Preparing for your Colonoscopy

Freddy Caldera D.O.
Nothing to Disclose
Objectives

- Discuss management of anti-platelet and anticoagulants prior to colonoscopy
- Discuss various types of bowel preparation agents
- Discuss split dose bowel preparation
Case Scenarios

- 50 year old with non valvular atrial fibrillation and HTN on warfarin.

- 55 year old with recent MI 3 months ago with two drug eluding stents on aspirin and clopidegrol for surveillance colonoscopy.

- 62 year old with atrial fibrillation and mechanical heart valve on warfarin for screening colonoscopy?
Should I stop anticoagulants/antiplatelet

- Depends on the agent
- Depends on reason for anticoagulation
  - Low risk
  - High Risk
- Depends on the type of endoscopy
  - Elective
  - Diagnostic
High risk vs. Low risk

<table>
<thead>
<tr>
<th>Higher-risk condition</th>
<th>Low-risk condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrial fibrillation associated with valvular heart disease, prosthetic valves, active</td>
<td>Uncomplicated or paroxysmal nonvalvular atrial fibrillation</td>
</tr>
<tr>
<td>congestive heart failure, left ventricular ejection fraction &lt;35%, a history of a</td>
<td>Bioprosthetic valve</td>
</tr>
<tr>
<td>thromboembolic event, hypertension, diabetes mellitus, or age &gt;75 y</td>
<td>Mechanical valve in the aortic position</td>
</tr>
<tr>
<td>Mechanical valve in the mitral position</td>
<td>Deep vein thrombosis</td>
</tr>
<tr>
<td>Mechanical valve in any position and previous thromboembolic event</td>
<td></td>
</tr>
<tr>
<td>Recently (&lt;1 y) placed coronary stent</td>
<td></td>
</tr>
<tr>
<td>Acute coronary syndrome</td>
<td></td>
</tr>
<tr>
<td>Nonstented percutaneous coronary intervention after myocardial infarction</td>
<td></td>
</tr>
</tbody>
</table>
Two studies prospective

In 1024 patients on anticoagulation the risk of thromboembolic event was 0.7%
  - In all those patients none received bridging therapy

<table>
<thead>
<tr>
<th>Primary Indication</th>
<th>No. of Patients</th>
<th>Received Bridging Therapy (on First Interruption), No. (%)</th>
<th>No. of Total Interruptions</th>
<th>Received Bridging Therapy, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrial fibrillation</td>
<td>550</td>
<td>15 (2.7)</td>
<td>690</td>
<td>17 (2.5)</td>
</tr>
<tr>
<td>Venous thromboembolism</td>
<td>144</td>
<td>15 (10.4)</td>
<td>201</td>
<td>22 (10.9)</td>
</tr>
<tr>
<td>Prosthetic valve</td>
<td>132</td>
<td>38 (28.8)</td>
<td>159</td>
<td>44 (27.7)</td>
</tr>
<tr>
<td>Stroke</td>
<td>93</td>
<td>7 (7.5)</td>
<td>117</td>
<td>10 (8.6)</td>
</tr>
<tr>
<td>Left ventricular dysfunction</td>
<td>34</td>
<td>2 (5.9)</td>
<td>43</td>
<td>2 (4.7)</td>
</tr>
<tr>
<td>Other</td>
<td>71</td>
<td>11 (15.5)</td>
<td>83</td>
<td>13 (15.7)</td>
</tr>
<tr>
<td>Total</td>
<td>1024</td>
<td>88 (8.6)</td>
<td>1293</td>
<td>108 (8.4)</td>
</tr>
</tbody>
</table>
Second study

987 patients with atrial fibrillation undergoing 1137 procedures.

