Decreased Mortality Risk in Acute Variceal Bleeding with Delayed Endoscopy (>24h) Compared to Early Endoscopy (<24h)

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No disclosures
Background

GI emergencies account for > 500,000 hospitalizations every year and are associated with high 30-day readmission rates

50% of patients with cirrhosis have varices upon initial diagnosis

Variceal bleeding accounts for upto 70% of all upper GI bleeding in patients diagnosed with portal hypertension

Definition: **Acute variceal bleeding (AVB)** is defined as hematemesis, melena, or other signs of GI blood loss within the last 24h in patients suspected to have portal hypertension
What is the optimal timing for endoscopic intervention?

AASLD suggests that endoscopy within 12 hours is beneficial.
Study Design

National Inpatient Sample (NIS) database
- Developed to represent all nonfederal hospitals in US

Retrospectively analyzed patients hospitalized between January 2016-December 2019
- Primary diagnosis of variceal bleeding

ICD-10-CM procedure code identified patients who underwent non-elective EGD
- Specific to upper gastrointestinal endoscopy

EGD categorized into 2 main groups: Early vs Delayed
- Early: within 24 hours
- Delayed: within 24-72 hours
Areas of Interest

Primary outcome: Length of stay, total inpatient cost between the two EGD groups

Secondary outcomes: 30-day all-cause mortality between the 2 EGD groups
<table>
<thead>
<tr>
<th>Outcome</th>
<th>Urgent EGD</th>
<th>Delayed EGD</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean length of stay (days) ± SE&lt;sup&gt;a&lt;/sup&gt;</td>
<td>4.73 ± 0.04</td>
<td>5.76 ± 0.11</td>
<td>P &lt; 0.05</td>
</tr>
<tr>
<td>Adjusted mean difference in length of stay (Days) ± SE</td>
<td>-</td>
<td>0.78 ± 0.12*</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Mean hospital charge ± SE&lt;sup&gt;a&lt;/sup&gt;</td>
<td>$ 62,263 ± 822</td>
<td>$ 68,344 ± 1776</td>
<td>P = 0.1</td>
</tr>
<tr>
<td>Adjusted mean difference in hospital charge ± SE</td>
<td>-</td>
<td>$ 3,127 ± 1866</td>
<td>P = 0.09</td>
</tr>
</tbody>
</table>

Table 2. Multivariable Linear regression evaluating length of stay and per-patient hospital charges
Study Results

• 48,964 admissions who met the inclusion criteria; 83.1% underwent EGD, 13.9% went delayed EGD.

• The mortality was significant higher in urgent EGD cohort compared to delayed EGD (5% compared to 3%, $P = 0.01$) (table 1)

• There was a 37% decreased risk of all-cause mortality at 30 days in patients who underwent delayed EGD compared to urgent EGD ($P < 0.001$) (Figure 1).

• There was a lower association of shock in patients who underwent delayed EGD compared to urgent EGD, ($P < 0.001$)

Figure 1: Kaplan–Meier curves for 30-day all-cause mortality according to the timing of EGD in patients admitted with Acute variceal bleed.
<table>
<thead>
<tr>
<th>Mortality status on discharge</th>
<th>Early EGD</th>
<th>Delayed EGD</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Died during hospitalization</td>
<td>2345 (5%)</td>
<td>265 (3%)</td>
<td>P = 0.01</td>
</tr>
<tr>
<td>Alive on discharge</td>
<td>46569 (95%)</td>
<td>7644 (97%)</td>
<td></td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>17739 (36%)</td>
<td>2940 (37%)</td>
<td>P = 0.4</td>
</tr>
<tr>
<td>ARF</td>
<td>9505 (19%)</td>
<td>1855 (23%)</td>
<td>P &lt; 0.001</td>
</tr>
<tr>
<td>Hypovolemia</td>
<td>3965 (8%)</td>
<td>825 (10%)</td>
<td>P &lt; 0.01</td>
</tr>
<tr>
<td>Shock</td>
<td>5735 (12%)</td>
<td>440 (6%)</td>
<td>P &lt; 0.001</td>
</tr>
</tbody>
</table>
Early EGD

- decreased length of stay
- Lower complications
- Higher rates of hypovolemic shock
- Increased overall mortality

Delayed EGD

- Lower overall mortality rate
- Higher complications: hypovolemia, increased transfusions, acute renal failure
- Lower association with shock
Conclusion

Delayed EGD (after 24 hours of admission) has lower mortality compared to urgent EGD (within 24 hours of admission) for AVB.

Although, urgent EGD is associated with lesser complications, this does not translate into all cause inpatient mortality within thirty days.

Initial stabilization of patients followed by EGD after 24 hours could be a viable option, especially in hospitals with limited resources.
So which option is better?

Depends on your patient but earlier intervention does not necessarily mean better outcomes.
Resources


Thank you!

Acknowledgements:
Dr. Hassam Ali, Dr. Shiva Poola, and Dr. Rahul Pamarthy
Mentor: Dr. Eslam Ali