Accuracy of Melena Identification on Physical Exam in Post Graduate Training – Implications of Level of Training, Medical Specialty, Rectal Exam Concordance and Appropriateness of Therapy

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Introduction

Melena is commonly misidentified by young resident physicians.

The magnitude of this inaccurate physical exam has not been quantified.

Precise identification of melena may have important diagnostic and therapeutic implications.

Aims

• To identify the prevalence of rectal exams and accuracy of melena identification in regards to level of training and medical specialty

• To determine the association of accurate melena identification with appropriateness of medical therapy and resource utilization.

Methods

Retrospective analysis of Internal Medicine (IM) and Emergency Medicine (EM) residency cohort at a tertiary academic center. 10 consecutive months in an academic year.

Inclusion Criteria:
Episodes of care of adult inpatients with anemia, overt or occult GI bleed (GIB) with a GI consultation. (n=321)

Clinical Data Reviewed:
- Rectal exams(RE) of GI consultant (GI) and residents were analyzed based on post grad years (PGY) in training and residency specialty.

-Primary Outcome:
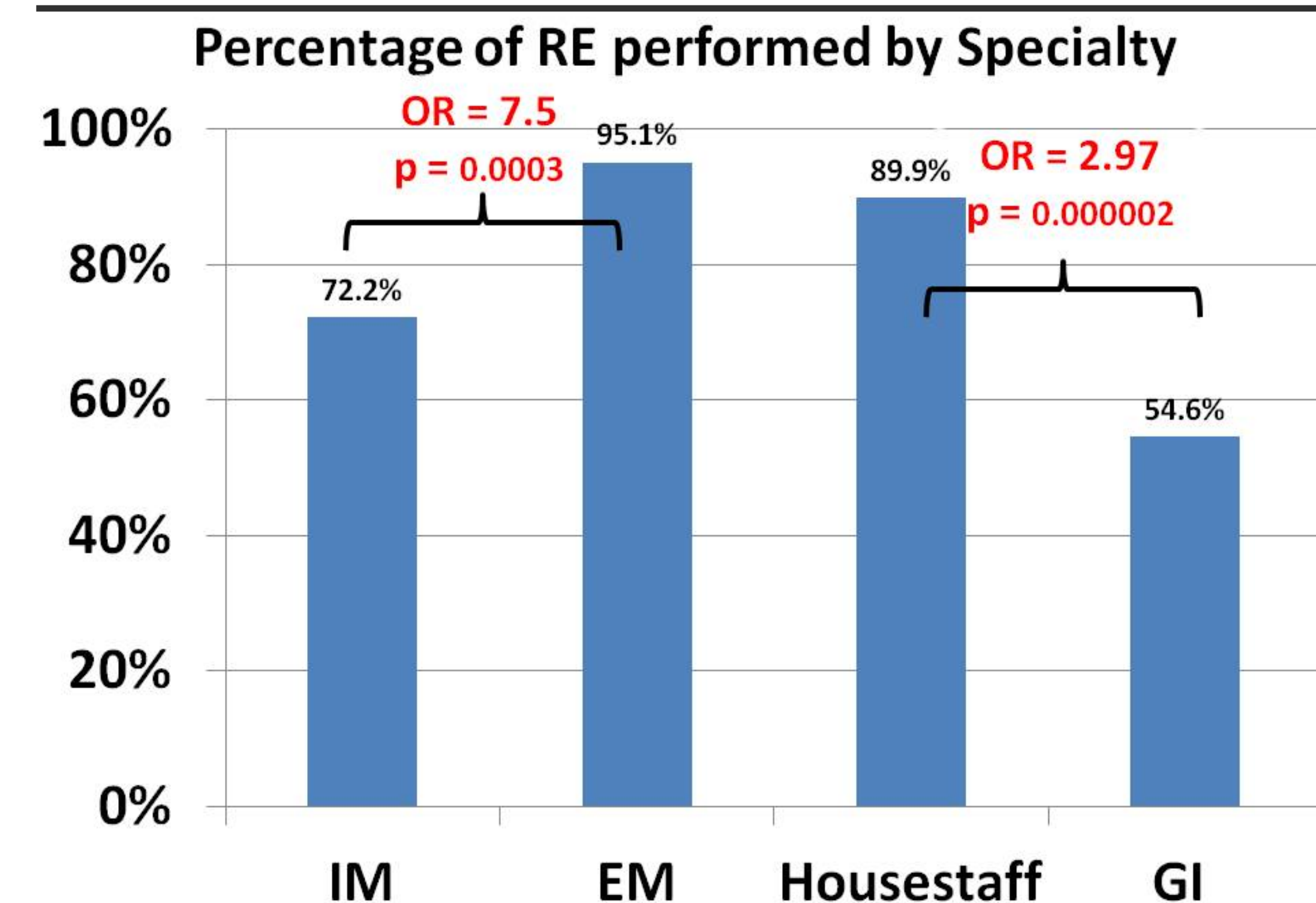Concordance Rate (CR) of melena on exam between residents and GI consultant