Overall risk 1.06/procedure

- The risk ranged from 0.31% for patients with non-valvular AF
- 2.93% for complex patients undergoing endoscopies combined or with comorbid illnesses
### TABLE 5. Periprocedural management of warfarin for patients with atrial fibrillation or valvular heart disease undergoing elective endoscopy

<table>
<thead>
<tr>
<th>Condition</th>
<th>Associated diagnosis</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atrial fibrillation</td>
<td>None</td>
<td>Hold warfarin 3-5 days before procedure. Restart warfarin within 24 h.*</td>
</tr>
<tr>
<td></td>
<td>Mechanical valve(s) and/or history of cerebrovascular accident, transient ischemic attack, or systemic embolism</td>
<td>Hold warfarin and start UFH when INR ≤ 2.0. Stop UFH 4-6 h before procedure and restart after procedure. Resume warfarin on the evening of the procedure and continue both agents until INR is therapeutic.* Therapeutic doses of SQ UFH or LMWH may be considered in lieu of IV UFH.</td>
</tr>
<tr>
<td>Valvular heart disease</td>
<td>Mechanical bileaflet, aortic valve</td>
<td>Hold warfarin 48-72 h before procedure for a target INR &lt; 1.5. Restart warfarin within 24 h.*</td>
</tr>
<tr>
<td></td>
<td>Mechanical mitral valve or mechanical aortic valve plus any of the following: atrial fibrillation, previous thromboembolic event, left ventricular dysfunction, hypercoagulable condition, mechanical tricuspid valve or &gt; 1 mechanical valve</td>
<td>Hold warfarin and start UFH when INR ≤ 2.0. Stop UFH 4-6 h before procedure and restart after procedure. Resume warfarin on the evening of the procedure and continue both agents until INR is therapeutic.* Therapeutic doses of SQ UFH or LMWH may be considered in lieu of IV UFH.</td>
</tr>
</tbody>
</table>

*UFH, Unfractionated heparin; INR, international normalized ratio; SQ, subcutaneous; LMWH, low molecular weight heparin.

*Continuation or reinitiation of anticoagulation should be adjusted according to the stability of the patient and estimated risks surrounding the specific intervention/procedure performed. This table was adapted from the following guidelines: 2006 Guidelines for the Management of Patients with Atrial Fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines.

30 2006 guidelines for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines.
Antiplatelet agents

- Need to know the indication
- Elective procedure should be delayed
  - Patients with recent coronary stent placement with risk of stent thrombosis and death
- Aspirin/NSAIDS
  - Prospective study risk <1% of trace post polypectomy bleeding
  - Large retrospective studies no bleeding
Clopidogrel

- Small amount of data in potential for post polypectomy bleeding
- Retrospective studies
  - Have shown small risk
- Should be held 7–10 days prior to procedure
- Can be initiated the next day.
Dipyridamole

- Safety is unknown in patient undergoing polypectomy
- Held for 3 days.
- Can be restarted day of exam.
Resumption of anticoagulation

- No consensus optimal timing
  - Need two weigh risk vs. benefit

- One study
  - In 94 patients undergone polypectomy
    - Restarted warfarin day after exam.
    - 1 case of procedure related bleeding
AHA/ACC guidelines

- Low risk of thromboembolism
  - Warfarin be restarted within 24 hours of the procedure

- High risk of thromboembolism
  - UFH or LMWH be restarted 2–6 hours later and continue until INR reaches therapeutic level.
Case Scenarios

- 50 year old with non valvular atrial fibrillation and HTN on warfarin.

- 55 year old with recent MI 3 months ago, two drug eluding stents on aspirin and clopidegrol for surveillance colonoscopy.

- 62 year old with atrial fibrillation and mechanical heart valve on warfarin for screening colonoscopy?
Post polypectomy bleeding incidence
- Approximately 0.3%–2%

Bleeding
- Immediately following polypectomy
- Delayed from hours to up to 29 days

Risk of bleeding depends on
- Polyp size
- Type of polyp
- Technique of polypectomy
- Coagulation status of the patient

Bleeding can be controlled endoscopically in the majority of patients
Adequate bowel preparation is essential before colonoscopy.
Day prior to exam

- Clear liquids
  - Begin the morning prior to exam
  - Can have liquids up two hours prior to exam.
Day prior to exam

- Clear liquids
  - Fruit juices
    - without pulp, such as grape juice, filtered apple juice, and cranberry juice
  - Soup broth
  - Clear sodas, such as ginger ale and Sprite
  - Gelatin (Jell-O)
  - Popsicles that do not have bits of fruit or fruit pulp in them
  - Tea or coffee with no cream or milk added
  - Sports drinks
Traditional Dosing

