



# Efficacy and Safety of Hemorrhoid Energy Therapy in Hemorrhagic Internal Hemorrhoids: A Single Center Retrospective Study

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## INTRODUCTION

Internal hemorrhoids (IH) are the common cause of rectal bleeding. Hemorrhoid energy therapy (HET) is one accepted modality to treat symptomatic grades 1 and 2 IH. However, there are limited literatures regarding its use. We conducted a single center retrospective study with the largest sample size by far to evaluate the efficacy and safety of this therapeutic option in symptomatic internal hemorrhoids.

## METHODS

- Patients with symptomatic IH were enrolled in the study between 12/2019 and 09/2021 with Augusta University IRB approval.
- Baseline characteristics, age, gender, race, BMI, grades of IH, constipation, anticoagulation, and history of hemorrhoidal treatments were obtained.
- Post procedure follow-up was conducted by phone or clinic visit in 4 to 12 weeks post procedure to assess the endpoints including resolution of IH bleeding, bleeding recurrence, and complications.

Mean Age	55 ± 12.22
Female	59 (59%)
Male	41 (41%)
Race	
White	46 (46%)
Black	46 (46%)
Asian	4 (4%)
Hispanic	4 (4%)
Mean BMI	30.23 ± 6.23
Internal hemorrhoid size	
Grade 1	63 (63%)
Grade 2	27 (27%)
Grade 3	10 (10%)
Coexisting external hemorrhoid	48
Constipation	45
Anticoagulation use	10
History of hemorrhoids banding	8
Cycles of HET	
1 cycle	95
2 cycles	4
3 cycles	1

Improvement of hemorrhoid symptoms	89 (89%)
Resolution of internal hemorrhoid bleeding	83 (83%)
Improved hemorrhoid bleeding	6 (6%)
Recurrent hematochezia after HET	11
Grade 1 with constipation	3
Grade 2 with constipation	2
Grade 3 internal hemorrhoids	5
Rectal prolapse (grade 1)	1

Improvement of hemorrhoid symptoms	84 (93%)
Resolution of symptoms	79 (83%)
Improved symptoms	5 (5%)
Recurrent hemorrhoid bleeding	6 (6%)

Mild rectal pain	8
Transient rectal bleeding	4

Table 1: Baseline Characteristics of the study; table 2: Primary endpoints; table 3: HET efficacy in grade 1 and grade 2 internal hemorrhoids; table 4: Post HET complications

