



Screening Colonoscopy for Colorectal Cancer Prevention - Results from a German Online Registry on 269,000 Cases

Bokemeyer B¹, Rambow A², Hüppe D³, Düffelmeyer M⁴, Tacke W⁵, Koop H⁶

¹Gastroenterology Practice Minden, Germany; ²Gastroenterology Practice Frankfurt, Germany; ³Gastroenterology Practice Herne, Germany; ⁴IOmTech Corp. Berlin, Germany; ⁵Gastroenterology Practice Königstein, Germany; ⁶Department of Medicine II, HELIOS Klinikum Berlin-Buch, Germany

Background and Study

Background: The efficacy of screening colonoscopy in general use remains to be determined. Here we report the data of a 39-month period collected in a nation-wide online registry.

Study: Data from consecutive screening colonoscopies in the practices of the 280 participating gastroenterologists performed in asymptomatic subjects (age 55 to 99 years) were collected in

an online registry. Number and histology of colorectal polyps and carcinomas, complication rates of colonoscopy and polypectomy were registered. Advanced adenoma was defined as an adenoma ≥ 10 mm in diameter, villous or tubulovillous in histology, or presence of high-grade dysplasia.

Results

A total of 269,144 colonoscopies (male 44%) could be evaluated. Tubular, villous/tubulovillous adenomas, and invasive cancers were found in 15.6%, 3.7%, and 0.8%, respectively. Advanced adenomas amounted to 7.1%. In 95% of polyps > 5 mm and < 30 mm immediate polypectomy was performed.

Total number of patients	269.144	
Male	119264	44.3%
Female	149880	55.7%
Endoscopy under conscious sedation (predominantly midazolame)	242.452	90.1%
Hyperplastic polyps	24.155	9.0%
Tubular adenomas	41.968	15.6%
Tubulovillous adenomas	9.484	3.5%
Villous adenomas	670	0.2%
High-grade dysplasia	1.797	0.67%
Advanced adenoma*	19.013	7.1 %
Invasive cancer	2077	0.77%

*at least one of the following criteria: adenomas ≥ 10 mm, villous/tubulovillous histology, high-grade dysplasia

Tab. 1: Demographic data and histologic findings

Size of polypoid lesion	all polyps n = 76,277	adenomas n = 52,122	polypectomy rate
< 5 mm	47.3 %	38.5 %	58.4 %
5-10 mm	35.5 %	39.1 %	96.4 %
11-30 mm	14.9 %	19.3 %	94.3 %
> 30 mm	2.3%	3.1 %	68.3 %

Polyps smaller than 5 mm were in part removed by biopsy and therefore not listed under polypectomies. Endoscopic polypectomy was defined as removal of a polypoid lesion by electro-surgical snare excision.

Tab. 2: Size of polyps in relation to the rate of polypectomies

Age (years)	55-64	65-74	> 74
n (M / F)	60732/82368	47652/54523	10755/12817
Adenomas			
	21.8	26.4	27.3
Male			
Female	12.9	16.9	18.6
Advanced adenomas			
Male	7.8	10.3	12.0
Female	3.0	6.1	7.8
Cancer			
Male	0.67	1.20	1,95
Female	0.36	0.69	1.58

Tab.3: Age and gender-related rate of adenomas and invasive cancers

Stage	Number	Percent*
UICC I	246 (+67 classified N _x / M _x)	42.8 %
UICC II	153 (+53 classified N _x / M _x)	26.6 %
UICC III	118	20.5 %
UICC IV	58	10.1 %

* Patients with NX / MX were not included in this calculation

Tab. 4: UICC stages in 575 colorectal carcinomas primarily detected at screening colonoscopy

In 399 of the 575 carcinomas with complete TNM stages which were detected during colonoscopy, early stages dominated (UICC stages I and II in 43 and 27 %, respectively).

Complications	n	% of colonoscopies	% of polypectomies
Cardiopulmonary	222	0.08	
Bleeding	442	0.16	0.80
Surgery due to bleeding	19	0.007	0.03
Perforation	55	0.02	0.09

Tab. 5: Complications

	Diagnostic	%	Screening	%
Complete colonoscopy	6531		4628	
Cancer detected	84	1.29	36	0.77
Snare polypectomy	745	11.4	450	9.7
Immediate / self-reported complications (number of perforations)	25 (3)	0.38 (0.05)	21 (4)	0.45 (0.09)
Additional complications*	9	0.14	5	0.10

*These complications were recorded by telephone interviews obtained 4 weeks after the endoscopic procedure

Tab. 6: Comparison of diagnostic versus screening colonoscopies and rate of delayed complications

Complication rate was low and no fatalities were observed: cardiopulmonary in 0.10% of the colonoscopies, bleeding in 0.8% of polypectomies most of which were managed endoscopically (surgery in 0.03% of polypectomies). Perforation occurred in 0.02% of the colonoscopies and 0.09% of polypectomies.

Conclusion

Colonic neoplasias are detected in about 20% of subjects most of which are immediately removed by polypectomy at a low risk. The high proportion of low UICC stages in cancer patients detected by screening colonoscopy suggests probable mortality reduction.