


OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 17, DDW San Diego, 2008

Presenter: D. Ahnen



World Organisation of Digestive Endoscopy

Colorectal Cancer Screening Committee Meeting


Quality Measures and Colonoscopic Outcomes

Dennis J. Ahnen MD
University of Colorado Denver School of Medicine and
Denver Department of Veterans Affairs Medical Center

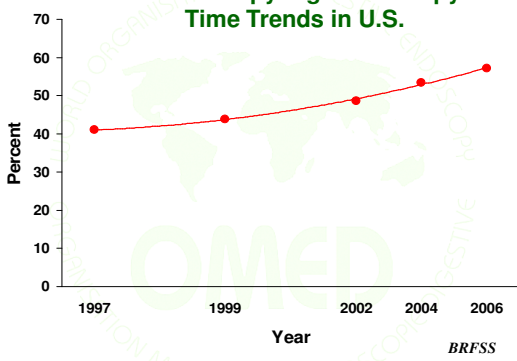
DDW 2008, San Diego, USA
17, May, 2008

Quality Measures and Colonoscopic Outcomes


- Colonoscopy screening is dominant modality in US
- Colonoscopic quality is variable
- Colonoscopic outcomes are variable
- How variable are they?
- What do we know about the causes of the variability?
- What can be done to improve colonoscopy quality?

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center 

Colonoscopy/Sigmoidoscopy Time Trends in U.S.



Year	Percent
1997	41
1999	44
2002	49
2004	54
2006	58

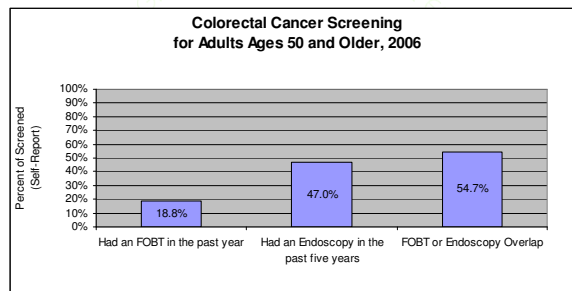
Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center 

OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 17, DDW San Diego, 2008

Presenter: D. Ahnen

CRC Screening in Colorado



Dennis J. Ahnen MD University of Colorado Denver and Denver VA Medical Center



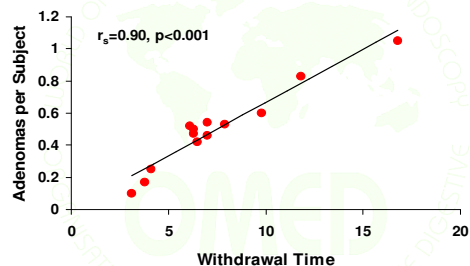
Colonoscopic Quality is Variable

- Adenoma Miss Rates are substantial-
 - diminutive adenomas- 25%
 - Tandem colonoscopy- ≥ 1 cm miss rate 2% (0-6%)
 - CT colonography- ≥ 1 cm miss rate 12%
- Adenoma detection rates vary 3.5 - 7 fold
 - Correlates with quality of prep; experience, training and technique; withdrawal time in some studies
- Complication rates vary up to 8-20 fold
 - Perforation 1/500 to $<1/4000$
 - Post-Polypectomy Bleeding 0.3-6%

Dennis J. Ahnen MD University of Colorado Denver and Denver VA Medical Center



Adenoma Detection Rate and Withdrawal Time



Barclay et al New Engl J Med 2007

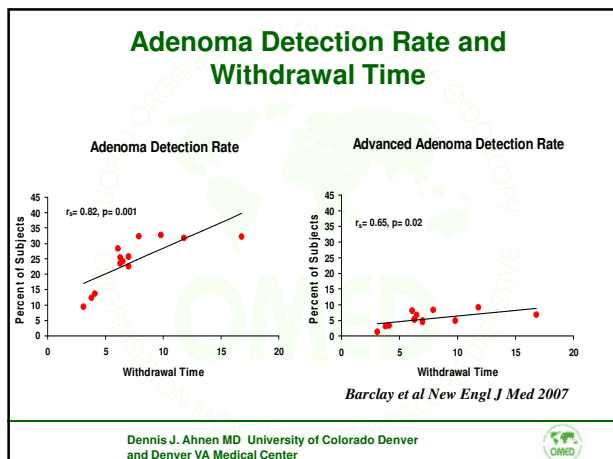
Dennis J. Ahnen MD University of Colorado Denver and Denver VA Medical Center

