

INTRODUCTION

- **Robotic assisted radical prostatectomy (RARP)** quickly has become the **gold standard** treatment for **localized prostate cancer**
 - Decreased blood loss
 - Time to convalescence
 - Improved visualization of the surrounding neurovasculature

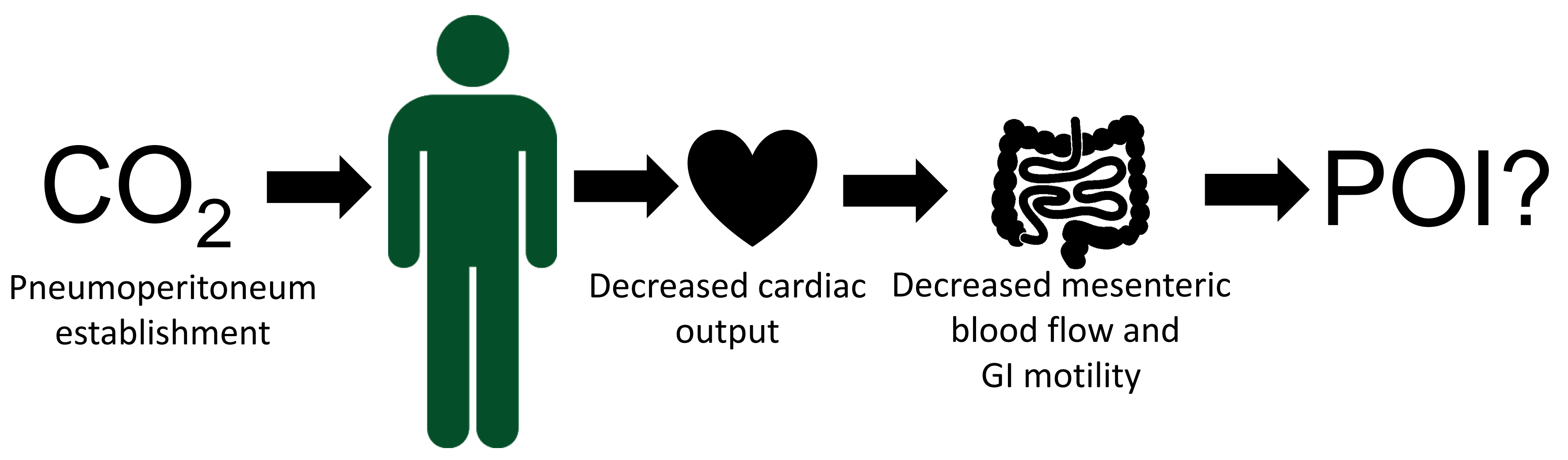


Figure 1. Physiologic effects of pneumoperitoneum on GI system

- **Institutional retrospective review** of 407 patients undergoing RARP
 - 15 mmHg vs. 12 mmHg
 - **Clinically and statistically significant decrease in POI rates from 12% to 5% (p<0.05)**
 - No difference in postoperative or oncologic outcomes

OBJECTIVES

- The objective of the study was to perform a **prospective double blinded randomized controlled trial** of men undergoing RARP at a pneumoperitoneum pressure of **8 mmHg vs 12 mmHg**
- Primary outcome: Postoperative ileus rates
- Secondary outcome: Demonstrate non-inferiority by evaluating hospital length of stay, total length of operation, total length of pneumoperitoneum, estimated blood loss, Clavien-Dindo complication scores and positive surgical margin status

METHODS

- Data collected by a **single high volume robotic surgeon (TJM)** over a two year period
- Inclusion criteria
 - 40+ years old and diagnosed with prostate cancer by TRUSP-bx
- Exclusion criteria
 - No prior localized therapy or metastatic disease at diagnosis
- **Postoperative ileus (POI)** was defined by the **standardized international consensus panel definition**: “the occurrence of two or more symptoms on postoperative day four or after: nausea and vomiting, inability to tolerate diet, absence of flatus for 24 hours, abdominal distention or radiographic confirmation”

