

# UTILITY AND SAFETY OF PRE-LVAD ENDOSCOPY IN PREVENTING GASTROINTESTINAL BLEEDING IN LEFT VENTRICULAR ASSIST DEVICE (LVAD) RECIPIENTS

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## ABSTRACT

## INTRODUCTION

- Gastrointestinal bleeding (GIB) is a frequent complication in patients with a left ventricular assist device (LVAD). Small bowel angiodysplasias are the most common source of bleeding.
- The optimal approach to pre-screen patients before LVAD implantation remains unclear. The aim of this study is to describe pre-and-post-LVAD endoscopy findings.

## METHODS AND MATERIALS

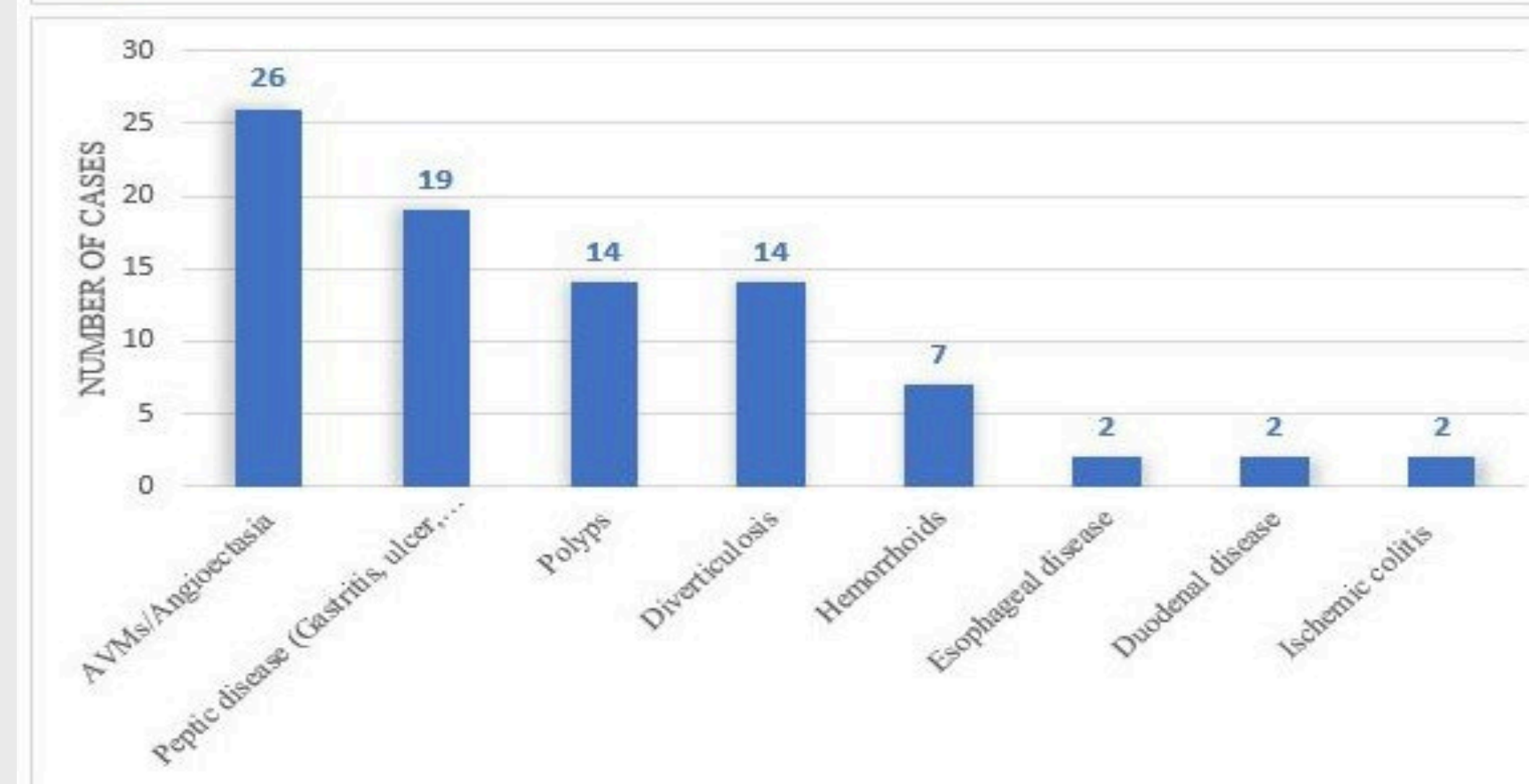
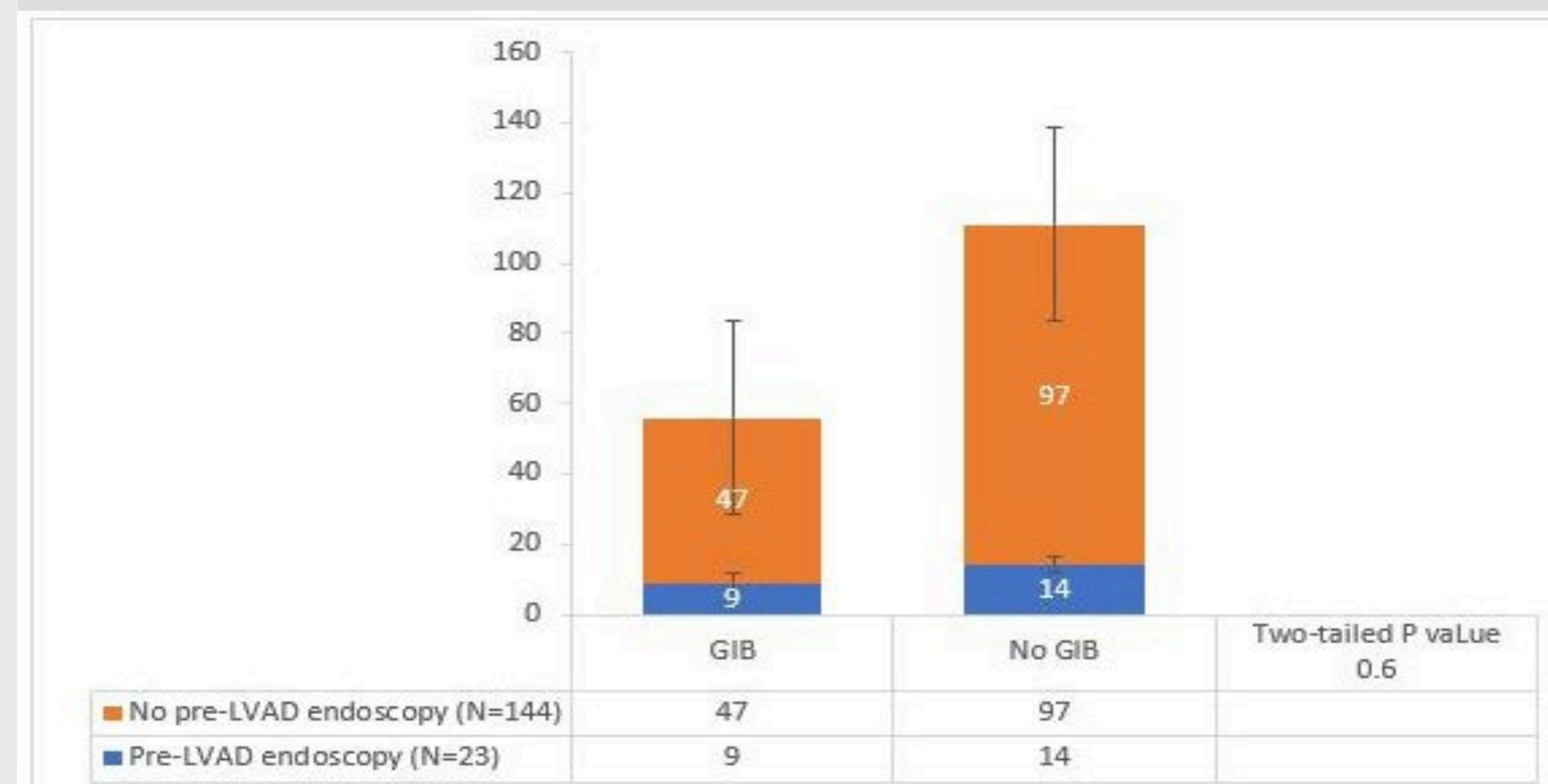
- A retrospective review was conducted among all patients who underwent LVAD implantation, at Saint Luke's Hospital between 2010 and 2020.
- Data were reviewed to determine the yield and safety of endoscopic procedures performed within 1 month before LVAD placement and the incidence of GIB within 1 year after implantation.

