

Colonoscopy in Romania

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Abstract

Background: To date, colonoscopy is considered the gold standard for the investigation of the colon and also the gold standard method for colorectal cancer screening.

The aim of this paper was to assess if and how is Romania prepared to cope with screening of colon cancer by means of colonoscopy.

Method: We sent a study-type questionnaire addressed to all the centers in Romania known to perform digestive endoscopy and we inquired about the total number of colonoscopies and flexible sigmoidoscopies performed in 2003 (the questionnaire was sent to 43 centers).

Results: Thirty-eight centers responded to the questionnaire. The total number of colonoscopies performed in Romania in 2003, obtained by collecting the data from the study centers, was 22,324. The number of sigmoidoscopies performed during the same period was 12,349. The ratio between the number of colonoscopies and sigmoidoscopies was 1.8/1. There were 106.3 colonoscopies /100,000 inhabitants.

Conclusion: Considering the population of Romania (about 21 million inhabitants), the number of colonoscopies performed is insufficient for our country. The number of centers performing colonoscopy in Romania is also insufficient.

Keywords

Colonoscopy - colonoscopists - training in endoscopy - colon cancer screening

Rezumat

Premize. Colonoscopia este considerată la ora actuală

“standardul de aur” atât pentru explorarea colonului cât și pentru screeningul pentru cancer colorectal.

Scopul acestei lucrări este de a aprecia în ce măsură România este pregătită pentru a face față screeningului cancerului de colon prin colonoscopie.

Metodă. Studiul a fost de tip chestionar și s-a adresat tuturor centrelor cunoscute ca efectuând endoscopie în România solicitându-se numărul de colonoscopii efectuate în întreg anul 2003 și numărul de sigmoidoscopii flexibile efectuate în aceeași perioadă (chestionarul a fost trimis la 43 de centre).

Rezultate. Au răspuns la chestionarul nostru 38 de centre. Numărul total de colonoscopii efectuate în 2003 în România și cuantificat prin adunarea datelor de la centrele din studiu a fost de 22.324. În aceeași perioadă s-au efectuat 12.349 sigmoidoscopii. Raportul între numărul de colonoscopii și sigmoidoscopii a fost de 1,8/1. În medie, au fost efectuate 106,3 colonoscopii/100.000 locuitori.

Concluzie. Populația României fiind aproximativ 21 milioane de locuitori, numărul de colonoscopii efectuate este insuficient pentru țara noastră. De asemenea, numărul de centre în care se efectuează colonoscopii este insuficient.

Introduction

To date, colonoscopy is considered the “gold standard” for colon investigation. The endoscopic investigation is recommended for the diagnosis of symptoms such as rectorrhagia or diarrhoea, for the screening of premalignant conditions (i.e. colonic polyps), follow up after polypectomy, follow up of inflammatory bowel disease (IBD) and tapering treatment, and for the diagnosis of colonic cancer. Less invasive screening methods, such as virtual colonoscopy, are not yet accepted in the medical world today, but in the near future this might be an alternative for screening (1).

The incidence of colonic cancer has constantly increased in the last decades, mainly in the developed countries, being the most frequent digestive cancer in Europe (2). It is also well known that the presence of colonic polyps – a premalignant condition - is almost mandatory in colon

carcinogenesis. Consequently, if colonic polyps are diagnosed and removed, the incidence of colonic cancer will diminish significantly. The ongoing screening programs for colonic cancer are aimed at discovering colonic neoplasia in early stages and/or at diagnosing and removing colonic polyps and cancer in situ by endoscopic polypectomy and/or mucosectomy (3).

In certain countries, such as the United States, a screening program for colonic cancer in patients over 50 years of age has been established (3). Two years ago, in Rome, under the patronage of Pope John Paul the II-nd, the "World Campaign Against Colonic Cancer" was launched (4). This campaign has a specific approach for each country, but its main purpose is to detect colonic cancer in early stages, often asymptomatic, or to diagnose and remove colonic polyps by means of endoscopic polypectomy, thus reducing cancers and downstaging them. The screening should be addressed to all subjects over 50 years of age, or only to those individuals with a high risk for colonic cancer, the age of screening depending on the risk.

