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Age differences in presentation, diagnosis pathway and management of colorectal cancer

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ABSTRACT

Background: The gap in survival between older and younger European cancer patients is getting wider. It is possible that cancer in the elderly is being managed or treated differently than in their younger counterparts. This study aims to explore age disparities with respect to the clinical characteristics of the tumour, diagnostic pathway and treatment of colorectal cancer patients.
Methods: We conducted a multicenter cross sectional study in 5 Spanish regions. Consecutive incident cases of CRC were identified from pathology services. Measurements: From patient interviews, hospital and primary care clinical records, we collected data on symptoms, stage, doctors investigations, time duration to diagnosis/treatment, quality of care and treatment.
Results: 777 symptomatic cases, 154 were older than 80 years. Stage was similar by age group. General symptoms were more frequent in the eldest and abdominal symptoms in the youngest. No differences were found regarding perception of symptom seriousness and symptom disclosure between age groups as no longer duration to diagnosis or treatment was observed in the oldest groups. In primary care, only ultrasound is more frequently ordered in those <65 years. Those >80 years had a significantly higher proportion of iron testing and abdominal XR requested in hospital. We observed a high resection rate independently of age but less adjuvant chemotherapy in Stage III colon cancer, and of radiotherapy in stage II and III rectal cancer as age increases.

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Conclusion: There are no relevant age disparities in the CRC diagnosis process with similar stage, duration to diagnosis, investigations and surgery. However, further improvements have to be made with respect to adjuvant therapy.

1. Introduction

Colorectal cancer (CRC) is one of the most common cancers in Spain and the most frequent malignant disease in elderly people. In Spain, more than 88% of cases occur in those aged 60 and over and 33% in those older than 80 years. A further increase is expected in the future as life expectancy increases [1]. Clinical trials and population-based studies have shown no age-related differences in mortality after adjuvant treatment of colon cancer [2]. However, there is a gap in survival rates between older and younger CRC patients [3] that is getting wider [4]. Reasons for CRC survival differences by age have been explained by the results of studies on cancer care in elderly patients, which showed fewer diagnostic and staging procedures as well as less treatment [5].

It is possible that older cancer patients are being managed differently from their younger counterparts by their general practitioners (GP) or hospital physicians. For instance, some authors have described a greater number of missed opportunities to initiate an evaluation for CRC diagnosis in older patients in primary care or outpatient settings [6]. In addition, older patients' response to cancer symptoms could differ from that of younger individuals and result in different attitudes to help-seeking [7]. As a consequence, patient age could have an impact on the length of the interval from symptom onset to diagnosis of colorectal cancer, with a longer period in older people [8–10]. Studies of CRC in the elderly suggest that the oldest patients are more likely to present with later-stage disease than younger ones. With advancing age, there is also an increasing proportion of patients who undergo emergency surgery and a diminishing proportion of patients who receive curative surgery [11].

Moreover, significant advances in CRC treatment do not seem to be benefiting older people as much as they could. Previous research has described significant variability within the elderly population in terms of surgery and the use of adjuvant chemotherapy or radiation therapy [11]. Various studies on colorectal cancer surgery and treatment outcomes show a progressive increase in post-operative morbidity and mortality with advancing age [11–13]. As a result, some quality indicators during the diagnostic process and overall care of CRC have been suggested to obtain better outcomes in the elderly [14].

This paper aims to explore age disparities with respect to the clinical characteristics of the tumour, the diagnostic pathway and the treatment of colorectal cancer patients.

2. Methods

2.1.1. Population and study setting

We conducted a multicenter, cross-sectional study in 5 Spanish regions. Subjects were consecutive incident cases of CRC (International Disease Classification 153–154) diagnosed and recruited through pathology services from 9 public hospitals between September, 2006 and September, 2008 and registered with a GP. In Spain, each hospital has a specific number of health centres assigned, that cover a well defined reference population. Prevalent or recurrent, patients with multiple tumours and those diagnosed in private hospitals were excluded. Patients were contacted during the inpatient stage or oncology visit by their specialist who invited them to participate in the study after signing informed consent. Methods have been published elsewhere [15,16].

2.2. Data collection procedures

Data were obtained by GPs and nurses from patient interviews together with reviews of primary care and hospital clinical records. They received training during two days with 7 patient interviews simulations. At the same time they had to review hospital and primary care clinical records of the seven cases and fill in the questionnaires. Furthermore, each field investigator had an investigator brochure with all instructions in order to standardize data collection. Moreover, we carried out a pilot study with 5 patients per region and afterwards questionnaires were reviewed in order to improve inconsistencies.

For these analysis we used: *Measurements from interview*: Marital status, level of education, social class [17], age, *family history of cancer*. *Initial symptom/s:* Each patient was asked how long he/she had been feeling unwell and given a checklist of 22 symptoms to identify the type of symptom/s noted and avoid underreporting. Symptoms spontaneously mentioned by the patient were considered as the initial symptom/s for that patient and the date was recorded. If the patient could remember the exact day, then this data was recorded. If the patient could not remember accurately the data of onset, e.g. if he said two month ago, then the date was calculated two months backwards from the date of the interview. Afterwards, when the patient finished his/her spontaneous story, the interviewer asked them if he/her presented any of the other symptoms of the list. When questions about symptoms finished, the interviewer recapitulate all data recorded in order to obtain patient agreement. The checklist of symptoms was based upon authors bibliography review and after consensus with an oncologist and a gastroenterologist. No special help were given with the answers.

Perception of symptom seriousness: Patient was asked if the initial symptom/s was considered: Very serious, quite serious, not serious, other. *Disclosure of symptoms.* Patient have to answer disclosure of symptoms to a list of family members and quittance. For present analysis responses were aggregated: If patient disclosed his/her symptom to somebody or not. *Help-seeking action.* Patient was asked what he/she did after onset of first symptom/s. Visit a doctor, wait for symptom to clear up, other. All this three variables were not validated but exploratory measures.

Date of health services first contact. Health services first contact: After feeling unwell, which doctor patient contacted. GP, family practice emergencies, hospital emergencies, private doctor or private hospital, other.

Measurements of hospital records: Review of hospital records were done after interview. After identify date of diagnosis from pathology report, data manager proceeded to backward review in order to identify first contact related with CRC symptom/s. *Tumour localization, TNM. First Service attending the patient. Examinations:* A checklist of possible physical examinations and investigations were recorded. *Number of outpatient visits before diagnosis:* all outpatient visits related with CRC symptom/s were registered. *Date and type of treatment*, i.e. date of surgery, date of preoperative or postoperative radiotherapy or chemotherapy or date of