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Global perspective on colonoscopy use for colorectal cancer screening: A multi-country survey of practicing colonoscopists

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ABSTRACT

Objectives: To examine colorectal cancer screening practices among colonoscopy specialists from 5 countries and inform public health needs in improvement of the ongoing global crisis in colorectal cancer.
Methods: An online survey among colonoscopy specialists was conducted in France, Germany, the United Kingdom, Japan, and the United States. The survey covered topics on colonoscopy practices in the screening as well as in the treatment setting, as well as expected trends.
Results: Participating colonoscopy specialists included 114 physicians from the United States, 81 from France, 80 from Germany, 80 from the United Kingdom, and 156 from Japan. Survey results revealed that 59%–73% of colonoscopies were performed in patients aged 50–75 years old, with 15%–23% performed in patients < 50 years old. The proportion of patients with age-based versus symptom-based first colorectal cancer screening varied by country and age. Sedation protocols varied by country; however, rate of incomplete colonoscopy was low in all countries. The proportion of negative first colonoscopies decreased with age in all countries.
Conclusions: This multi-country survey of real-world clinical practices suggests a need for improved participation in population age-based colorectal cancer screening and possibly younger age of screening initiation than currently recommended by guidelines. The variation among countries in the proportion of patients who received their first colonoscopy due to age-based colorectal cancer screening versus symptom-based initial colonoscopy indicates that population-based screening initiatives and improved health outcomes will benefit from public health awareness programs.

1. Introduction

Colorectal cancer is a major burden throughout the world, with over 1.4 million cases, 95% of which are adenocarcinomas [1], and 693,900 deaths occurring worldwide in 2012 [2]. It can largely be prevented by the detection and removal of adenomatous polyps [3], and survival is significantly better when colorectal cancer is diagnosed while localized [4]. For that reason, population-based screening is widely recommended in both Europe and the US, and guidelines have been prepared to provide recommendations on colorectal cancer screening approaches.

Over the last decade, a whole range of technologies have been introduced in clinical practice to diagnosed and treat colorectal cancer [5–8]. In term of screening, various non-invasive techniques, such as fecal occult blood tests (FOBT) and stool DNA tests (FIT-DNA) have been developed, as well as blood based tests [5–8]. The main advantage of these tests is their convenience for the patients which could improve colorectal cancer screening uptake. Although these tests are more comfortable for patients, recent clinical trial results showed there is still room for improvement in terms of test sensitivity [9,10]. Therefore, colonoscopy remains an important technique for the screening of colorectal cancer [11].

Recent advances in the field of colonoscopy, including new technologies [12] and techniques that improve polyp detection and mucosal resection and improvements in colorectal pathology management have led to improved patient care [13,14]. As colonoscopy remains the standard of care for colorectal cancer screening and management in Western countries, we wanted to determine how this translates into the daily routine of colonoscopists. In this paper, we describe the practices of colonoscopists in 5 countries, namely France, Germany, the United Kingdom (UK), the US and Japan. Our goal was to examine practices related to the colonoscopy procedure, including the purpose of the first colonoscopy procedure, rate of incomplete procedures, sedation protocols, and practices following positive colonoscopies, as well as age of the patients receiving first colonoscopies. Additionally, we examined trends in the volume of procedures performed during the previous 2

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years.

2. Methods

2.1. Study sample

Endoscopists from France, Germany, the UK, the US, and Japan were invited to take an online survey to determine current practices in colorectal cancer screening in their countries. In the US, 340 endoscopists were invited by email from the Deerfield Institute (New York, NY, USA) proprietary panel of colorectal surgeons, gastroenterologists and internal medicine specialists. In France, Germany, the UK, and Japan, an external provider, M3 Global Research, was used to contact endoscopists. M3 is a panel provider which has access to a broad range of physicians, including those who specialize in gastroenterology or colorectal surgery. A total of 1154 gastroenterologists and colorectal surgeons were contacted in France, 1002 in Germany, 1428 in the UK, and 10,182 in Japan. Because the M3 panel did not document participants' experience in colonoscopy specifically, all gastroenterologists and colorectal surgeons were invited. Eligibility to complete the survey was determined through the screening criteria related to colonoscopy specialty practice. Colonoscopy specialists were eligible to participate if they personally performed at least 10 colonoscopies in a typical month and if their practice contained at least 2 endoscopy rooms. Based on these criteria, it is believed that only specialists with experience in colonoscopy entered the survey. All respondents were invited by email to participate in the survey, which was accessible online from March 3, 2016 to April 3, 2016. Participants were offered an industry-standard honorarium as compensation for their time in completing the survey.