The screening for colonic cancer can be performed by means of the Haemocult test (which detects haemoglobin in the stool), tests which reveal the presence of modified DNA in the stool, sigmoidoscopy (\pm barium enema), colonoscopy or CT-colonoscopy. The current "gold standard" method is considered to be colonoscopy (1, 3).

In order to cope with the huge number of colonoscopies required for the screening of all subjects over the age of 50, or only for those at high risk of colonic cancer, statistical studies have been done in many countries, for assessing the number of colonoscopies required to cover the target population. Such studies have been published in France, Great Britain, the United States etc (5-8).

The aim of this paper was to assess if and how prepared is Romania to cope with the screening for colonic cancer by means of colonoscopy. Since 2003, Romania has joined the group of countries having a National Program against colonic cancer (Section 2.2 of the Ministry of Health and Family – The Program for Prevention and Control in Oncological Pathology: Screening for Colonic Cancer). The program assesses patients at risk of colonic cancer who should be monitored by Haemocult test, and, if this is positive, endoscopic colonoscopy should be performed (9).

Material and method

We sent questionnaires to the 43 centers in Romania known to perform digestive endoscopy. Even if we had rather poor data regarding these centers, we used their phone and fax numbers or e-mail addresses.

We contacted a total number of 43 centers known to perform digestive endoscopy, located in university or non-university hospitals, in public or private ambulatory units. We inquired about the total number of colonoscopies and flexible sigmoidoscopies performed in 2003.

We calculated the mean number of colonoscopies performed as an incidence per 100,000 inhabitants (in order

to compare it with other countries), as well as the distribution of this procedures in various geographical areas. Our questionnaire did not include questions regarding the indication for colonoscopy, the complications that occurred, the diagnosis found, or whether colonoscopy was a total one (i.e. caecum was reached).

Results

Thirty-eight out of the 43 (88%) centers performing endoscopy responded to our questionnaire. Despite our repeated attempts of contact, five centers did not answer.

The total number of colonoscopies performed in Romania in 2003, obtained by collecting the data from the study centers, was 22,324. The number of sigmoidoscopies performed during the same period was 12,349. The ratio between the number of colonoscopies/sigmoidoscopies was 1.8/1. The mean number of colonoscopies/center was 587.5 colonoscopies/year. If we considered university clinics and non-university hospitals, we obtained a mean number of 849.9 colonoscopies/year in university hospitals and 185.2 colonoscopies/year in non-university hospitals.

We divided the number of colonoscopies performed to the population of Romania (approximately 21 million) and we obtained a mean number of 106.3 colonoscopies/100,000 inhabitants.

When we divided the number of colonoscopies to the population of various historical regions (Fig.1) we obtained the following data:

- 158.2 colonoscopies/100,000 inhabitants in Moldavia (the centers from Moldavia were in Iași, Suceava, Brăila);
- 97.1 colonoscopies/100,000 inhabitants in Muntenia (the centers were in Bucharest, Craiova, Ploiești, Râmnicu-Vâlcea, Turnu-Severin);
- 86.5 colonoscopies/ 100,000 inhabitants in Transylvania (Cluj-Napoca, Tg-Mureș, Oradea, Sibiu, Satu-Mare, Deva, Baia Mare, Brașov, Sf. Gheorghe, Odorheiu Secuiesc);
- 89.2 colonoscopies/100,000 inhabitants in Banat (Timișoara, Arad, Reșița);
- 57.5 colonoscopies/100,000 inhabitants in Dobrogea (Constanța).

