Improving the Adenoma Detection Rate

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ADR is a (the) priority quality indicator

- Endorsed
  - Adenoma Detection Rate
  - Cecal intubation rate
  - Screening and surveillance intervals
- Projected
  - Rates of adequate bowel preparation
Important Features of ADR

- ADR is a validated predictor of cancer prevention
  - Kaminski et al NEJM 2010;362:1795-803
  - Corley et al NEJM 2014;370:1298-1306
- ADR measurement
  - Original measure (2002): age $\geq$ 50 years
    - Rex et al AJG 2002;97:1296-308
  - Current measure (2006): first time screening exams age $\geq$ 50 years
    - Rex et al GIE 2006;63:S16-28

Weaknesses of ADR

- ADR can be gamed
  - “One and done” (corrected by “APC”)
    - Wang et al GIE 2013;77:71-8
  - Indication gaming
- ADR and serrated lesions
  - SSA/P not part of ADR measurement
    - Rex et al GIE 2015;81:31-53
  - Mixed data on correlation of ADR and serrated detection
    - Kahi et al GIE 2012;75:515-20
**Detection of Serrated Class Lesions is Important**

- A serrated detection target is not currently feasible
  - Differentiation of HP from SSP is subject to pathologist IOV
  - Total serrated class target would need to be colon location specific

**What is a good level of SSP detection?**

- Two recent studies of high level detectors and expert pathologists
  - 8.1%
    - Abdeljawad et al; GIE:2015;81:517
  - 9.0%
    - IJspeert et al Endoscopy 2016;48:571
What is master level ADR detection?

- Master level ADR is 47-48% plus
- Proven gains in cancer protection up to about 35%
- Minimum threshold is 25% in mixed gender population
- Should be discomfort with any ADR below 35%
- No need to adjust for population factor other than gender

There is a problem with master level detection
ADR and withdrawal time

- ADR and WT both predict cancer protection in retrospective studies
  - Shaukat Gastro 2015;149:952-7
- WT does not work consistently in prospective studies
- Adequate WT follows adequate technique
- WT and ADR are medical-legal “issues”
  - Everyone records scope in – scope out
  - WT should be recorded by the nurses or the EHR or the photographs
  - WT does get applied to medical-legal issues in individual cases

Major Issues in American Colonoscopy

- Toward effective and cost-effective protection against CRC (Rex opinion)
  1. Some are not measuring ADR
  2. Incomplete uptake of split dosing
  3. Use of shortened surveillance intervals
  4. Ineffective polypectomy technique
  5. Surgical resections of benign polyps
What are master detectors doing?

- Preprocedure steps
  - Know disease spectrum
  - Split or same day prep dosing
  - HD instruments
  - Measurement and reporting

The language of subtlety – Paris
Classification
Disease spectrum

Conventional adenomas

Serrated class

What are master detectors doing during withdrawal?

- Know disease spectrum
- Technique:
  - Look behind folds (obsessively)
  - Clean up debris
  - Distend the colon
Intraprocedural adjuncts

Non-device methods:
- Right colon retroflexion (double-examination)
- Patient rotation (maintenance of distention)

Maximized Detection of Adenomas and Serrated Lesions

Scope based methods:
- FUSE
- G-Eye
- Third Eye Panoramic
- Electronic Chromo*

Add-ons:
- Chromoendoscopy
- Vision and Amplify Endorings

RCT of second exam in retro vs forward view (Kushnir)

850 patients with right colon clearing

At least one more adenoma

Forward view 10.5%

P=0.13

Retro view 7.5%
Retroflexion: Bottom line

- Examine the right colon twice sometimes:
  - First exam shows polyps
  - Older age, male gender
  - Lynch syndrome
- A second exam in the forward view is as good as a second exam in retroflexion

RCTs of position change

<table>
<thead>
<tr>
<th>Study</th>
<th>Result</th>
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<tbody>
<tr>
<td>Rex 1997</td>
<td>No effect</td>
</tr>
<tr>
<td>East 2011</td>
<td>Positive (overall 11% gain in ADR)</td>
</tr>
<tr>
<td>Ou 2014</td>
<td>No effect</td>
</tr>
<tr>
<td>Ball 2015</td>
<td>Positive in right colon (8.5% gain in polyp detection; LLD vs supine) No effect in left colon</td>
</tr>
<tr>
<td>Lee 2016</td>
<td>Positive in transverse and left colon; overall 9.4% gain in ADR; significant gains in physicians with low baseline ADRs</td>
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**Mechanism in positive study**

- ADR with position change 34% vs 23% with LLD only
- ADR in segments with adequate distention scores 16% vs 7% with suboptimal scores
  - East GIE 2011; 73:456
  - East GIE; 2007;65:263

**Position change: bottom line**

- Hard to do with propofol; may not be safe
- Should be able to distend the colon without position change
  - Use CO₂
  - Prevent gas from escaping the colon
  - If still unable to fill segment use water
FUSE update

- Recent trial in FIT + Italian population was negative
  - Used older version FUSE optics
    - Hassan et al GUT doi 10.113/gutjnl-2016-311906
- Image quality has improved over time
- Stiffening wire for the floppier insertion tube
- “Lumos” available for IEE
Third Eye® Panoramic™ Device

- Two side-viewing video cameras with LED light sources supplement colonoscope's view
- Creates panoramic image (~ 330°)
- Clips onto exterior of any standard pediatric or adult colonoscope

Panoramic View in Normal Colon

The transformation of Endocuff
The transformation of EndoRings

Endorings
Summary

- Measurement of ADR is essential
- Master level ADR can be achieved with: full knowledge of disease spectrum, split-dosing, HD, and meticulous technique
- Low level detectors should:
  - Study disease spectrum and technique
  - Utilize one or more adjuncts
  - Re-measure ADR