Rev. Med. Chir. Soc. Med. Nat., Iaşi – 2010 – vol. 114, nr. 3

COLONOSCOPIC SCREENING OF ASYMPTOMATIC FIRST-DEGREE RELATIVES OF COLORECTAL CANCER PATIENTS

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COLONOSCOPIC SCREENING OF ASYMPTOMATIC FIRST-DEGREE RELATIVES OF COLORECTAL CANCER PATIENTS (Abstract): **Aim**: First-degree relatives of colorectal cancer (CRC) patients are at increased risk for developing colorectal neoplasm, and current guidelines recommend screening colonoscopy in such individuals. The aim of this study was to evaluate the use of colonoscopy as the screening test in asymptomatic first-degree relatives of CRC patients. **Material and method**: Colonoscopy was performed in 102 asymptomatic individuals who had at least one first-degree relatives with CRC. Subjects included in the screening program were aged between 36 and 72 years, and majority came from two counties (Suceava, Iaşi) located in north-eastern Romania. **Results**: Thirty colorectal lesions were found in 17 individuals: two (6.6%) had adenocarcinomas, and remaining 15 patients had 28 polypoid lesions: 14 (46.6%) adenomas, 5 (16.6%) tubulovillous adenomas, 3 (10%) adenomas with high grade dysplasia and 6 (20%) had hyperplasic polyps. **Conclusion**: Colonoscopy is a useful, feasible and safety initial screening tool for first-degree relatives of patients with CRC. **Key words**: COLORECTAL CANCER, COLONOSCOPY, FIRST-DEGREE RELATIVE, SCREENING

Colorectal cancer (CRC) is the second leading cause of death from malignancies in most western developed countries (1). In Romania, the incidence of CRC has significantly increased over the last two decades, and now it has the tendency to exceed the gastric cancer, which is still the most frequent malignancy encountered in our country (2).

The goal of cancer screening is to reduce mortality through a reduction in incidence of advanced disease. CRC screening can achieve this goal through the detection of early-stage of adenocarcinomas and the detection and removal of adenomatous polyps (3). Recent trends in CRC incidence and mortality reveal declining rates, which have been attributed to the effect of screening and early detection and prevention through polypectomy (4,5).

Colonoscopy performed by experienced endoscopists is regarded as "gold standard" method for CRC screening; it seems to outperform fecal occult blood test (FOBT) and flexible sigmoidoscopy in the detection of cancer and advanced neoplasia (5).

First-degree relatives of CRC patients are at increased risk for developing colorectal neoplasm, and current guidelines recommend screening colonoscopy in such individuals (6,7,8).

The aim of this study was to evaluate the use of colonoscopy as the screening test in

TABLE I
Characteristics of the screened group

Lesions	Number	%
Adenocarcinoma	2	6,6
Adenomas	14	46,6
Tubulovillous adenomas	5	16,6
Adenoma with high-grade dysplasia	3	10
Hyperplasic polyps	6	20

asymptomatic first-degree relatives of CRC patients.

MATERIAL AND METHODS

In January 2006 we set up a colonoscopy screening program of first-degree relatives of common ("sporadic") CRC patients (those cancers not associated with familial adenomatous polyposis, hereditary nonpolyposis colorectal cancer, or inflammatory bowel disease). The potential screenees were invited to an interview and after detailed information about an increased risk for the development of CRC for first-degree relatives, a colonoscopy was suggested. All the subjects interviewed were asymptomatic, and those who agreed for screening received colonoscopic examination. All colonoscopies were performed by experienced endoscopists at Iaşi Institute of Gastroenterology and Hepatology and Suceava County Hospital. The majority of screened subjects came from north-eastern region of Romania (Iaşi and Suceava counties).

RESULTS

Out of 216 subjects interviewed, 114 (52.7%) refused colonoscopy or any other type of screening test, and 102 (47.3%) subjects agreed to have a colonoscopy examination. The characteristics of screenees are presented in table I.

The endoscopic findings are shown in Table II. Overall, there were 30 lesions in 17 patients: 2 (6,6%) adenocarcinoma (one patient with Dukes A stage, the other with Dukes B), and 28 polypoid lesions in 15 patients (14 adenomas, 5 tubulovillous adenomas, 3 adenomas with high grade dysplasia and 6 hyperplasic polyps).

