TITLE: Colon Cancer not prevented by Colonoscopy

AUTHORS (FIRST NAME, LAST NAME): Rohit Gupta2, Brian N. Brownlow3, Robert A. Domnick3, Gavin Harewood4, Michael Steinbach2, Vipin Kumar2, Piet C. de Groen1


Degree(s) - separated by commas:
Rohit Gupta : MS
Brian Brownlow : BS
Robert Domnick : BS
Gavin Harewood : MD
Michael Steinbach : PhD
Vipin Kumar : PhD
Piet de Groen : MD

ACG Membership Status:
Rohit Gupta : ACG Non-Member
Brian Brownlow : ACG Non-Member
Robert Domnick : ACG Non-Member
Gavin Harewood : ACG Non-Member
Michael Steinbach : ACG Non-Member
Vipin Kumar : ACG Non-Member
Piet de Groen : ACG Non-Member

Fellow-in-training:
Rohit Gupta : Selected

ABSTRACT BODY:

Purpose: The reported miss rate for detection of colorectal cancer (CC) or advanced adenomas during colonoscopy (C) varies greatly and depends on the type of study, with retrospective studies reporting lower rates than prospective, double procedure - such as CT colonography/colonoscopy - studies. Aims: (1) To determine the development of CC not prevented by C (CCdespiteC) in patients undergoing screening or surveillance C at Mayo Clinic Rochester (MCR). (2) To investigate the possible reasons for development of CCdespiteC.

Methods: A large dataset was created containing (1) all patients who had undergone C at MCR between 1992 and 2004, and (2) all patients who had a tissue specimen diagnosis of CC between 1993 and 2006. A CCdespiteC was defined as a CC that was diagnosed between 90 days and 3 years since last C.

Results: A total of 10,136 patients with either primary or metastatic colon cancer were identified between 1992 and 2004 at MCR. Of these, 2692 patients had undergone a total of 4743 colonoscopies at MCR. From this database, 187 Cs were identified in 145 patients who developed CCdespiteC. Considering that some patients who had undergone C at MCR might have been later diagnosed with CC elsewhere, a conservative estimate of the CCdespiteC rate is 4% (~187/4743). Three main reasons for development of CCdespiteC were identified: (1) CC was truly missed (120 Cs in 100 patients – 19 Cs performed under sub-optimal colon preparation); in some of these patients, CC was missed multiple times (2, 3 or even 4 times); (2) a lesion was seen at or close to the anatomic location of the CCdespiteC but not treated or recognized as important (9 Cs in 9 patients); and (3) a lesion was seen and treated with intent of completeness at or close to the anatomic location of the CCdespiteC (58 Cs in 46 patients). Among the endoscopists who performed at least 50 Cs in CC patients, CCdespiteC rate per endoscopist varied from 1.1% and 9.4%. Moreover, considering only the Cs in which the endoscopist was able to examine the subsequent anatomic location of CC, there was no significant difference in CCdespiteC rate in the left and right colon. The interval of truly missed CC ranged from just over 90 to just under 1095 days with cases evenly distributed over the 2 year 9
month time span.

**Conclusion:** CCdespiteC occurs in a significant number of patients. Most CCdespiteC are truly missed lesions as confirmed by the interval between C and CCdespiteC diagnosis. Reasons for development of CCdespiteC include truly missed lesions and failure to recognize, to adequately treat or to arrange appropriated follow-up for advanced adenomas. The skill set of the endoscopist is of critical importance given the 9-fold variation of CCdespiteC rate among endoscopists.

(No Table Selected)
(No Image Selected)

**Other Details**
**CATEGORY:** M. Colorectal Cancer Prevention
**PRESENTATION TYPE:** Oral Only
**KEYWORDS:** Colonoscopy, Colon Cancer, Prevention Failure.
**AWARDS:**
**ACG Research Grant Support:** No