- Follow clear liquid diet one day prior to exam.
- Drinking the entire volume of solution the night before
Recent Harris poll stated 83% of patients undergoing a screening colonoscopy stated that the bowel preparation was the most undesirable aspect.
Figure 1. Common reasons that deter patients from undergoing screening colonoscopy. Not every reason was examined by each study reviewed.
Bowel Preparation Agent
Sodium Phosphate Agents

- Lower volume
- Draw fluid into lumen
  - Causes electrolyte changes
  - Significant hyperphosphatemia and hypocalcemia in normal patients
- In 2008 the FDA placed a black box warning on sodium phosphate products
  - Removed as over the counter agent
- They were associated with
  - Acute phosphate nephropathy
  - Acute renal failure
Polyethylene Glycol (PEG) most commonly used

Polyethylene glycol agents
- High molecular weight molecule poorly absorbed.
- Causes osmotic gradient

4L of PEG
- Golytely, Nulytely

2L of PEG
- Half Lytely 2L based agents with bisacodyl
- Moviprep  PEG based with ascorbic acid
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>VOLUME (ML)</th>
<th>PRICE ($)</th>
<th>GENERAL INSTRUCTIONS TO PATIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GoLYTELY flavored</td>
<td>4,000</td>
<td>19.70</td>
<td>Take 240 mL or 8 oz (1 cup) every 10 minutes beginning around 6 PM the evening before colonoscopy.</td>
</tr>
<tr>
<td>GoLYTELY unflavored</td>
<td>4,000</td>
<td>18.45</td>
<td>For split dosing, take half of the solution the evening before colonoscopy and half on the morning of colonoscopy.</td>
</tr>
<tr>
<td>Colyte flavored</td>
<td>4,000</td>
<td>25.63</td>
<td></td>
</tr>
<tr>
<td>Colyte unflavored</td>
<td>4,000</td>
<td>25.63</td>
<td></td>
</tr>
<tr>
<td>NuLyte (sulfate-free)</td>
<td>4,000</td>
<td>26.89</td>
<td></td>
</tr>
<tr>
<td>Trilyte flavored (sulfate-free)</td>
<td>4,000</td>
<td>27.98</td>
<td></td>
</tr>
</tbody>
</table>

**Low-volume solutions**

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>VOLUME (ML)</th>
<th>PRICE ($)</th>
<th>GENERAL INSTRUCTIONS TO PATIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HalfLyte</td>
<td>2,000</td>
<td>51.01</td>
<td>Take two bisacodyl delayed-release tablets at 12 noon the day before colonoscopy and then 240 mL (8 oz) of HalfLyte every 10 minutes beginning around 6 PM.</td>
</tr>
<tr>
<td>MoviPrep</td>
<td>2,000</td>
<td>50.08</td>
<td>Around 6 PM in the evening before the colonoscopy, take the first liter of MoviPrep solution over 1 hour (one 8-oz glass every 15 minutes); then about 1.5 hours later, take the second liter over 1 hour. In addition, take 1 L of additional clear liquid during the evening before the colonoscopy. For split dosing, take half of the solution the evening before colonoscopy and half on the morning of colonoscopy, each with 0.5 L of clear liquid.</td>
</tr>
</tbody>
</table>

*Average wholesale prices, based on Red Book 2008 and 2009 updates. The actual cost to a patient may vary, depending on insurance coverage.*

*For detailed instructions about split dosing, see TABLE 2.*

*MiraLAX has been used off-label for bowel preparation. Instruct patient to mix one bottle (238 g) in 64 oz of Gatorade or Crystal Light and keep in refrigerator. Take four tablets of 5 mg bisacodyl at 4 PM, and start drinking the solution at a rate of 8 oz every 15 to 30 minutes. Price: $9.60.*
Miralax

- Laxative approved for constipation
- Commonly used as bowel preparation agent
- As a bowel preparation regimen
  - 14x the normal dose
- No clinical studies regarding its safety or clinical efficacy
- Usually mixed with 64oz of sports drink
- Better tolerability
Miralax

- Not an electrolyte balanced agent
- Not recommended in patients with
  - Kidney disease
  - Heart disease
  - Liver disease
  - Elderly
- Role in certain patients.
Sodium Sulfate

- Sulfate poorly absorbed anion
- Used originally in PEG solution
- Oral Sulfate Solution (OSS)
- 6oz of OSS dilute in 16 oz given with 32 oz of water
- Regimen repeated in the morning total 32oz of bowel preparation and 64 oz of water.
Sodium Sulfate

- Studies have not shown
  - Electrolyte imbalance
  - Urine did not form calcium precipitate

- As efficacious as 2L and 4L PEG based products.