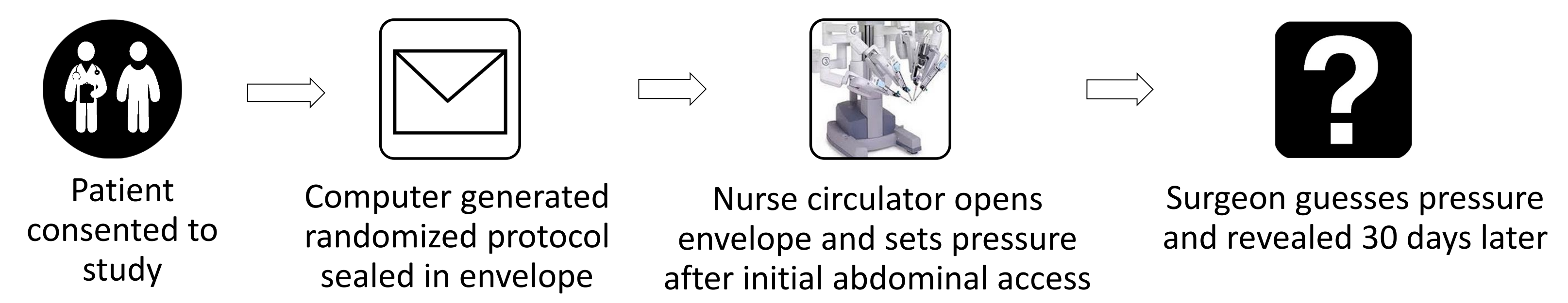


Figure 2. Process of Prospective Analysis

- Statistical analysis included summary descriptive analyses to compare variable mean values. Sample t-tests were performed for interval dependent variables. Chi-square was used to compare categorical data. P-values were considered significant at p < 0.05

