The Future of Health in Europe, Brussels, 9th May 2007

Prevention of Colorectal Cancer in Europe - Quality Assurance of Screening Colonoscopy

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Study Questions Colonoscopy Effectiveness

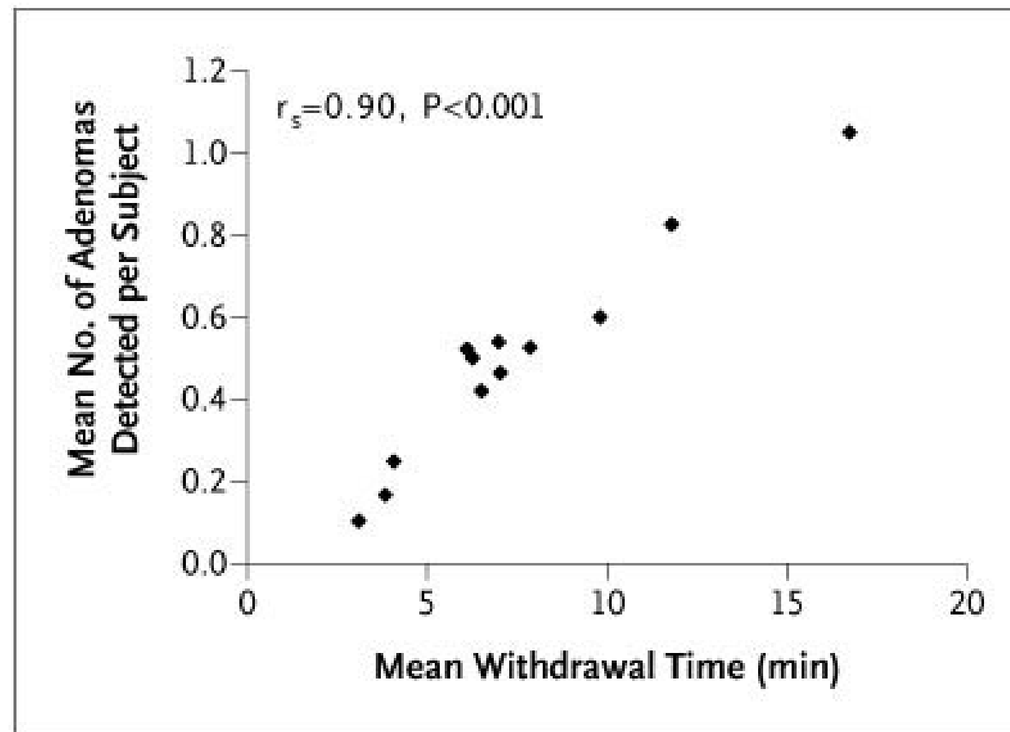
By GINA KOLATA

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Colonoscopic Withdrawal Times and Adenoma Detection during Screening Colonoscopy

Robert L. Barclay, M.D., Joseph J. Vicari, M.D., Andrea S. Doughty, Ph.D., John F. Johanson, M.D., and Roger L. Greenlaw, M.D.



GASTROENTEROLOGY 2007;132:96–102

Rates of New or Missed Colorectal Cancers After Colonoscopy and Their Risk Factors: A Population-Based Analysis

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Variable	Crude OR (95% CI)	Adjusted OR (95% CI)
Age (in yearly increments)	1.05[a] (1.04–1.07)	1.04[a] (1.02–1.05)
History of abdominal or pelvic surgery		
No	1	1
Yes	1.46[b] (1.03–2.05)	0.99 (0.69–1.43)
History of diverticular disease		
No	1	1
Yes	8.70[a] (6.44–11.76)	6.88[a] (5.00–9.47)
CRC site		
Rectal or sigmoid	1	1
Splenic flexure/descending	1.19 (0.57–2.47)	1.16 (0.55–2.44)
Transverse	2.40[b] (1.43–4.03)	1.98[b] (1.16–3.41)
Right	3.12[a] (2.31–4.21)	2.52[a] (1.84–3.45)
Excision of polyp		
No	1	1
Yes	0.64[a] (0.47–0.88)	0.66[b] (0.47–0.92)
Fulguration of polyp		
No	1	1
Yes	0.86 (0.50–1.49)	0.91 (0.51–1.62)
Physician specialty		
Gastroenterology	1	1
General surgery	1.15 (0.82–1.62)	1.16 (0.82–1.66)
Internal medicine or family practice	1.72[a] (1.13–2.63)	1.77[b] (1.14–2.74)
Other	0.82 (0.41–1.63)	0.85 (0.42–1.71)
Colonoscopy setting		
Hospital	1	1
Office	2.32[a] (1.57–3.44)	3.07[a] (2.02–4.66)