- Role in certain patients
  - Would not recommend in elderly
  - Await more data
Intolerance of PEG based

Common complaints by patients

- Nausea
- Bloating
- Taste
Increasing patient adherence to PEG solutions

- Improve taste
  - Chilling the solution
  - Adding lemon slices or lemon juice
  - Adding Crystal Light

- Treat or prevent nausea or bloating
  - Adding metoclopramide (Reglan) 5 to 10 mg orally to prevent or treat nausea
  - Slow down the intake of solution
Try other options to decrease volume
  ◦ Adding magnesium citrate (1 bottle, about 300 ml) in patients without renal insufficiency
  ◦ Bisacodyl (two to four tablets of 5 mg each), so that the volume can be less

Consider other agents
  ◦ Miralax
  ◦ Sodium Sulfate
American Society Gastrointestinal Endoscopy (ASGE) guidelines define an inadequate bowel preparation
- being unable to identify polyps < 5mm.
- 20–30% colonoscopies will have an inadequate bowel preparation
<table>
<thead>
<tr>
<th>Predictor</th>
<th>Odds Ratio*</th>
<th>95% CI</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure time</td>
<td>1.15†</td>
<td>(1.05, 1.25)</td>
<td>0.002</td>
</tr>
<tr>
<td>Preparation instructions not followed</td>
<td>2.68</td>
<td>(1.52, 4.75)</td>
<td>0.001</td>
</tr>
<tr>
<td>History of cirrhosis</td>
<td>3.71</td>
<td>(1.17, 11.75)</td>
<td>0.026</td>
</tr>
<tr>
<td>Inpatient status</td>
<td>3.13</td>
<td>(1.15, 8.50)</td>
<td>0.025</td>
</tr>
<tr>
<td>Indication: constipation</td>
<td>2.81</td>
<td>(1.10, 7.20)</td>
<td>0.031</td>
</tr>
<tr>
<td>Current medication: tricyclic antidepressant</td>
<td>2.99</td>
<td>(1.10, 8.15)</td>
<td>0.033</td>
</tr>
<tr>
<td>Indication: history of polyps</td>
<td>0.55</td>
<td>(0.31, 0.98)</td>
<td>0.035</td>
</tr>
<tr>
<td>Male gender</td>
<td>1.54</td>
<td>(1.03, 2.30)</td>
<td>0.038</td>
</tr>
<tr>
<td>History of stroke or dementia</td>
<td>2.23</td>
<td>(1.00, 4.97)</td>
<td>0.050</td>
</tr>
</tbody>
</table>

* Odds ratios (odds of inadequate preparation among those with the risk factor compared with those without), CI, and p values all calculated using logistic regression.
† Odds/h later in the day.
Predictors of inadequate bowel

- Diabetes
- Narcotic use
- Length since taking bowel preparation
Figure 3. The correlation between bowel-preparation quality with the time interval between the last dose of the bowel-preparation agents and colonoscopy start time. For patients scored as excellent/good, the interval was significantly shorter than for those scored fair/poor/inadequate (13.6 vs 14.35 hours, respectively, $P = 0.013$).
Table 1. Effect of Bowel Preparation Quality on Outcome Measures

