

Assessing the Role of Prophylactic Antibiotics in Preventing Clinically Relevant Bacteremia in Neutropenic Patients Undergoing GI Endoscopy

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INTRODUCTION

- Patients with neutropenia are at increased risk for bacteremia and sepsis after endoscopy.
- According to ASGE, there is insufficient evidence to recommend for or against the administration of prophylactic antibiotics prior to routine endoscopic procedures in patients with neutropenia.

AIMS

- Assess the safety of GI endoscopy in patients with neutropenia.
- Assess whether the use of prophylactic antibiotics reduces the risk of bacteremia following GI endoscopy in neutropenic patients.

METHODS

- We performed a retrospective cohort study of neutropenic patients undergoing GI endoscopy between 2012-2022.
- Neutropenia was defined as ANC < 1500 (mild), ANC < 1000 (moderate) and ANC < 500 (severe).
- EMR was utilized to collect demographics, lab results, type and infectious risk of endoscopy, endoscopic findings and complications within 3 days of endoscopy.
- We divided patients into two groups; those who received periprocedural prophylactic antibiotics (PPA) and those who did not.
- Multilevel logistic regression models were used to assess factors associated with clinically relevant bacteremia.

RESULTS

Table 1 Clinical characteristics of patients

| | | No Periprocedural antibiotics group (N=56) N(%) | Periprocedural antibiotics group (N=46) N(%) |
|--|----------------------------|---|--|
| Age | Overall mean 60.4 | 64.3 | 55.7 |
| Primary diagnosis | Solid organ Malignancy | 17 (30%) | 1 (2%) |
| | Hematologic malignancy | 7 (12%) | 18 (39%) |
| | Organ transplant recipient | 32 (57%) | 27 (58%) |
| ANC count groups (per microliter) | 1000-1500 | 22 (39%) | 18 (39%) |
| | 500-1000 | 21 (37%) | 13 (28%) |
| | 0-500 | 13 (23%) | 15 (32%) |
| ANC count (per microliter) | Overall average 808 | 842 | 766 |
| Performance status | ECOG 1-2 | 18 (32%) | 10 (21%) |
| | ECOG 3-4 | 4 (7%) | 3 (6%) |
| | Unknown | 34 (60%) | 33 (72%) |
| Blood cultures collected within 3 days of endoscopy | YES | 10 (18%) | 7 (15%) |
| | NO | 46 (82%) | 39 (84%) |
| Patients required antibiotics within 3 days of procedure | YES | 10 (18%) | 8 (17%) |
| | NO | 46 (82%) | 38 (83%) |
| AE related to sepsis (Hypotension, fever, ICU admission) | Any | 6 (10%) | 8 (17%) |
| | None | 50 (90%) | 38 (83%) |

