

Cancers among Patients Diagnosed as Having Diverticular Disease of the Colon

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ABSTRACT

Objective: To assess the incidence of underlying malignancy in patients with a diagnosis of diverticular disease of the colon.

Design: Retrospective cohort study.

Setting: University hospital, Sweden.

Subjects: 7159 patients discharged from hospital with a first diagnosis of diverticulosis or diverticulitis in central Sweden 1965-1983.

Intervention: The cohort was followed up for two years for the occurrence of cancer.

Main outcome measure: Cancer incidence.

Results: A total of 372 cancer cases were identified (standard incidence ratio = 2.4; 95% confidence interval 2.2 to 2.7). Sites at excess risk during the first year were: colon and rectum, pancreas, prostate, stomach, lymphatic and haemopoietic tissue, liver and bile ducts, ovary and lung, with the highest excess risk in the left colon (standard incidence ratio = 17.8; 95% CI 12.7 to 24.1).

Conclusion: Malignant diseases, especially colorectal cancer, are relatively common among patients with a clinical diagnosis of diverticulosis or diverticulitis of the colon. This may indicate a need for a change in current clinical practice.

Key words: diverticulosis or diverticulitis of the sigmoid colon, cancer.

RÉSUMÉ

But: Déterminer chez les patients pour lesquels a été posé un diagnostic de maladie diverticulaire du côlon, l'incidence d'une affection maligne sous jacente.

Type d'étude: Rétrospective d'une cohorte.

Provenance: Hôpital universitaire, Suède.

Patients: Sept mille cent cinquante neuf patients ayant quitté l'hôpital avec un premier diagnostic de diverticulose ou de diverticulite dans le centre de la Suède entre 1965 et 1983.

Méthodes: Les patients de la cohorte ont été suivis pendant deux ans pour rechercher un cancer.

Principaux critères de jugement: La survenue d'un cancer.

Résultats: Trois cent soixante douze cancers au total ont été identifiés (pourcentage d'incidence standard = 2,4; intervalle de confiance de 95% (IC95%); 2,2 à 2,7). Les sites préférentiels de développement d'un cancer pendant la première année étaient: le côlon et le rectum, le pancréas, la prostate, l'estomac, les tissus lymphatique et hématopoïétique, le foie et les voies biliaires, l'ovaire, et les poumons; le risque le plus élevé concernant le côlon gauche (pourcentage d'incidence standard = 17,8; IC 95%; 12,7 à 24,1).

Conclusion: Les affections malignes, et notamment les cancers colorectaux sont relativement fréquents parmi les patients chez lesquels a été posé cliniquement le diagnostic de diverticulose ou de diverticulite du côlon. Cela pourrait inviter à modifier les habitudes cliniques dans ce domaine.

INTRODUCTION

Diverticulitis of the sigmoid colon is a clinical diagnosis and in common clinical practice the diagnosis is considered to be confirmed if diverticulosis is present on a barium enema after the symptoms have settled. The prevalence of diverticulosis of the colon in the western world has been reported to be 10%-20% in patients aged 40-59 years old and from 30% to over 50% in patients 70 years old or more [9, 10, 14]. As the clinical symptoms of diverticulitis resemble those

of many cancers the presence of underlying malignant disease, particularly in the gastrointestinal tract, is not unusual in patients with a clinical diagnosis of diverticulitis.

The aim of this study in the Uppsala health care region 1965-1983 was to assess the magnitude of the problem of underlying malignant disease in a population-based cohort of patients with the diagnosis of diverticulosis or diverticulitis of the colon who were followed up for the first two years after discharge from hospital.

SUBJECTS AND METHODS

The cohort

The Uppsala health care region, which covers six counties, is located in central Sweden and had, during the study period, a population of 1.2–1.3 million people. As there is almost no private inpatient treatment in Sweden, hospital provided medical services are population based and referable to the county in which the patient lives. From 1965 until 1983, the Swedish National Board of Health and Welfare received annual reports from all inpatient medical institutions in Sweden and recorded data on individual hospital admissions and discharges in the inpatient register for all inhabitants within the Uppsala health care region.

As well as a national registration number (a unique personal identifier assigned to all Swedish citizens) each record contains data on place of residence, hospital department, surgical procedures, and up to eight discharge diagnoses. These diagnoses were coded according to the seventh revision of the International Classification of Diseases until the end of 1968 and according to the eighth revision thereafter. A recent publication estimated that the overall extent of under-reporting to the inpatient register was less than 2%. Severe under-reporting occurred in certain counties during a limited period but represented only a few percentage points of the estimated total number of hospital admissions [13].

All patients with records in the inpatient register containing a diagnostic code for diverticulosis (ICD 7 code 572.12 and ICD 8 code 562.10) or diverticulitis (ICD 7 code 572.11 and ICD 8 code 562.11) of the colon and without a diagnosis of cancer were considered for inclusion in the study at the date of first discharge with that diagnosis. The national registration number allowed us to select the first recorded discharge with this diagnosis for each person. A total of 7630 were given a discharge diagnosis of diverticulosis or diverticulitis at least once during the period 1965–1983 and were potentially eligible. We excluded 128 because they were entered on the inpatient register with an incomplete or inconsistent national registration number and were not available for follow up. Through the National Census Bureau and the emigration register we were able to confirm that the remaining members of the cohort who were alive were living in Sweden on 31 December, 1985. A total of 343 cases were not found in any of these registers, probably because they were entered in the inpatient register with an incorrect national registration number and they were excluded. The number of patients available for follow up was therefore 7159, 2478 of whom were men and 4681 women. At the

time of first discharge 1410 patients were under 60 years of age, 1665 were 60 to 69, and 4084 were 70 or over.

Follow up

Record-linkage (based on the national registration number) to the nationwide register of causes of death led to information on the date of death among those who had died before the end of 1985. The National Swedish Cancer Registry, founded in 1958 [11], was used to record all cancers diagnosed in the cohort from the start of follow up until two years after the discharge. The incidence of unreported cases of malignant disease to the Swedish Cancer Registry has been assessed at about 3% [11]. The time of observation was calculated from the date of the first discharge with diverticulosis or diverticulitis of the colon until the finding of cancer or the time of death or the end of the two years' observation period.

The expected number of all cancers was calculated by multiplying the number of person years for each gender by age-specific cancer incidence rates for each five year age group and calendar year of observation. These expected rates were derived from the study population, i.e. the Uppsala health care region.

If the colon cancer was diagnosed by examinations planned in connection with the first discharge with a diagnosis of diverticular disease, the cancer was classified as "not missed". If no further follow-up was planned and the cancer was diagnosed during a later contact with the health care the cancer was classified as "missed". We also recorded the Dukes' classification for every colon cancer to compare the Dukes' classification in the two groups of cancers "missed" and "not missed".

Statistical methods

The standardised incidence ratio (SIR) was defined as the ratio of observed numbers of cancers to those expected. The 95% confidence interval (CI) of the standardised incidence ratio was then calculated on the assumption that the observed number follows a Poisson distribution. The significance of the difference in Dukes' classification in missed and not missed colon cancers was compared with the Mann-Whitney U test for ordered categories [12].

RESULTS

There were 372 cases of cancer (5.2%) diagnosed during the first two years after the first discharge with the diagnosis of diverticulosis or diverticulitis of the colon (SIR = 2.4; 95% CI 2.2 to 2.7). During the first