-Secondary Outcomes:
CR correlation with-
1. Endoscopic findings
2. Proton Pump Inhibitor type (PO, IV, gtt) appropriateness based on endoscopic findings
3.ICU requirement

Statistical significance via Fisher Exact Probability testing.

Results

· 57% of GIB/Anemia consults w/ any documented Rectal Exam(RE)
· 20% had RE by both residents and GI consultant

Percentage of RE performed by Specialty

- IM: 72.2%
- EM: 95.1%
- Housestaff: 89.9%
- GI: 54.6%
- OR = 7.5, p = 0.0003 (IM vs EM)
- OR = 2.97, p = 0.000002 (Housestaff vs GI)

Rectal Exam Concordance based on stool color:

Stool Color	Concordance	p value
Maroon	33.3%	0.75
Green	16.7%	0.62
Brown	15.4%	0.06
Melena	45.5%	0.002
		p = 0.003

*Dark Brown is the most common discordant exam**

RE Concordance Rate by PGY Level

P = 0.25

- PGY 1: ~56%
- PGY 2: ~33%
- PGY 3: ~14%
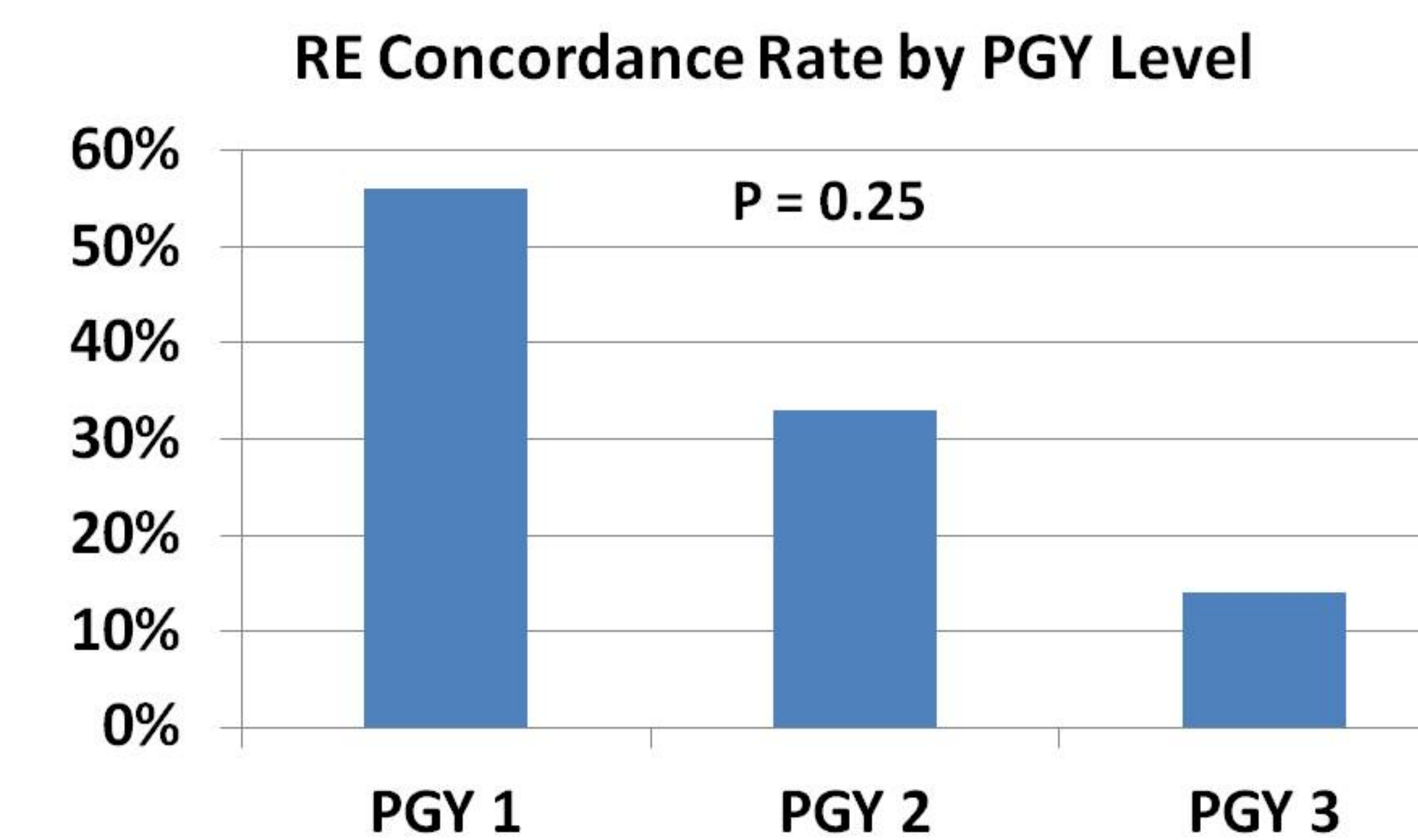
Concordance rate inversely proportional to PGY level

Secondary Outcomes:

1.Melena Endoscopic Findings

Location	Number	Percentage
Esophagus	4	7.7%
Stomach	19	36.5%
Small Bowel	7	13.5%
Colon	8	15.4%
NA	11	21.2%
Normal	3	5.8%

2. ICU requirement association with RE

RE performed in 71% (ICU pt) vs 86% (non ICU)
(p = 0.31)