Figure 1: Indications for endoscopy

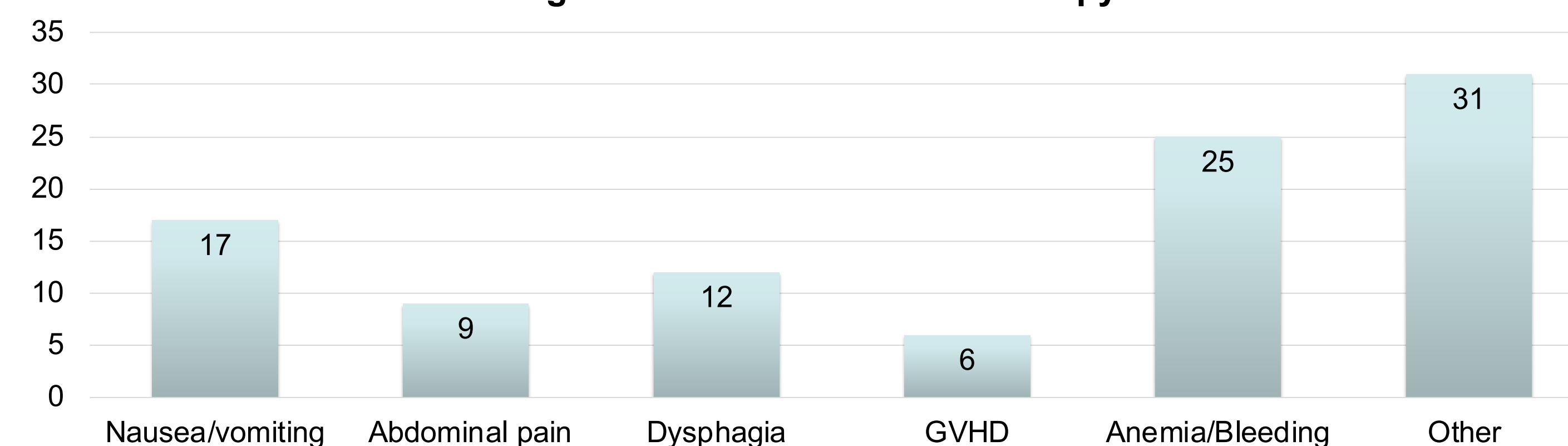
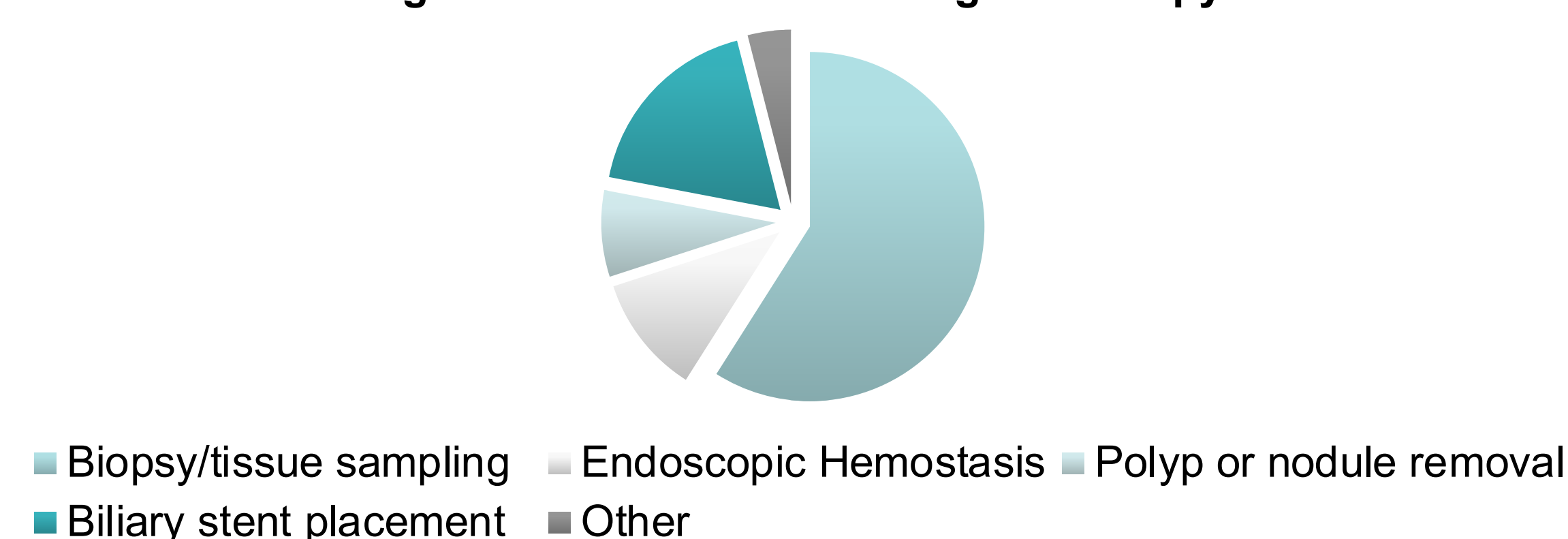


Figure 2: Interventions during endoscopy



RESULTS

- A total of 102 patients were included in this study.
- The means age was 60 and 46% were female.
- The three most common indications for endoscopy were anemia/bleeding followed by nausea/vomiting and dysphagia.
- 58% required GI biopsies and 11% received endoscopic hemostasis
- 46% received periprocedural prophylactic antibiotics. 15% developed sepsis within 3 days and required resumption of empiric antibiotics.
- 54% did not received prophylactic antibiotics prior to endoscopy. 16% developed sepsis within 3 days and required initiation of empiric antibiotics.
- The most common antibiotic for prophylaxis used were fluoroquinolones.
- Subsequently, blood cultures drawn on all the septic patients did not grow any organisms.
- Comparison of outcomes between both groups of patients did not show any difference.
- No association was observed between lower ANC or use of steroid with infectious adverse events (p > 0.6)

CONCLUSION

- This study showed a low rate of mortality and no clinically relevant bacteremia following endoscopy in neutropenic patients.
- The ANC did not seem to affect outcomes, neither did the use of periprocedural prophylactic antibiotics.
- At this interim analysis, our study is underpowered to detect significant differences and further data collection will be carried out to ensure appropriate statistical power.