<table>
<thead>
<tr>
<th>Outcome</th>
<th>High-quality preparation</th>
<th>Low-quality preparation</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed preparation, %</td>
<td>90.4</td>
<td>71.1</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Time to cecum, min</td>
<td>11.9</td>
<td>16.1</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Withdrawal time, min</td>
<td>9.8</td>
<td>11.3</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Polyps detected, %</td>
<td>29.4</td>
<td>23.9</td>
<td>.007</td>
</tr>
<tr>
<td>Polyps &gt;10 mm detected, %</td>
<td>6.4</td>
<td>4.3</td>
<td>.016</td>
</tr>
</tbody>
</table>
TABLE 1. Impact of inadequate bowel preparation on colonoscopy

<table>
<thead>
<tr>
<th>Factor</th>
<th>Bowel preparation</th>
<th></th>
<th></th>
<th></th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adequate</td>
<td>Inadequate</td>
<td>( P ) value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency of colonoscopy</td>
<td></td>
<td></td>
<td></td>
<td>Froehlich et al\textsuperscript{29}</td>
<td></td>
</tr>
<tr>
<td>Mean procedure time, min</td>
<td>21.7</td>
<td>27.4</td>
<td>(&lt;.001)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completion of colonoscopy, % of cases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incomplete</td>
<td>2.2</td>
<td>19.3</td>
<td>(.001)</td>
<td>Nelson et al\textsuperscript{33}</td>
<td></td>
</tr>
<tr>
<td>Complete*</td>
<td>90.4</td>
<td>71.1</td>
<td>(&lt;.001)</td>
<td>Froehlich et al\textsuperscript{29}</td>
<td></td>
</tr>
<tr>
<td>Difficult colonoscopy, % of cases\textdagger</td>
<td>12.4</td>
<td>34.2</td>
<td>(&lt;.001)</td>
<td>Froehlich et al\textsuperscript{29}</td>
<td></td>
</tr>
<tr>
<td>Cost of colonoscopy, $\textdagger$</td>
<td>214,000-220,000</td>
<td>239,000-268,000</td>
<td>NA</td>
<td>Rex et al\textsuperscript{34}</td>
<td></td>
</tr>
<tr>
<td>Diagnostic yield of colonoscopy, % of cases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesion detection</td>
<td>29.1</td>
<td>26.4</td>
<td>(\leq.0001)</td>
<td>Harewood et al\textsuperscript{30}</td>
<td></td>
</tr>
<tr>
<td>Lesion detection</td>
<td>29.4</td>
<td>23.9</td>
<td>(.007)</td>
<td>Froehlich et al\textsuperscript{29}</td>
<td></td>
</tr>
</tbody>
</table>

*Not applicable.*
*Cecum reached.*
*Rated by endoscopist.*
*Estimated by using Medicare charges in a cohort of 200 individuals followed for 7 years.*
Split dose bowel preparation

- Preparation is given in two equal doses
  - one given on the evening before the exam
  - the other given on the day of the exam, at least 4 h before the procedure
Split dosing vs Traditional dosing

Traditional dosing
- leaves a long interval between the end of the preparation process and the start of the procedure.
- Thick intestinal secretions empty out of the small intestine during that interval and obscure the cecum and ascending colon.

Split dosing
- the second dose is completed a few hours before the procedure, cleaning out the remaining intestinal secretions and obviating this problem.
Figure 1. Single PM dose versus PM/AM split-dose bowel preparation. A) cecum after a PM-only purgative dose administered the evening before colonoscopy. B) cecum after the second dose of a PM/AM split-dose regimen.
# Split studies