Lower pressure pneumoperitoneum (8 mmHg) is non-inferior to higher pressure pneumoperitoneum (12 mmHg) and results in a clinically significant reduction in postoperative ileus

Postoperative Ileus Based on Pneumoperitoneum Pressure Level

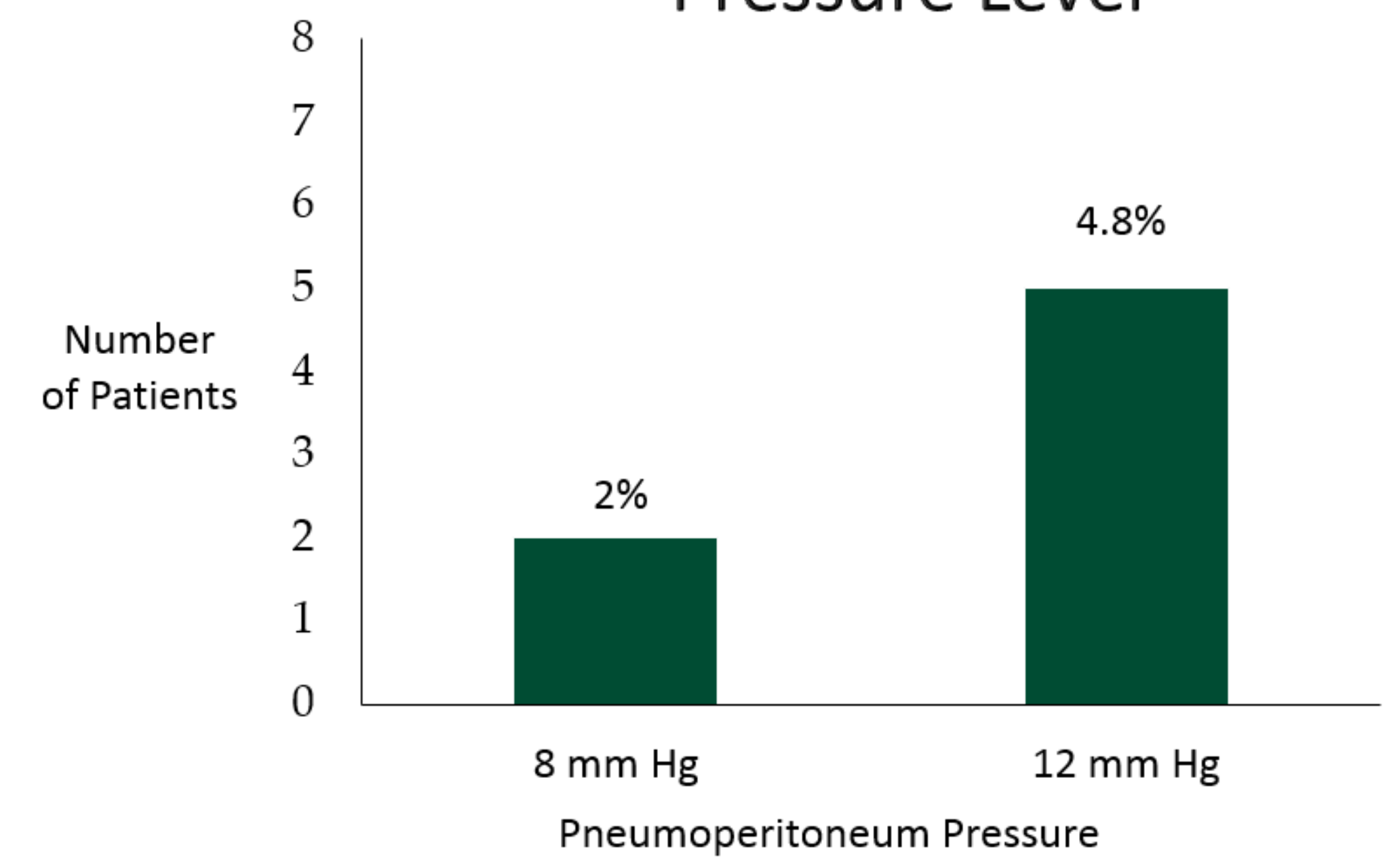
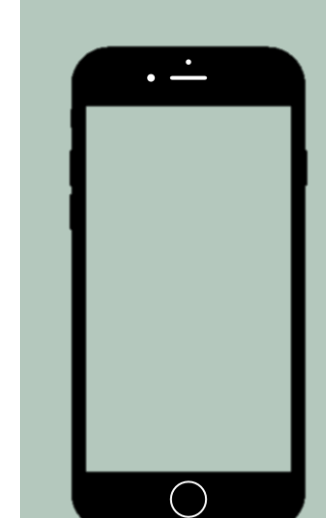