By electing to complete the survey, respondents provided consent to use their anonymous responses to the survey questions. The study did not involve patients and data on patient characteristics within colonoscopy practices were provided only in the aggregate. As such, there was no institutional review board and/or licensing committee involved in approving the research and no need for informed consent from the participants per US regulations (§46.116 General requirements for informed consent. Available at: http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html#46.102).

2.2. Survey design

The survey was developed to assess current colon screening practices by colonoscopy specialists. The online questionnaire consisted largely of quantitative questions that addressed topics related to colonoscopy practices and patient characteristics. Colonoscopy practice information reported by survey respondents included general practice information (ie, number of colonoscopies performed in the past 12 months, sedation protocol, complications, patient volume trend in the previous 2 years), characteristics of first colonoscopies (ie, reasons for performing, proportion of complete versus incomplete colonoscopies, reasons for incomplete colonoscopies, outcomes of colonoscopies performed, procedures performed during positive colorectal cancer screening), and reasons for follow-up colonoscopies performed. Patient characteristics reported by survey respondents included proportion of male and female patients and proportion of patients in age groups < 50 years old, 50–64 years old, 65–75 years old, and > 75 years old. Survey participants also answered qualitative questions assessing the trend in patient volume for colonoscopy procedures in the past 2 years.

2.3. Data analysis

The individual identities of the survey respondents were blinded to the study authors. All survey data obtained from each country were analyzed separately. Results were categorized by country (France, Germany, the UK, the US, and Japan) and by patient age groups (< 50 years old, 50–64 years old, 65–75 years old, > 75 years old). The planned analyses for quantitative data were descriptive statistics and included means and percentages. Data from each respondent was weighted by the total number of colonoscopies they performed to account for the differences between large and small practices. No formal statistical tests were performed as no specific hypothesis was intended to be tested. Qualitative data were assessed thematically and coded according to the main themes of the survey questions. Any responses that addressed multiple themes were counted as multiple comments.

3. Results

In the US, 138 of the 340 recipients of the Deerfield Institute survey responded; 114 met eligibility criteria for number of procedures/procedure rooms and completed the survey. From the M3 panel, a total of 954 physicians responded to the survey invitation, and 397 met eligibility criteria and completed the survey, including 81 from France, 80 from Germany, 80 from the UK, and 156 from Japan.

3.1. Colonoscopy patient characteristics

The distribution of colonoscopy procedures among age groups (Table 1) shows that across all 5 countries, 59%–73% of colonoscopies were performed in patients aged between 50 and 75 years old. This is in line with the EU and US guidelines for initiating colorectal cancer screening colonoscopy in patients aged 50–75 years. Patients outside of this age bracket do receive colonoscopy as well, with 15%–23% of patients below 50 years old and 14%–21% of patients older than 75 years of age receiving colonoscopy across the 5 countries (Table 1). The patient ratios by sex were similar across countries, with reported male patient screening of 48% in the US, 50% in Germany and the UK, 52% in France, and 55% in Japan.

3.2. Colonoscopy general practice

Sedation protocols varied greatly by country (Fig. 1). Absence of sedation was most common in Japan at 58% of patients. Conscious sedation was most common in Germany (86% of patients) and the UK (76% of patients), and deep sedation was most common in the US (53% of patients) and France (76% of patients).

The proportion of patients who experienced complications during or directly following colonoscopy was reported as 2% in France, 1% in Germany, the UK, and Japan, and < 1% in the US. When complications did occur, it was primarily bleeding (ranging from 45% in France to 60% in Germany), followed by perforation in France and Japan (22% and 15%, respectively), and cardiorespiratory events in Germany, the UK, and the US (12%, 13%, and 16%, respectively). Peritonitis-like syndrome ranked third in all countries (ranging from 9% in the US to 21% in France).

Survey respondents who reported an increase in colonoscopy

Table 1
Split of colonoscopies performed by country and patient age group.

Country	Number of colonoscopies during 12-month period (Mean)	Proportion of colonoscopy per patients' age group			
		< 50 y	50 to 64 y	65 to 75 y	> 75 y
France	685.6	21%	35%	28%	16%
Germany	702.8	23%	36%	27%	14%
UK	343.5	23%	28%	31%	18%
US	1303.8	15%	45%	28%	12%
Japan	436.8	20%	27%	33%	21%

UK, United Kingdom; US, United States; y, years.
Based on 81 colonoscopists in France, 80 in Germany, 80 in the UK, 114 in the US and 156 in Japan.