3. PPI appropriateness

A. Melena:
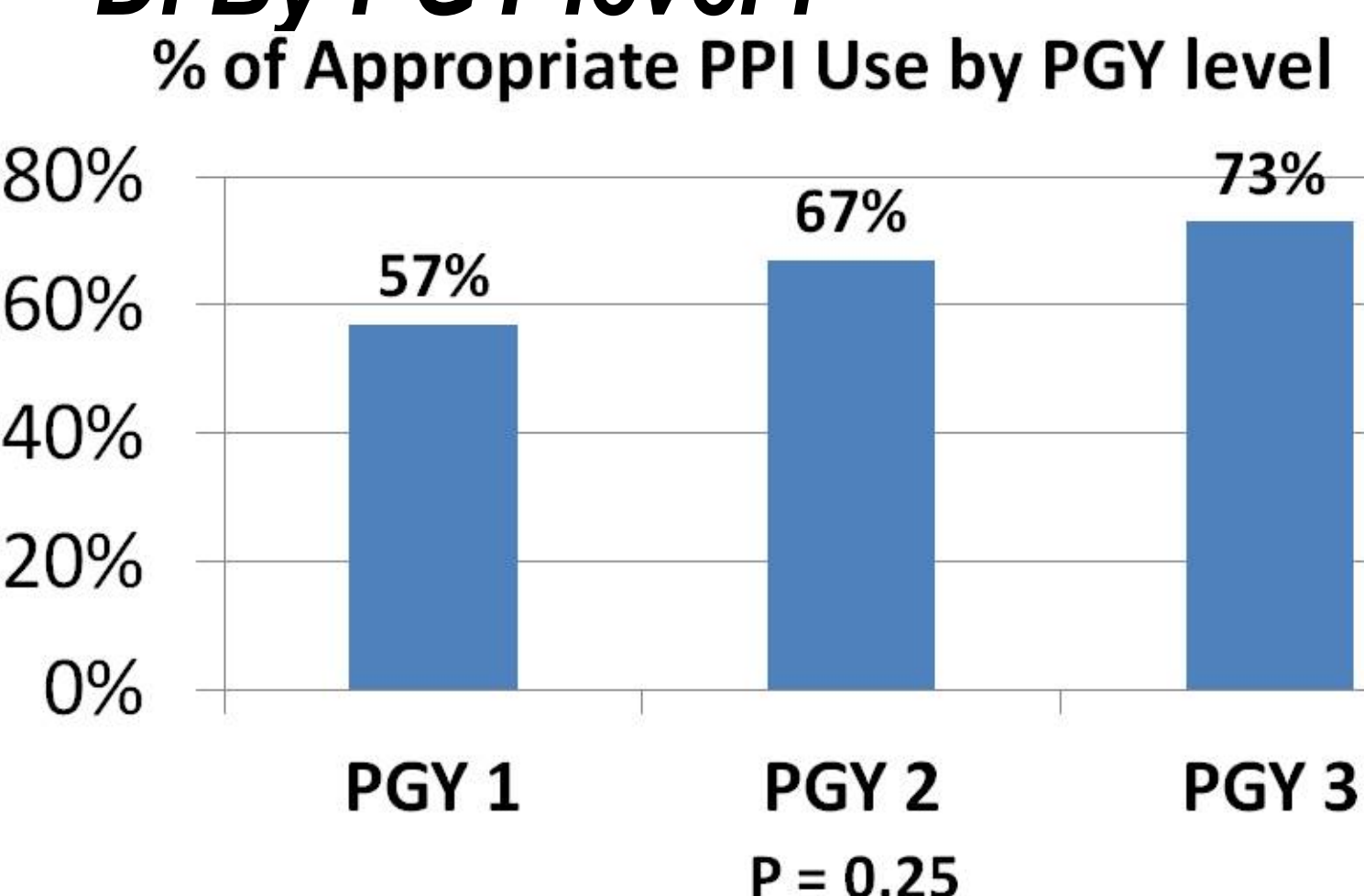90% (concordance) vs 83% (discordant) (p = 0.57)

B. RE performed:
64% (RE) vs 58% (no RE)
(p = 0.26)

C. Concordant Exam:
71% vs 74% (p = 0.56)

D. By PGY level :

% of Appropriate PPI Use by PGY level

- PGY 1: 57%
- PGY 2: 67%
- PGY 3: 73%
- P = 0.25

Conclusions

• The overall rate of rectal exams performance/documentation is low. 43% did not have RE.

• EM residents perform indicated rectal exams significantly more frequently than IM and GI consultants.

• Melena is misidentified more than 50% of the time, with Dark Brown stool most commonly misidentified as melena.

• A trend of decreased concordance with higher PGY level was observed.

• Rectal exam concordance is not associated with level of care or appropriateness of PPI use.

• Further education is needed in residency training to accurately identify melena.

References

• Fine KD, et al. Comparison of the color of fecal blood with the anatomical location of gastrointestinal bleeding lesions: potential misdiagnosis using only flexible sigmoidoscopy for bright red blood per rectum. Am J Gastroenterol. 1999 Nov; 94(11):3202-10.

• Zuckerman, GR et Al. An Objective measure of Stool Color for Differentiating Upper from Lower Gastrointestinal Bleeding. Digestive Diseases and Sciences. Vol 40. No8. 1995.

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