Figure 8. POI Rate and Corresponding Pneumoperitoneum Pressure



For more information about the retrospective study, scan the QR code

RESULTS

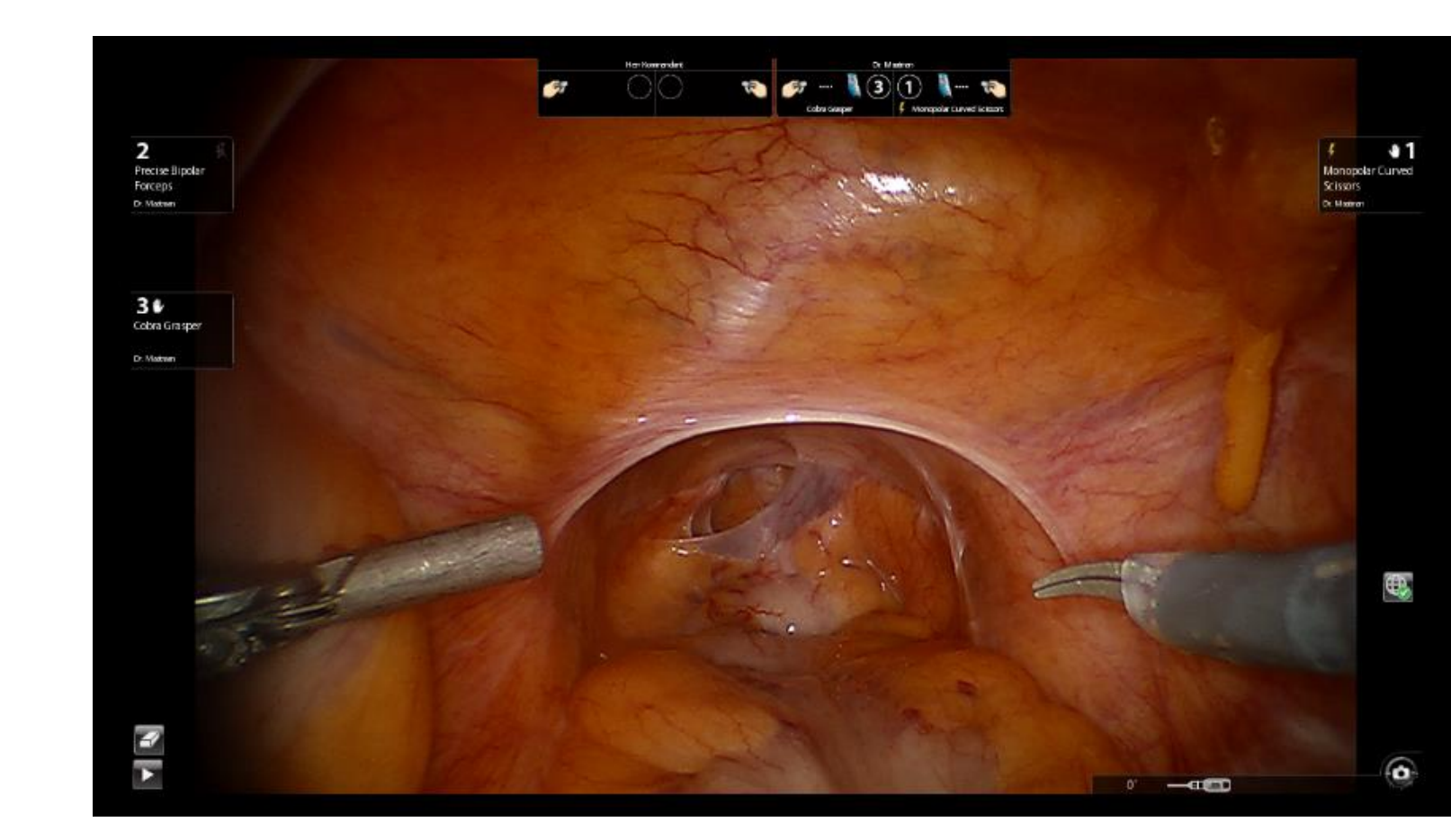
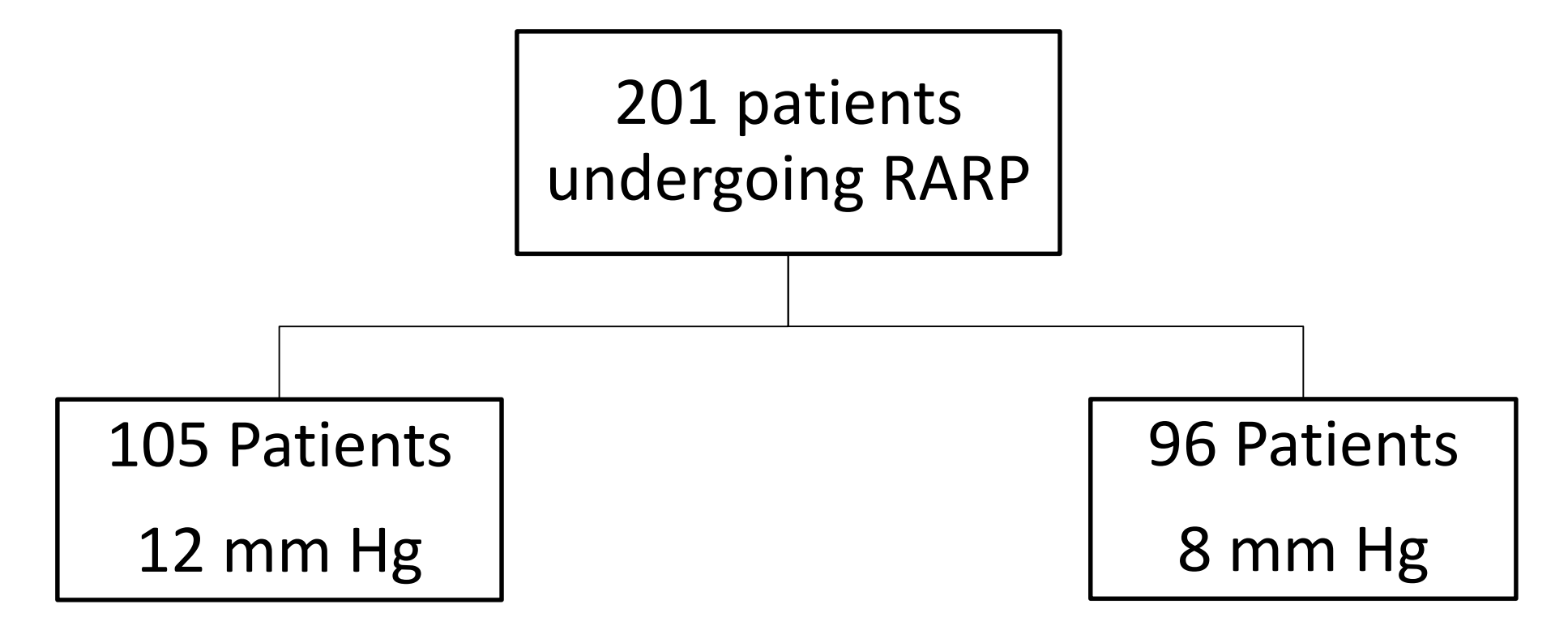