Discussion

Regarding the number of colonoscopies performed each year in different countries, the SFED (French Society of Digestive Endoscopy) reported 900,000 colonoscopies (under general anesthesia) in France (5, 6) and approximately 100,000 sigmoidoscopies (the ratio colonoscopies: sigmoidoscopies was 9:1) in a population of 60 million inhabitants. In the United States, the Control Diseases Center (CDC) reported in 2003 14.5 million colonoscopies (7) and 3.5 million sigmoidoscopies performed (ratio 4.1:1) in a population of about 293 million inhabitants.

In Romania, the colonoscopies/sigmoidoscopies ratio is very low (1.8/1) as compared with France or the USA.

Table I Number of colonoscopies/100,000 inhabitants in different countries

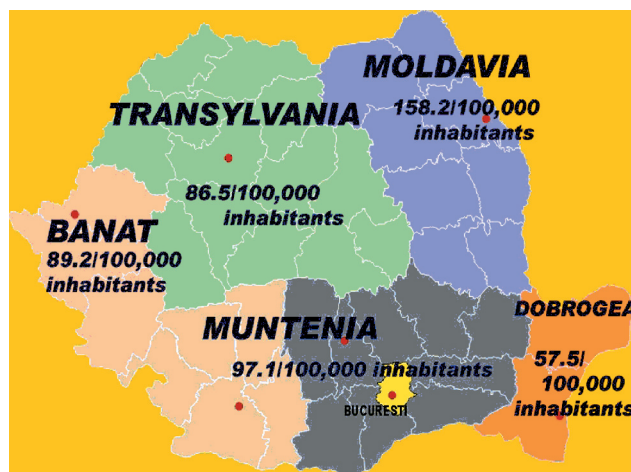
Country	Ref.	Number of colonoscopies/ 100,000 inhabitants
USA	(7)	4,950
France	(5,6)	1,500
UK	(12)	800 – 1,000
Romania	(present study)	106

This means too many sigmoidoscopies performed as compared to the number of colonoscopies. It is well known that sigmoidoscopy is not the ideal method to evaluate the colon. If in the rectosigmoid or even in the descendent segment of the colon we do not find lesions it does not mean that there are not lesions in the ascendant or transverse colon. It is a dangerous policy to explore only a part of the colon, “hoping” that the rest of the colon is disease-free. To continue the sigmoidoscopy with barium enema is also questionable, because small lesions can be missed. In spite of all these short-comings, the policy of screening for colonic cancer by means of sigmoidoscopy, at least in the general asymptomatic population over 50 years of age, is still used in some countries (United States of America), because of the need for increasing the number of colonic explorations (lack of possibility to cover the number of required colonoscopies) (1, 3).

We obtained the number of colonoscopies performed each year in various countries from published data (Great Britain) or we calculated it, also from published data (France, United States). In 2001, the British Society of Gastroenterology Working Party suggested that the average of 800-1,000 lower gastrointestinal procedures per 100,000 population should be planned annually (Recommendations of the British Society of Gastroenterology) (8, 12). In 1987 the British Society of Gastroenterology stated that 160 colonoscopies/100,000 inhabitants/year should be performed (10) and in 1990 the same Society recommended 200 colonoscopies/100,000 inhabitants/year (11), which means that in Great Britain the demand for colonoscopies increased more than 5 times in the last 15 years (12). We calculated that in France 1,500 colonoscopies/100,000 inhabitants/year are performed and in the United States 4,950 colonoscopies/100,000 inhabitants/year, respectively.

In Romania, the mean number of colonoscopies/100,000 inhabitants/year in 2003 was 106.3. We consider that it is possible to have underestimated this number, but by no more than 20% (by omitting small centers and private practices), but even an increase by 20%, which means 127.5 colonoscopies/100,000 inhabitants/year seems insufficient for our country.

Regarding the number of colonoscopies performed in different regions of our country, namely the access of the population to this investigation, we obtained the following data: in Moldavia 6,725 colonoscopies in 2003 (mostly of them in one center: Iași), Transylvania - 4,830, Banat - 1,776, Dobrogea - 552, Muntenia - 8,441. By considering the

**Fig.1** Number of colonoscopies/100,000 inhabitants in the different regions of Romania.

number of inhabitants, we could estimate the geographical disponibility of colonoscopy.