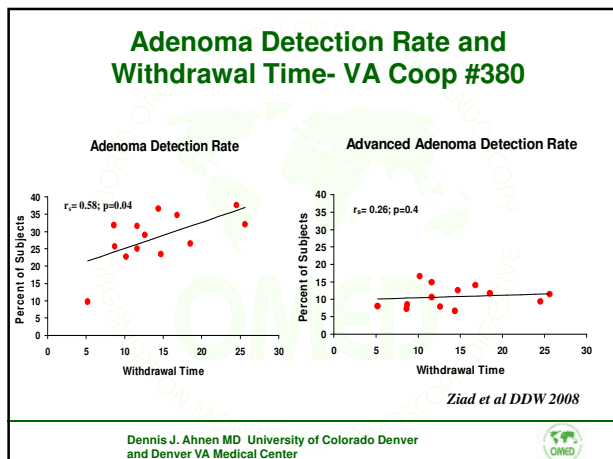


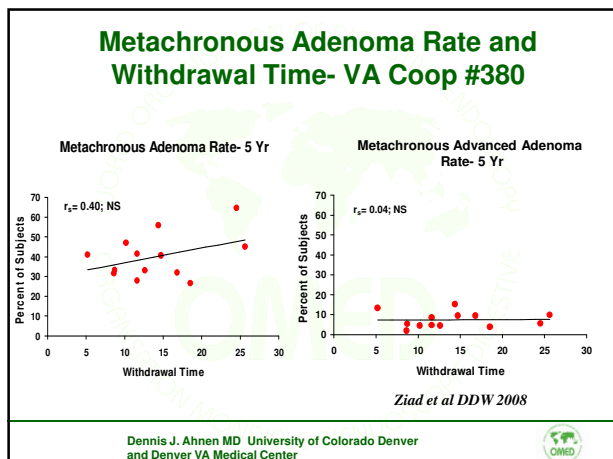
OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 17, DDW San Diego, 2008

Presenter: D. Ahnen







OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 17, DDW San Diego, 2008

Presenter: D. Ahnen

Confounding Factors

- Recognition of flat adenomas
 - Common
 - Higher risk of cancer than polypoid adenomas
 - More difficult to visualize and completely remove?
- Increasing demand
 - More endoscopists
 - Variable training and experience
- Decreasing reimbursement per procedure
 - More pressure to do more cases in less time

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center



Colonoscopic Outcome is Variable

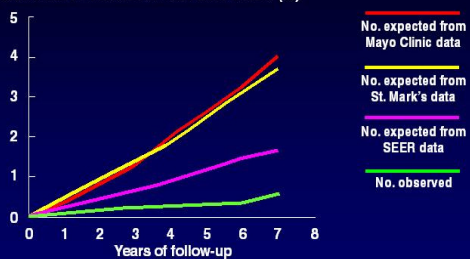
- Interval Cancers and Advanced Adenomas During Colonoscopic Surveillance
 - Variable incidence among studies (Pooled analysis of 8 studies)
 - Advanced Adenoma- 6.8-15%
 - Cancers- 0.3-0.9%
 - Risk factors and probable causes?

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center



Cumulative incidence of colorectal cancer in National Polyp Study cohort

Cumulative incidence of colorectal cancer (%)



Winawer et al, NEJM 1993; 329: 1977

OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 17, DDW San Diego, 2008

Presenter: D. Ahnen

Incident Cancer During Colonoscopic Surveillance

	N	Observed (yrs)	PYO	CRC Cases	Incidence/ 1000 PYO
Winawer (NPS)	1418	5.9	8,401	5	0.6
Schatzkin (PPT)	1297	6.2	7,626	10	1.3
Alberts (Wheat Bran)	1303	2.9	3,789	9	2.4
Robertson (3 trials)	2915	3.7	10,785	19	1.7
Martinez (8 trials)	9167	3.9	35,750	58	1.6

NPS had initial exams done by study investigators

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center



Pooling Study

Study (No.)	APPS (837)	CPPS (913)	AFT (1086)	NPS (939)	PPT (1304)	WBF (1304)	UDCA (1193)	VA (871)	Total (9167)
Median f/u, mos.	49.1	48.6	36.9	36.9	52.1	39.1	38.0	59.0	47.2
Median no. colos.	2.0	2.0	1.0	1.0	2.0	2.0	1.0	1.0	2.0
Advanced APs, n (%)	128 (15.3)	120 (13.1)	108 (9.9)	64 (6.8)	195 (9.6)	177 (13.6)	163 (13.7)	69 (7.9)	1024 (11.2)
CRC, n (%)	5 (0.6)	8 (0.9)	6 (0.6)	3 (0.3)	13 (0.6)	8 (0.6)	7 (0.6)	8 (0.9)	58 (0.6)