Figure 3. Visualization at pneumoperitoneum of 12mmHg

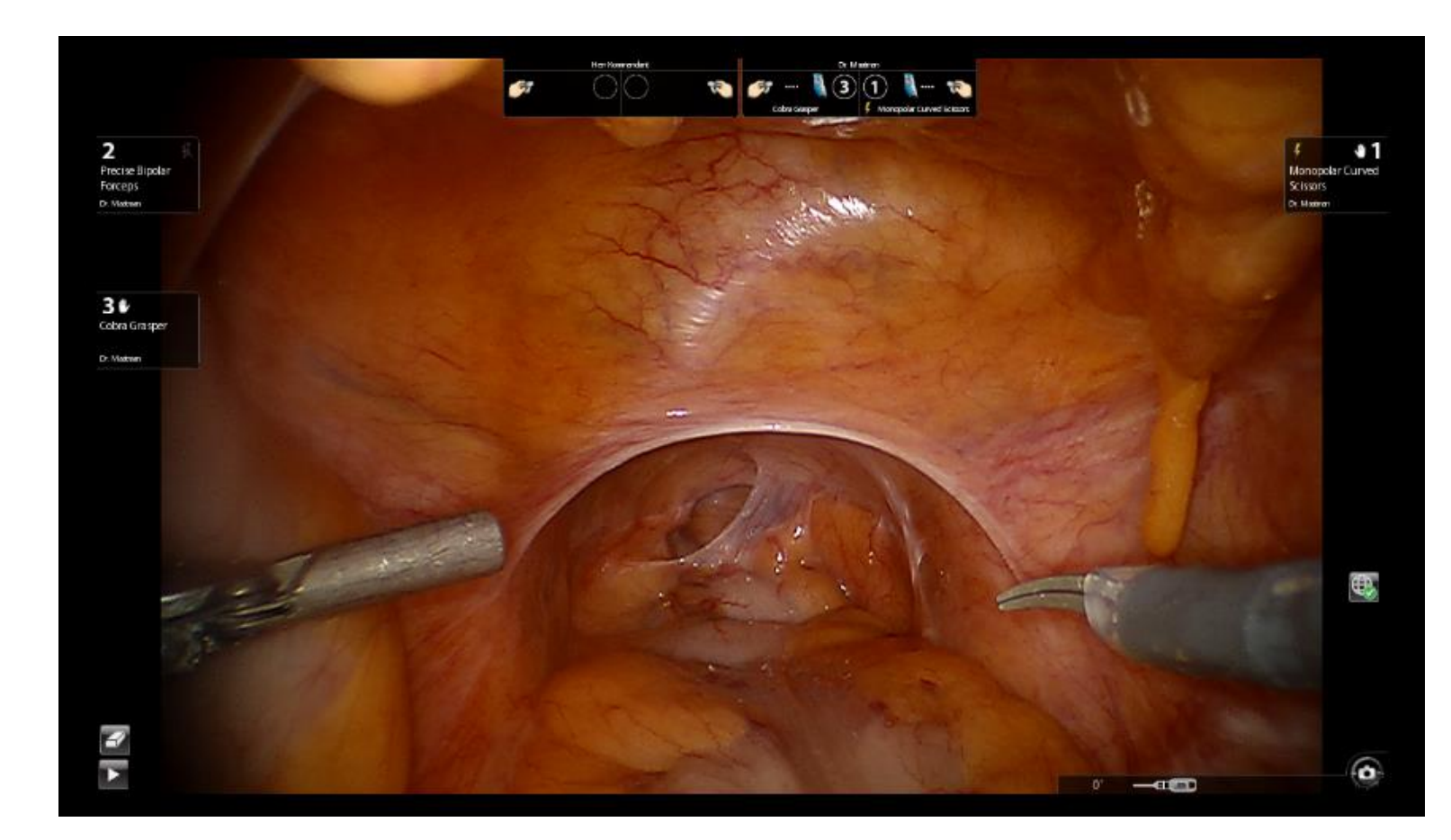


Figure 4. Visualization at pneumoperitoneum of 8mmHg

	12 mmHg (n=105)	8 mmHg (n=96)	p-value
Hospital Length of Stay (days) (IQR)	1.6 (1-15)	1.8 (1-14)	0.66
Total Length of Operation (minutes) (IQR)	121 (60-208)	128 (78-203)	<0.05
Total Length of Pneumoperitoneum (minutes) (IQR)	88 (41-164)	94 (49-180)	0.08
Length of Posterior Dissection (minutes) (IQR)	12 (4-25)	13 (6-40)	0.14
Estimated Blood Loss (mL) (IQR)	96 (0-970)	115 (5-840)	0.32
Prostate Weight (grams) (IQR)	55 (28-260)	62 (26-206)	<0.05
Intraoperative Maintenance Intravenous Fluids (mL) (IQR)	1184 (500-3000)	1120 (250-2700)	0.31
Intraoperative Narcotics (morphine equivalents) (IQR)	5 (0-12)	5.4 (0-20)	0.33
Positive Surgical Margin (%)	18.5%	18.5%	N/A

Table 1. Intraoperative and Postoperative Parameter Comparison

CLAVIEN DINDO COMPLICATION GRADE	8 mmHG	12 mmHG
GRADE I	8 (8%)	10 (9.5%)
POI	2	5
C. DIFFICILE INFECTION	1	1
HEMATURIA	1	1
GRADE II	2	3
ANASTOMOTIC LEAK	1	1
PULMONARY EMBOLISM	1	1
RESPIRATORY INFECTION	1	1
SYMPTOMATIC ANEMIA	1	1
GRADE IIIA	0	0
GRADE IIIB	3	1
SADDLE PE	1	1
RECTAL DIVERSION	1	1
ENTEROTOMY DURING LOA	2	2
GRADE IV+	0	0