## Table 2  Summary of clinical trials comparing same-day or split-dose preparation with evening-before preparation

<table>
<thead>
<tr>
<th>Reference</th>
<th>Agent</th>
<th>Design</th>
<th>% Adequate with split or same-day dosing</th>
<th>% Adequate with prep day before</th>
<th>% Excellent with split or same-day dosing</th>
<th>% Excellent with prep day prior</th>
<th>$P$</th>
<th>Other gains for split-dose preparations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church$^a$</td>
<td>PEG</td>
<td>Same</td>
<td>93%</td>
<td>73%</td>
<td>&lt;0.0001</td>
<td>64%</td>
<td>9%</td>
<td>0.0001</td>
</tr>
<tr>
<td>El-Sayed</td>
<td>PEG</td>
<td>Split</td>
<td>82.5%</td>
<td>69%</td>
<td>&lt;0.05</td>
<td>38.5%</td>
<td>18.8%</td>
<td>0.005</td>
</tr>
<tr>
<td>Aoun</td>
<td>PEG</td>
<td>Split</td>
<td>76.5%</td>
<td>56.2%</td>
<td>0.011</td>
<td>44.1%</td>
<td>5.5%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Park$^b$</td>
<td>PEG</td>
<td>Split</td>
<td>5.9</td>
<td>8.5</td>
<td>&lt;0.01</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Rostom</td>
<td>NaP</td>
<td>Split</td>
<td>91.4%</td>
<td>84.4%</td>
<td>&lt;0.05</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Parra-Blanco$^c$</td>
<td>NaP</td>
<td>Split</td>
<td>80%</td>
<td>7%</td>
<td>&lt;0.001</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Abdul-Baki</td>
<td>PEG</td>
<td>Split</td>
<td>88.9%</td>
<td>42.6%</td>
<td>&lt;0.001</td>
<td>38.3%</td>
<td>9.0%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Chiu</td>
<td>PEG</td>
<td>Split</td>
<td>93.3%</td>
<td>72.4%</td>
<td>0.003</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Frommer$^d$</td>
<td>NaP</td>
<td>Split</td>
<td>4.1/5</td>
<td>3.2/5</td>
<td>&lt;0.0005</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

*PEG* polyethylene glycol, *NaP* sodium phosphate, *NA* not available

Same: patients in test group received all preparation on day of colonoscopy
Studies have shown

- 10 RCT shown it works
- Works with all types of agents
- Patients are willing to do it.
Table 1 Breakdown of characteristics and willingness to undergo split-dose preparation among 300 survey subjects

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>All (N = 300)</th>
<th>Not willing to split dose (N = 46, 15%)</th>
<th>Willing to split dose (N = 254, 85%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous colonoscopy, N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>200</td>
<td>32 (16)a</td>
<td>168 (84)</td>
<td>0.65</td>
</tr>
<tr>
<td>No</td>
<td>100</td>
<td>14 (14)</td>
<td>86 (86)</td>
<td></td>
</tr>
<tr>
<td>Age in years, mean (SD)</td>
<td>56</td>
<td>56</td>
<td>56</td>
<td>0.87</td>
</tr>
<tr>
<td>Sex, N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>169</td>
<td>27 (16)</td>
<td>142 (84)</td>
<td>0.73</td>
</tr>
<tr>
<td>Male</td>
<td>131</td>
<td>19 (15)</td>
<td>112 (85)</td>
<td></td>
</tr>
<tr>
<td>Type, N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driver of colonoscopy patient</td>
<td>151</td>
<td>23 (15)</td>
<td>128 (85)</td>
<td>0.96</td>
</tr>
<tr>
<td>EGD patient</td>
<td>149</td>
<td>23 (15)</td>
<td>126 (85)</td>
<td></td>
</tr>
<tr>
<td>Preferred appointment time, N (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early morning</td>
<td>160</td>
<td>26</td>
<td>134</td>
<td>0.64</td>
</tr>
<tr>
<td>Mid morning</td>
<td>72</td>
<td>6</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Late morning</td>
<td>29</td>
<td>7</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Early afternoon</td>
<td>39</td>
<td>7</td>
<td>32</td>
<td></td>
</tr>
</tbody>
</table>

EGD: esophagogastroduodenoscopy

a Number of subjects (percent)
Advantages of split dosing

- Less inadequate bowel preparations
- Higher compliance
- Better patient tolerability
- Increased rate of detecting flat colon lesions
Concerns about split dosing

- Patients unwilling to wake up at night
- Having to stop travel due to having a bowel movement on way to hospital
Failed preps

- No consensus on optimal management
- Education on the importance of following instructions is key
- Providing split dose bowel preparation
- Split dose preparation.
Summary

- No need to hold ASA/NSAIDS prior to colonoscopy
- Identify the risk of withholding anticoagulation
Use of split dosing preparation

Educating patients about the importance of drinking all their bowel preparation is key.

Your colonoscopy is only as good as your prep.
How to write Script

- Take half of your bowel preparation at 6pm
- Take second half 5 hours prior to your procedure.