## RESULTS

- Among 205 patients who received an LVAD, 167 met the inclusion criteria for this study and 23 underwent pre-implantation endoscopic evaluation.
- Modalities of pre-LVAD endoscopy included EGD 14/23 (60.9%), colonoscopy 9/23 (39.1%), enteroscopy 3/23 (13%), and capsule endoscopy 1/23 (4.3%), with the most frequently identified source of peptic disease.
- Of 56 patients who experienced post-LVAD bleeding, 55 underwent endoscopy where angiodysplasia was the most frequently identified source, though peptic disease, polyps, and diverticular bleeds were also common.
- Therapeutic interventions were successful in attaining hemostasis in almost all cases without adverse events.
- There was no difference in the rates of GI bleeding in patients who underwent endoscopic evaluation pre-LVAD (39.1% vs 32.6%, p=0.64).

## CONCLUSION

- GIB is a common event following LVAD placement. Pre-LVAD endoscopic evaluation done within 1 month prior to implantation does not reduce the incidence of post-LVAD bleeding, and its role remains questionable.



|                             | Pre-LVAD (n=23) | Post-LVAD (n=55) |
|-----------------------------|-----------------|------------------|
| <b>• Scope modality</b>     |                 |                  |
| EGD                         | 14 (60.9%)      | 37 (67.3%)       |
| Colonoscopy                 | 9 (39.1%)       | 27 (49.1%)       |
| Enteroscopy                 | 3 (13.0%)       | 20 (36.4%)       |
| Capsule                     | 1 (4.3%)        | 4 (7.27%)        |
| <b>• Source of bleeding</b> |                 |                  |
| Peptic disease              | 7 (30.4%)       | 19 (34.6%)       |
| Angiodysplasia              | 2 (8.70%)       | 26 (47.3%)       |
| Polyps                      | 3 (13.0%)       | 14 (25.5%)       |
| Hemorrhoids                 | 3 (13.0%)       | 7 (12.7%)        |
| Diverticulosis              | 5 (21.7%)       | 14 (25.5%)       |
| Esophageal disease          | 2 (8.7%)        | 2 (3.64%)        |
| Duodenal disease            | 4 (17.4%)       | 2 (3.64%)        |
| Ischemic colitis            | 0 (0.0%)        | 2 (3.64%)        |
| <b>• Location of lesion</b> |                 |                  |
| No source identified        | 5 (21.7%)       | 9 (16.3%)        |
| Stomach                     | 3 (13.0%)       | 27 (49.1%)       |
| Small intestine             | 3 (13.0%)       | 25 (45.5%)       |
| Large intestine             | 3 (13.0%)       | 30 (54.5%)       |
| Ano-rectal                  | 3 (13.0%)       | 8 (14.5%)        |

Comparing diagnostic yield of pre vs post-LVAD endoscopy; for detecting possible sources of GI bleeding.

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