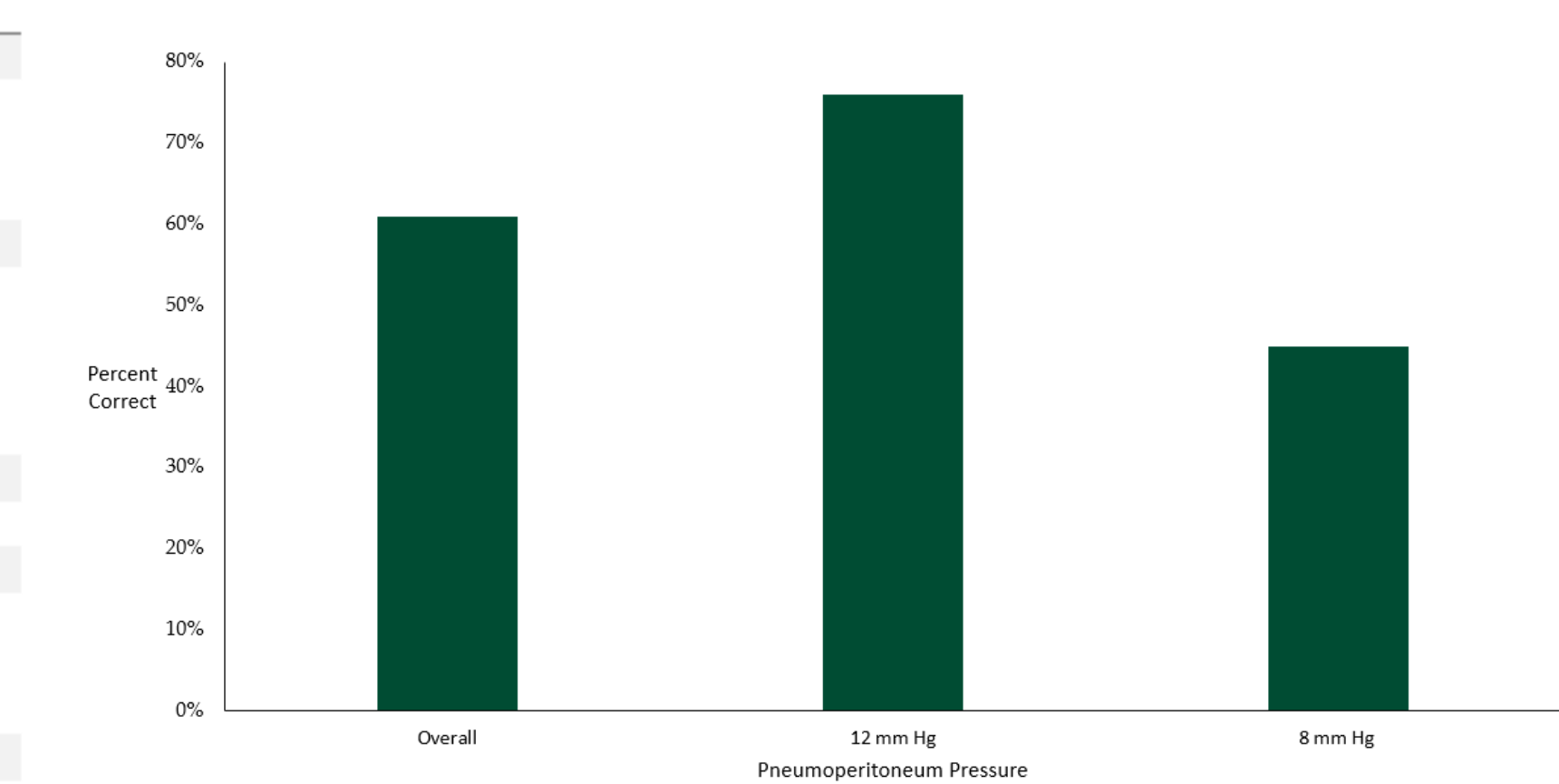


Figure 5. Surgeon Perception of Pneumoperitoneum

Table 2. Clavien Dindo Classification Complications

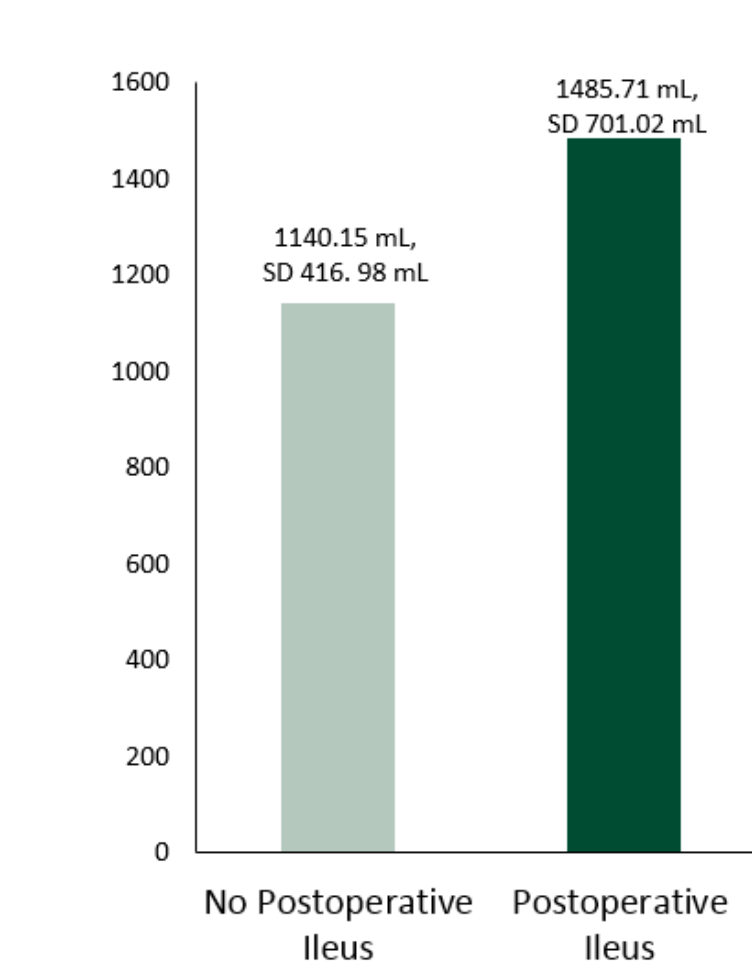


Figure 6. mIVF Effect on POI (p<0.05)

