

Screening of colorectal diseases among individuals without family history in a private hospital, Tehran, Iran from 2011 to 2013

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Abstract: As with other kinds of diseases, the general rule with colorectal disorders is that the chances of cure are better in individuals whom earlier detected and treated. The aim of this descriptive study was to determine the results of a 2-year colorectal disease screening using colonoscopy. In this descriptive cross-sectional study 311 individuals who were referred to Resalat Tehran hospital for colorectal diseases screening from 2011 to 2013 without family history for colorectal cancer (CRC) were examined. Of 311 individuals enrolled in the study, 63.7% have had at least one abnormality in their colon or rectum. Most common colorectal disorder among our study population was hemorrhoid with 39.7% and the most important one was colon polyp detected in 49 patients (25.9%). In conclusion, the high prevalence of colon polyps in our study implies the crucial role of screening plans to prevent the further healthcare problems in Iranian population.

Keywords: Colorectal cancer (CRC); screening; colon polyp

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Introduction

Colorectal cancer (CRC) is considered as third common diagnosed cancer worldwide with approximately 1.4 million new cases a year (1) and it is also accounting for more than 8% of cancer related deaths among both genders in the US (2). Almost all CRCs develop from colorectal polyps. Colorectal polyps are small benign lesions called adenoma and their progression leads to make larger malignant mass that called carcinoma. This process requires time and finding them with the help of screening programs could stop their progression and carcinogenesis (3). The frequency of CRC has decreased in recent years and this might be due to early diagnosis which has enhanced the chance of treatment and in result it has increased the patient's survival (4). Endoscopic screening is comprised of four techniques including: sigmoidoscopy, colonoscopy, barium enema and computed tomographic colonography (5). Computed tomographic colonography is more sensitive

than barium enema to detect colorectal polyps (6). Family history could be a risk factor for growth of adenoma lesions of bowel, but some studies have claimed that this hypothesis is not true for the earlier stages of cancer development such as the origination of adenoma polyps (7). Limited data is available from evaluation of accuracy of the self-reported reason for screening of colorectal diseases. Self-reported reason could be screening or diagnosis (8). The aim of our study was to determine the prevalence of colorectal disorders among individuals whom self-reported referred to a private hospital with reason of screening.

Methods

In present descriptive cross sectional study, cases were enrolled in the study in a period of 2 years from 2011 to 2013 in Resalat Hospital, a private center in Tehran. All of individuals whom referred to the gastrointestinal (GI)

clinic with screening reason were selected for study. An inclusion criterion was status of reason for colonoscopy. Only individuals with screening and no history of GI cancer and negative family history for CRC were included. Family history was defined as having a first degree relative with CRC. Some of individuals have had history for GI symptoms but no personal record of GI cancer or professional involvement in health care. Subjects with previously identified colon polyp or colorectal malignancies including CRC and familial adenomatous polyposis (FAP), inflammatory bowel diseases (IBD) were excluded from study. Study population consisted of 311 individuals with mean age of 55.2 ± 12.6 , 159 women (51.1%) with mean age 54.6 ± 11.7 and 152 men (48.9%) with mean age 55.9 ± 13.6 admitted to Resalat Tehran private Hospital for colorectal screening. Full colon exam was performed on 311 individuals whom enrolled in the study using colonoscopy technique. Subjects with abnormal colonoscopy results were targeted for biopsy and further pathologic analysis.