Robertson D et al DDW 2008 #795



Pooled Multivariate OR for Advanced Adenomas and CRCs

Characteristic	Adv. Adenoma OR (95% CI)	CRC OR (95% CI)
Age (per 10 y)	1.43 (1.31-1.55)	2.43 (1.71-3.47)
Male vs. Female	1.40 (1.19-1.65)	2.87 (1.34-6.15)
Adenoma No. (continuous)	1.44 (1.37-1.52)	1.25 (1.04-1.50)
Adenoma Size (Large vs. Small)	1.88 (1.60-2.20)	1.69 (0.93-3.08)
Any villous vs. Tubular	1.24 (1.04-1.47)	1.30 (0.68-2.46)
HGD vs. LGD	1.00 (0.78-1.29)	1.89 (0.84-4.27)
Adenoma Location (Proximal vs Distal)	1.68 (1.43-1.98)	

Martinez E et al DDW2008 Abst# W1096

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center



OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 17, DDW San Diego, 2008

Presenter: D. Ahnen

Causes of Interval Cancers After Total Colonoscopy

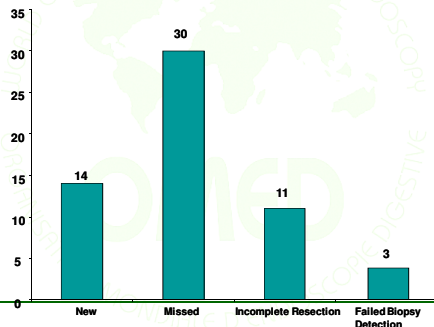
- NCI Dietary PPT- 2079 patients, 13 interval cancers detected
 - 46% Probably Undetected (unseen or failed biopsy detection)
 - 31% Probably Incompletely Removed
 - 23% Probably New Cancers
- Pooled Analysis of 8 Prospective Studies of 9167 subjects undergoing colonoscopy- 58 (0.63%) interval cancers
 - 57% Probably Undetected (unseen or failed biopsy detection)
 - 19% Probably Incompletely Removed
 - 24% Probably New Cancers

Pabby et al Gastrointest Endos 2005;61:385-91
Robertson et al DDW 2008 Abst #795

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center



Adjudicated Cause for Cancer (n=58)



Colonoscopy Quality Improvement

Basic Colonoscopy Audit

- Bowel preparation quality: percent adequate to detect polyps >5 mm
- Cecal intubation rate (>95% for screening exams)
- Rate of photodocumentation of cecal landmarks
- Mean colonoscopic withdrawal time in patients without polypectomy or biopsy (>6-10 min)
- Adenoma detection rate in first-time screening examination based on patient's sex (25% for men; 15% for women)
- Adverse or unplanned events occurring within 24 h of colonoscopy
- Complication Rates- Hospitalization, Bleeding, Perforation, Surgery

Lieberman D et al Gastrointest Endosc 2007;65:757-66
Rex DL et al Am J Gastroenterology 2002;97:1296-130

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center



OMED COLORECTAL CANCER SCREENING COMMITTEE MEETING

Saturday, May 17, DDW San Diego, 2008

Presenter: D. Ahnen

Adenoma Detection Rates- Moving Target?

- HD/wide angle colonoscope and expert endoscopist- 1st time screening
 - Adenoma detection rate- 57%
 - Adenoma \geq 1cm- 5%
 - >50% were "flat" adenomas
 - NBI didn't make a difference
- Chromoendoscopy increases detection rate
- Other devices?

Rex DL et al Gastroenterology 2007;143:42-7

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center



Quality Measures and Colonoscopic Outcomes

- Colonoscopy screening is dominant modality in US
- Colonoscopic quality is highly variable
 - Quality of Preparation, Training, Technique
- Colonoscopic outcomes are variable- 3-4 fold
 - Related to demographics and baseline colonoscopy findings
 - Most are probably undetected or incompletely removed
- What can be done to improve colonoscopy quality?
 - Training for quality, Monitor quality, Careful colonoscopy
 - New technology?

Anything that is worth doing at all is worth doing well.
[4th Earl of Chesterfield, Philip Dormer Stanhope](#)

Dennis J. Ahnen MD University of Colorado Denver
and Denver VA Medical Center