DISCUSSION

Familial risk of CRC is well-known and current guidelines recommend screening colonoscopy in first-degree relatives of patients with CRC (6,7,8). Several studies investigated the effectiveness of colonoscopy screening in close relatives of patients with common ("sporadic") CRC (those cancers not associated with familial adenomatous polyposis, hereditary nonpolyposis colorectal cancer, or inflammatory bowel disease) (9,10,11,12, 13,14,15,16,17,18).

Colonoscopy performed by experienced

TABLE II
Results of histological examinations of the colonoscopic findings

No. of participants	102
Sex (M/F)	57/45
Mean age (range)	52±9.6 yrs (36-72 yrs)
Origin of participants	
Iaşi county	51 (50%)
Suceava county	32 (31,3%)
Others	19 (18,6%)
Relative affected by CRC	
Parents	86 (84,3%)
Siblings	16 (15,6%)

endoscopists is regarded as "gold standard" method for CRC screening; although is invasive and operator dependent, colonoscopy has the highest sensitivity among current methods, examines the entire colon, is cost-effective, and offers diagnosis and therapeutic opportunity in a single-session and the longest interval protection. Therefore, we adopted colonoscopy as a screening procedure for CRC, and the compliance was acceptable (47.3%). We did not routinely use sedation, and the cecum was intubated in 92.15% of colonoscopies. Therefore were no complications during colonoscopic examinations.

We found 30 lesions in 17 patients, a figure which is certainly higher than found in the general population aged over 50 years in our region. Our study confirmed the results of the other studies (9,10,12,13,15, 16,17). Thus, Baker et al. (15) reported 166 lesions (27% neoplastic) in 85 (42%) out of 201 asymptomatic patients who underwent colonoscopy based solely on a family history of CRC. Guillem et al. (12) prospectively colonoscoped 181 asymptomatic first-degree relatives of CRC patients and 83 asymptomatic controls, and found an increased prevalence of adenomas in first group. Pezzoli et al. (10) reported the results of a 5-years CRC screening program in asymptomatic subjects at increased risk and found colonoscopy-based screening feasible, effective and well accepted. Ruthotto et al. (9) investigated the compliance for colonoscopy in first-degree relatives of patients with CRC and found that less than 40% of them participate in colonoscopy screening for CRC; the authors suggested that better information of CRC patients about the potential risk for their relatives will increase participation in screening colonoscopy in their first-degree relatives. Wu et al. (17) found a high acceptability and safety of colonoscopy in screening persons with family history of CRC, and suggested the use of colonoscopy as an initial screening procedure. Similar results were reported by Syrigos et al, and other studies (16,18).

CONCLUSION

Our study shows that screening colonoscopy in first-degree relatives of patients with CRC is feasible, safe, and generally well accepted. First-degree relatives of CRC patients have a higher percentage of neoplasms than average-risk population from our region. The compliance rate in screening colonoscopy was acceptable and may increased by direct physician-patient contact.

BIBLIOGRAPHY

1. Stanciu C, Trifan A, Khder S. Accuracy of colonoscopy in localizing colonic cancer. *Rev Med Chir* 2007; 1: 39-43.
2. Stanciu C. *Cancerul colorectal: epidemiologie, clinica, preventive.* Iaşi: Ed. "Gr.T. Popa", 2003.
3. Levin B, Lieberman DA, McFarland B et al. Screening and surveillance for the early detection of colorectal cancer and adenomatous polyps. 2008: A Joint Guideline from the American Cancer Society, The US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. *Gastroenterol* 2008; 134: 1570-1595.
4. *** National Cancer Institute. SEER cancer statistics review, 1975-2006. 2009. Available at: http://seer.cancer.gov/csr/1975_2006/. Accessed September 25, 2009.
5. Espey DK, Wu XC, Swan J et al. Annual report to the nation on the status of cancer, 1975-2004, featuring cancer in American Indians and Alaska Natives. *Cancer* 2007; 110: 2119-2152.
6. Panteris V. Suggested methods of screening for colorectal cancer. *Dig Oncol* 2009; 9: 9-14.