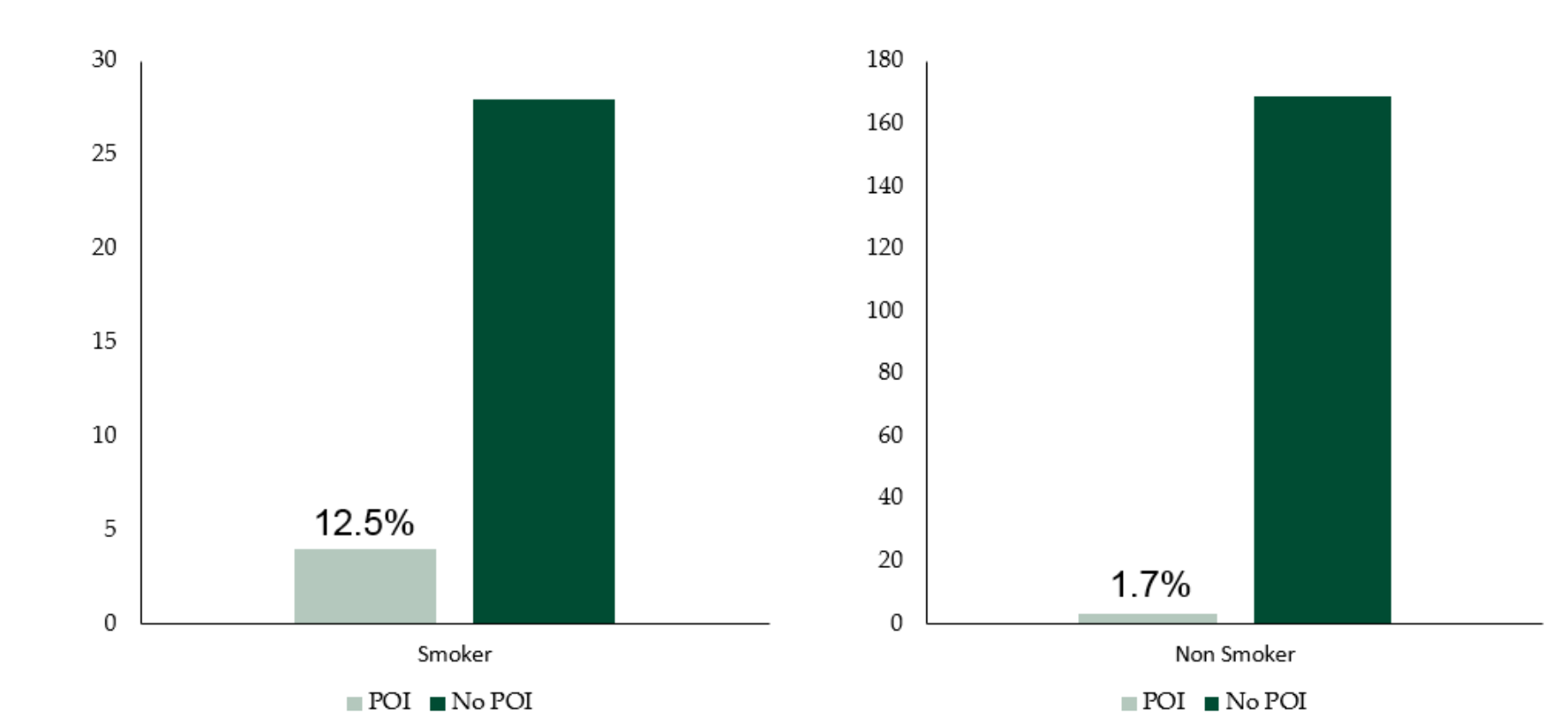


Figure 7. Tobacco Effect on POI (p<0.05)