



Upper GI Bleeding with Myocardial Infarction: Evaluation of Safety for Endoscopy

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BACKGROUND

Upper gastrointestinal bleeding (UGIB) in the setting of acute myocardial infarction (MI) is a complex medical condition with substantial morbidity and mortality. The anemia due to the UGIB may exacerbate the MI or the anticoagulation for the MI may contribute to UGIB. In addition, both have many significant complications. Several studies have been performed in studying the safety of EGD after MI; however, these studies vary in definitions and results. This study evaluated the safety and effect of EGD in patients with acute MI in a tertiary-care center.

METHODS

- Retrospective study (1/01 - 3/12).
- 86 patients who underwent EGD within 30 days of a MI at a single tertiary-care center.
- Patients identified by ICD-9 codes for MI (STEMI & NSTEMI) and CPT codes for EGD.
- An extensive chart review was performed.
- MI was defined as troponin I greater than laboratory reference “diagnostic of MI.”
- Medical complications were defined as any documented changes in patients’ symptoms, vital signs (BP < 90/60 or > 180/100 mmHg, HR > 100 or < 60 bpm, RR > 24/minute, O₂ saturation < 90%, temperature < 35.0°C), and telemetry (ventricular or atrial arrhythmias) within 24 hours of EGD.
- The study was statistically analyzed by the t-test and Fisher’s exact test with significance indicated by *p-value* < 0.05.

| Patients | TOTAL | STEMI | NSTEMI | <i>p-Value</i> | Prior CC | No Prior CC | <i>p-Value</i> |
|---------------------------------|---------------|---------------|--------------|----------------|---------------|---------------|----------------|
| | 86 | 18 | 68 | | 28 | 58 | |
| Peak Trop I (ng/mL) (mean) | 23.17 ± 59.17 | 40.71 ± 40.04 | 19.3 ± 62.17 | 0.10 | 23.63 ± 31.82 | 23.33 ± 68.44 | 0.49 |
| Time to Endoscopy (days) (mean) | 5.15 ± 6.00 | 2.01 ± 2.27 | 5.96 ± 6.40 | 0.006 | 5.06 ± 5.49 | 5.02 ± 6.20 | 0.49 |
| Apache II Score (n) (mean) | 12.73 ± 6.53 | 13.56 ± 9.95 | 12.51 ± 5.33 | 0.27 | 12.46 ± 8.25 | 12.86 ± 5.57 | 0.40 |
| Cardiac Cath/Total (%) | 32.6% | 77.8% | 20.6% | 0.08 | 100% | 0% | - |
| Complications (%) | 31.4% | 50.0% | 26.5% | 0.05 | 39.3% | 27.6% | 0.14 |

Table 1: Summary of study results. CC = cardiac catheterization.

RESULTS

- Summary of results in **Table 1**.
- Complications were identified in 31.4%. (**Figure 1**)
 - Hypotension (8)
 - Sinus Tachycardia (8)
 - PVCs (1)
 - Tachypnea (2)
 - Hypertension (2)
 - Sinus Bradycardia (3)
 - Hypothermia (1)
 - Chest Pain (2)
- STEMI patients underwent EGD sooner than NSTEMI patients (*p*=0.006).
- No other significant differences were noted between types of MI and cardiac catheterization status for peak troponin I, Apache II score, or complications.

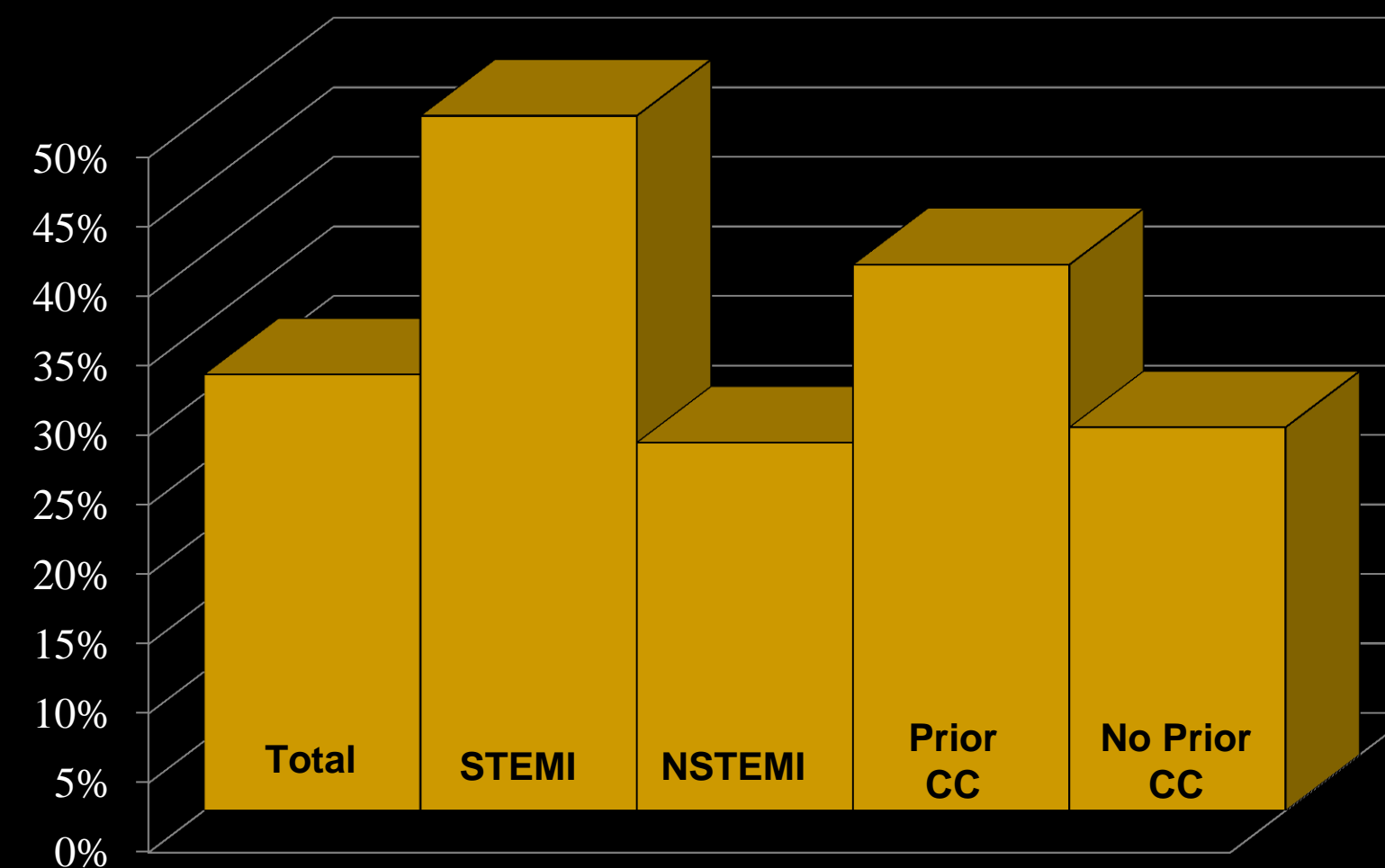


Figure 1: Comparisons of complications between type of MI and cardiac catheterization (CC) status.

CONCLUSION

EGD appears relatively safe for diagnosis and management of UGIB in patients with acute MI. Only minor complications were observed. The type of MI and the need for cardiac catheterization do not result in a higher incidence of complications.