7. Rex DK, Johnson D et al. Colorectal cancer prevention 2000 : screening recommendations of the American College of Gastroenterology. *Am J Gastroenterol* 2000 ; 95 : 868-877.
8. Winawer S, Fletcher R, Rex D et al. Colorectal cancer screening and surveillance : clinical guidelines and rationale-Update based on new evidence. *Gastroenterol* 2003 ; 124 : 544-560.
9. Ruthoto F, Papendorf F, Wegener G et al. Participation in screening colonoscopy in first-degree relatives from patients with colorectal cancer. *Ann Oncol* 2007 ; 18 : 1518-1522.
10. Pezzoli A, Matarese V, Rubuni M et al. Colorectal cancer screening : Results of a 5-year program in asymptomatic subjects at increased risk. *Dig Liver Dis* 2007 ; 39 : 33-39.
11. James D, John B, Francis T et al. Cancer risk in relatives of patients with common colorectal cancer. *Ann Int Med* 1993 ; 118 : 785-790.
12. Guillem J, Forde K, Treat M et al. Colonoscopic screening for neoplasms in asymptomatic first-degree relatives of colon cancer patients. *Dis Colon Rectum* 1992 ; 35 : 523-529.
13. Pariente A, Milan C, Lafon J et al. Colonoscopic screening in first-degree relatives of patients with "sporadic" colorectal cancer : A case-control study. *Gastroenterol* 1998 ; 115 : 7-12.
14. Colombo L, Corti G, Magri F et al. Results of a pilot study of endoscopic screening of first-degree relatives of colorectal cancer patients in Italy. *J Epidemiol Community Health* 1997 ; 51 : 453-458.
15. Baker J, Gathright B, Timmcke A et al. Colonoscopic screening of asymptomatic patients with family history of colon cancer. *Dis Colon Rectum* 1990 ; 33 : 926-930.
16. Syrigos KN, Charalampopoulos A, Ho JL et al. Colonoscopy in asymptomatic individuals with a family history of colorectal cancer. *Ann Surg Oncol* 2002 ; 9 : 439-443.
17. Wu CH, Tung SY, Chen PC, Kuo YC. The role of colonoscopy in screening persons with family history of colorectal cancer. *J Gastroenterol Hepatol* 2008 ; 10 : 319-323.
18. Bazzoli F, Fossi S, Sottoli S et al. The risk of adenomatous polyps in asymptomatic first-degree relatives of persons with colon cancer. *Gastroenterol* 1995 ; 109 : 783-788.

NOUTĂŢI

NIVELURILE SERICE ALE VITAMINELOR B SUNT INVERS PROPORŢIONALE CU RISCUL DE CANCER BRONHO-PULMONAR

Studiul european prospectiv de tip caz-martor EPIC (European Prospective Investigation into Cancer and Nutrition), desfăşurat între 1992 şi 2000, a cuprins 519978 subiecţi din 10 ţări europene, din care 385747 erau donatori de sânge. La aceştia au fost puse în evidenţă 899 cazuri de cancer bronho-pulmonar (CBP), ce au fost comparate cu 1770 de cazuri martor, luând în considerare data naşterii, sexul, ţara de origine şi momentul prelevării de sânge. Au fost dozate vitaminele B2, B6, B9 (folaţi) şi B12 ; metionina, homocisteina şi cotinina. După considerarea tabagismului cronic drept un factor potenţial confuzional, compararea între cele două grupuri a arătat că riscul de CBP a fost foarte scăzut în următoarele cazuri : nivel crescut al vitaminei B6, cu odds ratio (OR) – 0,44, $p < 0,000001$; nivel crescut de metionină (OR – 0,52, $p < 0,000001$), ambele tendinţe fiind independente de existenţa tabagismului sau de durata de supraveghere. Riscul de CBP a fost scăzut şi în cazul creşterii folaţilor (OR 0,68, $p = 0,001$) doar la fumători. Acest studiu caz- martor pledează în favoarea unei asocieri inverse între nivelul seric crescut al Vitaminei B6 şi al metioninei şi riscul de cancer bronho-pulmonar. O ipoteză seducătoare pentru eventuale aplicaţii terapeutice (Johansson M et al. Serum B vitamin levels and risk of lung cancer. *JAMA* 2010, 303 : 2377-2385).

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