What is the cause of the reduced number of colonoscopies in Romania? The small number of centers performing endoscopy or the reduced number of colonoscopies/center? In order to answer this question we compared the number of colonoscopies/year in Romania and Great Britain. Bowles et al (12) demonstrated in a multicentric study that in Great Britain the number of colonoscopies performed/year in non-university hospitals was 447 and in university hospitals 639 (mean/center - 543). In the present study performed in Romania we found that 850 colonoscopies/year were performed in university hospitals and 185 colonoscopies/year in non-university hospitals (mean/center - 517). One can observe that the number of colonoscopies / center performed in Romania and Great Britain (12) do not differ significantly, thus leading to the conclusion that the number of centers performing colonoscopy in Romania is insufficient.

In order to perform a correct and efficient screening for colorectal cancer the number of colonoscopies performed in Romania must increase. Other countries have the same problem regarding the screening for colorectal cancer: insufficient number of colonoscopies/year (13). In our opinion there are several tasks that must be accomplished in order to reach this goal,

- to create colonoscopy centers at least in every county capital (in this case one center could cover aproximately 500,000 inhabitants). In each of these centers a minimum of 1,000 colonoscopies/year should be performed, thus achieving 200 colonoscopies/100,000 inhabitants/year. This number is insufficient, but it is a start. In order to achieve 1,000 colonoscopies/year/center, 4 colonoscopies should be performed each day, so that an endoscopist would spend at least 2-3 hours every day only for colonoscopy (the mean time needed for a colonoscopy is 30 minutes, with limits between 20 to 40 minutes) (14). This is why we consider that each regional center of endoscopy should have at least 2-3 endoscopists trained to perform adequate colonoscopy;

- to establish second opinion centers, usually university centers, that should perform colonoscopies required to cover the territory, accept the cases not solved in the county centers, and also perform interventional endoscopies. These centers should have an adequate number of trained endoscopists (minimum 3-5) in order to perform 2000-2500 colonoscopies/ year. One must remember that in his daily activity an endoscopist has also to perform other endoscopic manoeuvres besides colonoscopy, and in a university center there are several academic activities that should be covered;

- to adequately train the endoscopists for colonoscopy, so that the proportion of colonoscopies in which the caecum is reached should exceed 90%, in order to ensure a good exploration of the colon. In many countries the training for colonoscopy is not satisfactory. In a study conducted in Great Britain (12) the caecum was reached only in 76.9% of the cases and in a study performed by Cotton et al. (14) in the USA in 88% of the cases, respectively. The rate of success in reaching the caecum depends on the experience of the endoscopist and also on the number of colonoscopies performed each week. This is also true for Romania where the number of colonoscopies performed by a fellow in gastroenterology is probably too small (firstly, because the number of colonoscopes in the training centers is not sufficient and, secondly, because the lack of dedicated trainers in certain cases);

- to provide the colonoscopy centers with an adequate number of endoscopes in order to ensure a sufficient number of colonoscopies/week;

- to obtain a proper reimbursement for endoscopic manoeuvres from the National Health Insurance Company. Presently, the reimbursement is much lower than the real costs, so that the number of colonoscopies performed is small. A proper reimbursement would stimulate the establishment of new centers of colonoscopy, especially private practices.

This paper is aimed to be a signal of alarm for the Romanian Society of Gastroenterology, for the Romanian Society of Endoscopy and especially for the National Health Authorities (Ministry of Health and Family and the National Health Insurance Company). We must state that, if we want to do something in order to reduce the mortality from colorectal cancer in Romania, if we really want to perform a national screening program for colorectal cancer, we must do it at all levels. Otherwise, we will have only pilot centers for the screening of colorectal cancer, which will not reduce significantly the incidence of colorectal cancer in Romania.

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