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A Call to Action — Measuring the Quality of Colonoscopy

David Lieberman, M.D.

Rationale of QA

- ***Colonoscopy is regarded as gold standard***
  - Aim: Reduction of CRC mortality
  - Aim: Reduction of CRC incidence
- ***Success is related to***
  - detection of precancerous lesion (adenomas) as much as possible
  - detection of early stages (UICC I & II) of CRC as much as possible
- ***Safety***
  - minimizing complications of the procedure
  - minimizing complications of sedation
  - minimizing complications of preparation
- ***Comfort***
  - As much as possible
  - Reduction of work loss time

QA of screening colonoscopy

- Gold standard of colonoscopy is flawed by
  - ***Overuse, underuse and inappropriate use***
    - Lack of adherence of evidence based guideline
    - Omission of family and hereditary risk factors
  - ***Waiting times***
    - Gastroenterologist´s manpower supply
  - ***Incorrect information***
    - No adaption of information for non-medical population
  - ***Dirty colon***
    - incomplete preparation
  - ***No sedation***
    - no experienced assistance
    - Improper substance use (e.g. Midazolam instead of Propofol)

DB Nelson Gastrointest Endosc 2002

QA of screening colonoscopy

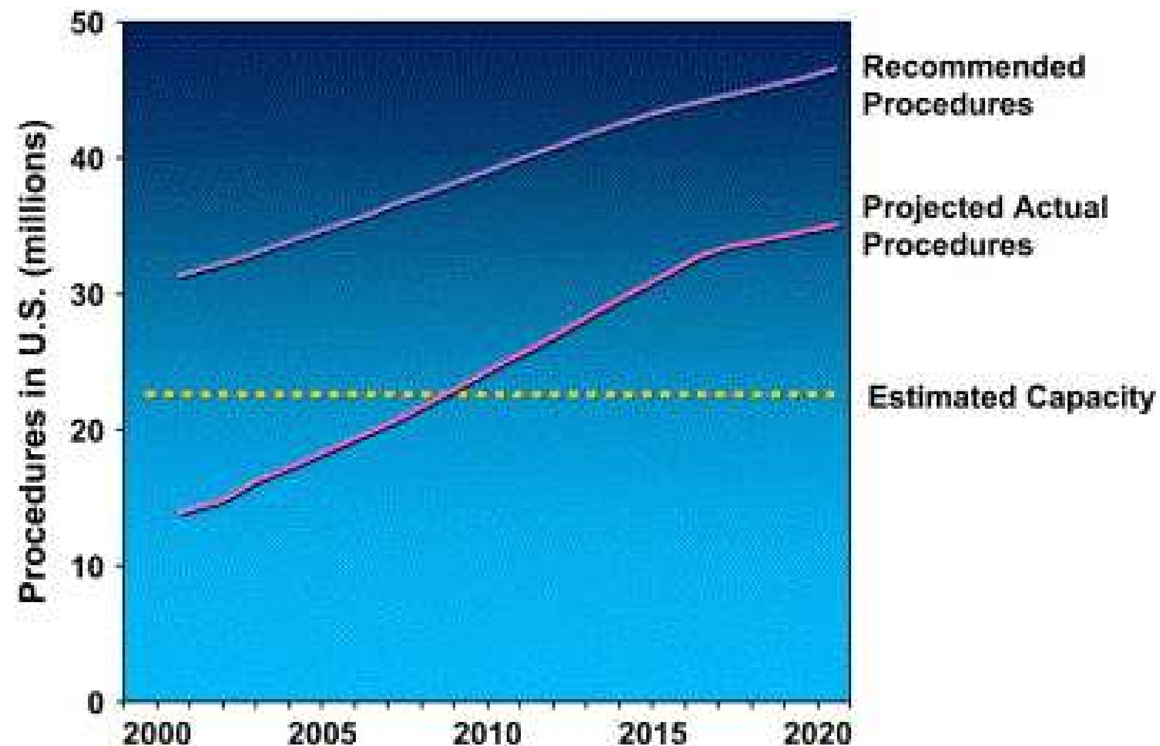
Gold standard of colonoscopy is flawed by Variations in endoscopist´s performance:

- Knowledge of appropiate indication
- Clear visualization of colon mucosa
- Successful cecum intubation
- Withdrawal time
- Detection rate of adenoma
- Detection rate of early stage CRC
- Retrieval of polypectomied adenoma
- Monthly volume of colonoscopy
- Endocopist complication rate

P. Cotton Gastrointest Endosc 2003

Manpower supply

Do we have enough trained endoscopists ?



Gastrointest Endoscopy Clin N Am 2006

QA of screening colonoscopy

- Gold standard of colonoscopy is flawed by
  - ***Safety problems***
    - Risk management
    - Infection control
  - ***Minor complications***
    - Bloating
    - Abdominal pain
    - Time/work lost
  - ***Major complications***
    - Bleeding
    - Perforation
    - Infection
    - Cardiac-pulmonary-vascular complications
    - Death

CW Ko Gastrointest Endosc 2007

QA of screening colonoscopy

- ***Performance measures***
  - % of good preparation
  - % of cecal intubation
  - % of withdrawal time > 6 minutes
  - % of adenoma detected
  - % of polypectomies
  - % of retrieved adenomas after polypectomy
  - % of UICC I or II of all CRC
  - % of major complications attributable to endoscopist

Quality management

- ***Quality management means the managing of all procedures, accountability and resources to achieve a high quality of health care services (e.g. screening colonoscopy). It includes:***
  - Performance measurement
  - Infection control
  - Quality data management
  - Continuous quality improvement

QM in screening colonoscopy

- German model (German cancer prevention guideline , issued Oct 2002)
  - QA by licensure for performing screening colonoscopy, including
    - Medical board license of Gastroenterology
    - > 200 total colonoscopies in previous two years
    - >50 polypectomies in previous two years
    - Adequate technical equipment for resuscitation
    - Successful infection control every six month
    - >200 total colonoscopies documented by photo of cecum and ileo-cecal valve every year
    - > 10 polypectomies proofed by histologic examination every year

German Evaluation of Screening Colonoscopy (2005)

- N of all procedures in 2005: 506.519
- Cecal intubation (including ileoscopy) 98,7%
- Picture documentation 98,8%
- Polyps 31,4 % (Adenoma 20,4%)
- CRC in UICC I and II 68,1%
- Perforation rate 0,03 %
- Total complicationrate 0,27%

ZI 2006

Benchmark for screening colonoscopy

- 28% with Polyps (Adenoma)
- 100% of positive FOBT followed with colonoscopy (total colonoscopy)
- CRC detected 2/3 in UICC 0,I or II
- 95% cecal intubation, successfully
- Perforation <1/3.000
- >200 colonoscopies/year/endoscopist
- Annual colonoscopies > 1500/year/unit
- Colonoscopy no-show rate < 10%
- >50% screening colonoscopies
- Waiting time < 30 d for screenees + FOBT pos
- Median procedure time < 30 min

NY Citywide Colon Cancer Control Coalition. Nov 2006

Conclusions

- Colonoscopy remains the gold standard for CRC screening, if
  - quality assurance is established
  - performance measures are introduced
  - continuous benchmarking is evaluated
- For increasing demand a sufficient gastroenterologist´s supply is warranted
- Cost effectiveness analyses are done

DEM BAYERISCHEN HEERE

Thank You for your attention