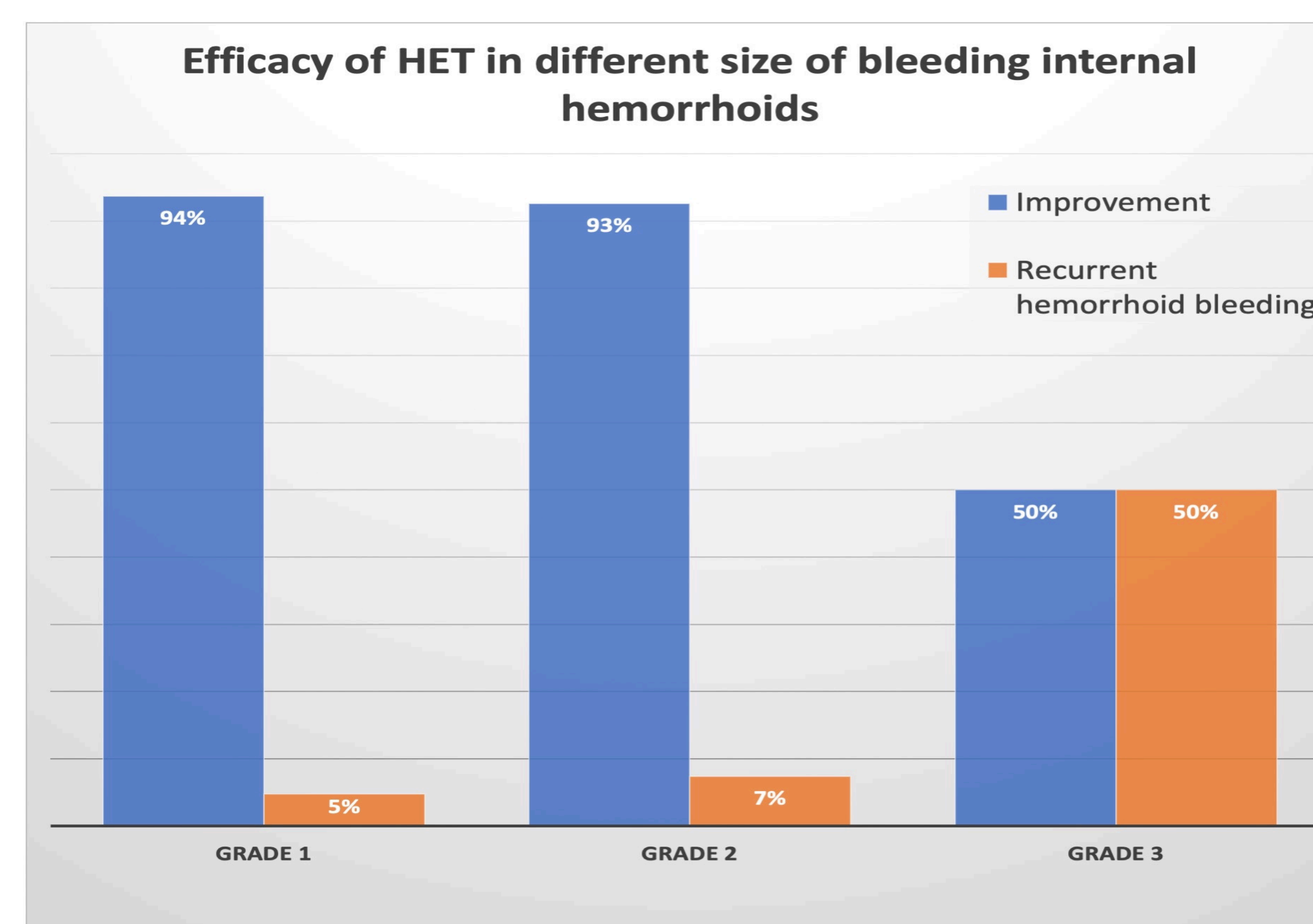


Figure 1: Efficacy of HET in different size of bleeding internal hemorrhoids

## RESULTS

- A total of 100 patients (male 41%, female 59%, mean age of 55 ± 12.22) with bleeding IH were included. Characteristics of IH included 63% as grade 1, 27% as grade 2, and 10% as grade 3. Ten patients (10%) were on anticoagulation, but appropriately held prior to procedure. Mean follow-up time was 8 weeks.
- The overall resolution rate of IH bleeding was 89% (n=89). Of note, 93% (n=84) in grades 1 and 2 IH. In a subgroup analysis, resolution rate was 94% (n=59) in grade 1 IH, 93% (n=25) in grade 2 IH, and 50% (n=5) in grade 3 IH.
- 11 cases had recurrent hemorrhoidal bleeding after HET. Among them, 5 were grade 3 IH; 3 were grade 1 IH with severe constipation; 2 were grade 2 IH with severe constipation; and 1 had rectal prolapse.
- Transient rectal pain and minimal rectal bleeding were noted in 7 and 10 cases post HET respectively.

## DISCUSSION

- The efficacy of HET in symptomatic IH varied from 81% to 97% in previous studies. But the quality of those studies was limited by small sample size. Our study is the largest study to date. It showed 89% overall resolution rate.
- Our study included grade 3 IH that reduced the efficacy due to high rebleeding of 50% in this subgroup. Higher efficacy of 94% was seen if the treatment was only applied to grades 1 or 2 IH. It suggests that grade 3 IH may not be best managed by HET.
- Constipation post HET appears to be a factor for recurrent bleeding and should be appropriately managed. None of the patients on anticoagulation had rebleeding after HET in our study.
- Rectal pain and mild rectal bleeding were reported complications, but usually resolved within 2-3 days.