Racial Disparities in Surgical Outcomes of Patients with Inflammatory Bowel Disease

Samuel Montgomery BS, Rebecca Hoffman MD, Cary Aarons MD, Paris Butler MD MPH, Chris Wirtalla BA, Rachel Kelz MD MSCE

Department of Surgery, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania

BACKGROUND

- Inflammatory bowel disease (IBD) affects nearly 1.5 million patients in the United States.
- Previously recognized as a disease primarily affecting Caucasians.
- No longer considered a “rarity” and incidence has significantly increased in minority populations over past 20 years.
- Racial disparities in care and outcomes are ubiquitous and contribute to mortality and morbidity.

OBJECTIVES and HYPOTHESIS

Objective: We sought to examine the association between race and mortality and morbidity of IBD patients.

Hypothesis: We hypothesized that outcomes following surgery would be worse for black patients.

METHODOLOGY

- Study Cohort: NSQIP 2011-2014: all IBD patients.
- Conditions (Crohn’s Disease and Ulcerative Colitis)
- Primary ICD-9 codes: 555, 555.0, 555.1, 555.2, 555.9, 555.6, 555.6.1-556.6
- Study Design: Retrospective Cohort Study
- Primary Exposure: Race defined as white, black, and other.
- Potential Adjustment Variables
  - Age
  - Sex
  - Condition (Crohn’s or Ulcerative Colitis)
  - Year of Operation
  - ASA Class

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RESULTS

TABLE 1 - Descriptive Statistics: Selected Patient Characteristics by Race Categories

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Total (%: N=14,679)</th>
<th>White (%: N=12,198)</th>
<th>Black (%: N=1,035)</th>
<th>Other (%: N=1,446)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Female 7,321 (49.9)</td>
<td>6,144 (50.7)</td>
<td>607 (58.6)</td>
<td>570 (39.8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Age</td>
<td>Median (IQR): 56 (42-67)</td>
<td>55 (42-67)</td>
<td>56 (42-67)</td>
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<td>1.38* [0.92, 1.07]</td>
</tr>
<tr>
<td>Type of IBD</td>
<td>Crohn’s Disease 8,460 (57.6)</td>
<td>7,198 (59.1)</td>
<td>702 (68.2)</td>
<td>560 (38.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Comorbidities</td>
<td>Diabetes 3,638 (24.5)</td>
<td>2,949 (24.1)</td>
<td>274 (26.3)</td>
<td>415 (28.7)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

TABLE 2 - Multivariable Logistic Regression: Effect of Black Race on Outcomes

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death or Serious Morbidity</td>
<td>1.35* [1.13, 1.61]</td>
</tr>
<tr>
<td>Return to OR</td>
<td>1.28* [0.96, 1.71]</td>
</tr>
<tr>
<td>Sepsis or Septic Shock</td>
<td>1.20 [0.86, 1.67]</td>
</tr>
<tr>
<td>Bleeding Transfusions</td>
<td>1.18* [1.06, 1.32]</td>
</tr>
<tr>
<td>Urinary Track Infection</td>
<td>1.02 [0.90, 1.17]</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1.01 [0.71, 1.42]</td>
</tr>
</tbody>
</table>

SUMMARY

- We sought to examine the association between race and mortality and morbidity of IBD patients.
- After adjusting for possible confounding variables:
  - We found that black patients have a 34% higher chance of death or serious morbidity.
  - Black patients also have a 46% higher need for bleeding transfusions.

CONCLUSIONS

- Black patients with IBD have increased risk for death and morbidity after surgery.
- Efforts to reduce disparities in care and outcomes need to be further explored in future prospective studies with an emphasis on treatment response amongst minorities.

LIMITATIONS

- NSQIP not generalizable to non-participating hospitals
- Lack of adequate severity/comorbidity measure beyond ASA class
- Uncontrolled confounders such as Biological/Genetic factors
- Social/Behavioral determinants of health

DISCLOSURES: No relevant disclosures applicable to the contents of this presentation.