Islanders had a higher proportion of MIS as compared to white and black-identifying groups across all three types of cancer operations.