Results

Mean age of total study population and subgroups (men/women) weren't significantly different. According to final Diagnosis based on colonoscopy results 113 individuals (36.3%) have had normal colon but in 189 persons (61.1%) one or more abnormality were reported. One case has missing data and eight cases (2.6%) were not well-prepared for colonoscopy. Seventy five out of total 311 screened individuals (24.1%) including 37 women and 38 men suffered from Hemorrhoid with mean age 55.5 ± 13 comparing with 54.2 ± 11.5 in normal individuals. When we limited the investigation to individuals with abnormal colonoscopy results, hemorrhoid accounts for more than 36% of abnormalities. No significant difference between gender and age status and occurrence of Hemorrhoid were evidenced ($P > 0.05$). The most common grade was grade II hemorrhoid that found in 21 patients (28.8%). Colorectal abnormalities were detected in 49.4% of individuals under 50 years old compared with 68.9% in over 50 years age group. There was a significant association between over 50 years age and risk of colorectal abnormalities (P value: 0.002, OR: 2.267, 95% CI: 1.350-3.805). Among 189 abnormal colonoscopy results, 75 (39.7%) were reported as hemorrhoid, 49 (25.9%) belong to colon polyp group, 46 (24.3%) were diverticulitis and other disorders including IBD, IBS, lipoma, melanosis and angioectasias were recorded for 19 patients (10.1%). Fifty five (74.3%)

cases of hemorrhoid were detected in patients more than 50 years of age. Forty one out of 49 colon polyps were detected in patients more than 50 years of age. Among 46 cases diagnosed with diverticulitis 37 (80.4%) were in patients more than 50 years old. Amongst 49 patients diagnosed with colon polyp, for 45 patients biopsy and pathologic examination were done. The most prevalent polyp type was hyperplastic polyps detected in 22 patients (48.9%). Mixed hyperplastic adenomatous polyps were detected in 14 patients (31.1%), 15.6% (7 polyps) of diagnosed polyps were adenocarcinoma and only two patients (4.4%) diagnosed with adenomatous polyps.

Discussion

Early detection of colorectal disorders is highly depends on individual's participation in early diagnosis programs which are locally available. Colonoscopy is the best method to detect colorectal disorders because this is the only method that enables tissue biopsy for pathologic examination (9).

Screening of such disorders can meaningfully increase treatment outcomes and survival rates (10), however a lot of patients postpone their treatment due to the lack of awareness about colorectal diseases its signs or they are too embarrassed to look for medical support while there are valuable benefits including timely disease management in this phenomenon (11,12).

In addition to embarrassment, fear of pain and lack of insurance are main barriers which put pressure on average and low risk patients (13).

Since the common malignancies of colorectal are begin with simple and benign colorectal disorders and therefore individual factors like age, family history (14), life style including nutrition and environmental factors (15) are associated with CRC incidence.

Evaluating these risk factors providing useful insight into understanding the mechanisms underlying long term changes leading to CRC and this will help to improve clinical managements for related patients (16).

Bowel wall consists of a uniform plan and from inside out the layers are mucosa, submucosa, muscularis and serosa. Most colorectal disorders are originated from this laminated casing. Complications of the bowel comprise a wide-ranging situations which vary from slightly irritating to highly life threatening (17-19). Major anatomical disorders of colon and rectum are CRC, colon polyp, IBD, diverticulosis and hemorrhoid (20-22). The exact prevalence of hemorrhoid is hard to assess using the available databases but there are

some studies with controversial results. Riss *et al.*'s study in 2012 showed a prevalence of about 39% (23). But a previous study in 1990 revealed a 4.4% prevalence in the United States with a peak in 45 to 65 years in both sexes (24). Our data, however, detected 23.5% and was in concordance with Riss *et al.*'s findings. Small external bulging sacs of the colon wall known as diverticula and might be associated with inflammation or infection so it is called diverticulitis. Just about 25% of patients who suffered from diverticulosis will develop to diverticulitis (25,26). Diverticulosis could lead to rectal bleeding, abdominal infection and rarely colon obstruction. Data from prevalence of diverticulitis among Iranians is very limited. According to our database search, we have only found Dabestani *et al.*'s study over 33 years ago that reported the 1.2% to 2.4% diverticulitis subjects among 556 individuals using barium enema method (27). Frequency of diverticulitis in United States is about 5% among people under 40 years old, increasing to 65% in men and women aged over 65 (28). Diverticulosis was one of prevalent abnormalities among our study population which was found among 46 patients (24.3%).

Results of our study confirm that nearly half individuals referred to a private GI center have at least one disorder in their colon or rectum. Frequency of diverticulitis among our study population was higher than previous study in Iran so it could be helpful to perform a comprehensive study on the prevalence of diverticulitis in a larger population.

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