
IS COLORECTAL CANCER ASSOCIATED WITH DIABETES MELLITUS ?

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Abstract

Background and aim. There is increasing evidence on the association of the metabolic syndrome with the colorectal cancer. We looked for the association of diabetes mellitus, a main component of the metabolic syndrome, with colorectal cancer.

Methods. We looked for all new cases of colorectal cancer in two tertiary centers of a single research center (one of internal medicine with profile of gastroenterology and one of general surgery) in an interval of three years. This was a retrospective study of a series of cases. The cases of gastric cancer collected from the same records served as controls. Comparison between diabetic and non-diabetic patients was performed.

Results. A number of 114 cases with colorectal cancer and of 31 gastric cancer were obtained for analysis. Our data suggest that the colorectal cancer is associated with diabetes in obese patients. On the other hand, the females with diabetes have a double risk of gastric cancer compared to females without diabetes.

Conclusion. Although the association between colorectal cancer and diabetes remains debated, it seems that obesity associated with diabetes is a predisposing factor for colorectal cancer. The risk of gastric cancer in diabetic females deserves further investigation.

Keywords: colorectal cancer, diabetes mellitus, gastric cancer, metabolic syndrome.

ESTE CANCERUL COLORECTAL ASOCIAT CU DIABETUL ZAHARAT?

Rezumat

Introducere și scop. Există dovezi tot mai multe ale asocierii dintre sindromul metabolic și cancerul colorectal. În acest studiu s-a urmărit asocierea dintre diabetul zaharat, ca o componentă majoră a sindromului metabolic, cu cancerul colorectal.

Material și metodă. S-a urmărit prevalența cazurilor noi de cancer colorectal, pe interval de trei ani consecutivi, în două centre terțiare (unul de medicină internă, cu accent pe gastroenterologie și altul de chirurgie generală) aparținând aceluiași centru de cercetare. Acesta a fost un studiu retrospectiv pe o serie de cazuri. Ca lot de control au servit cazurile de cancer gastric colectate din aceleași surse. S-a efectuat comparația între cazurile cu diabet și fără diabet.

Rezultate. Un număr de 114 cazuri cu cancer colorectal și de 31 cazuri de cancer gastric au fost obținute pentru analiză. Datele noastre sugerează asocierea cancerului colorectal cu diabetul la pacienții obezi. Pe de altă parte, femeile cu diabet au risc de cancer gastric dublu, față de femeile fără diabet.

Concluzii. Deși asocierea diabetului cu cancerul colorectal rămâne încă

dezbatută, se pare că obezitatea asociată cu diabetul este un factor predispozant pentru cancerul colorectal. Riscul de cancer gastric la femei cu diabet necesită investigații ulterioare.

Cuvinte cheie: cancer colorectal, diabet zaharat, cancer gastric, sindrom metabolic.

Increasing evidence accumulated in last years regarding the association between the metabolic syndrome and the digestive cancers, mainly colorectal carcinoma [1]. Diabetes mellitus is one of the most important components of the metabolic syndrome [2].

The aim of this study was to look for the association of colorectal cancer with diabetes mellitus.

Methods

Protocol

We undertook a retrospective study. All new cases with colorectal cancer diagnosed in a tertiary center of internal medicine and in a tertiary center of general surgery were collected from the files. The interval of the retrospective investigation was three consecutive years (2008, 2009 and 2010).

As control group served the cases with gastric cancer, which were also collected from the same files for the same time interval.

We looked for the association of diabetes mellitus with colorectal and gastric cancer on this patient sample.

Statistics

Descriptive statistics and estimation of the risk by chi square test were carried out with a commercially available statistical package.

Ethical issues

The study was conducted according to the Declaration of Helsinki for human studies and confidentiality of data was respected.

Results

A number of 114 new cases of colorectal cancer were detected during the three years interval in the medical and surgical ward together. Only 31 cases with gastric cancer were found.

The distribution of the cases is displayed in table 1.

Table 1. Cases with colorectal cancer and gastric cancer.

CALENDAR YEAR	COLORECTAL CANCER			GASTRIC CANCER		
	F	M	T	F	M	T
2008	18	24	42	3	6	9
2009	12	15	27	3	4	7
2010	20	25	45	6	9	15
Total	40	74	114	12	19	31

Legend: F: female, M: male, T: total

The descriptive data of the cases is displayed in table 2 and 3. In table 2 are the cases with colorectal cancer and in the table 3 are the cases with gastric cancer.

Table 2. Descriptive data of the cases with colorectal cancer.

	COLORECTAL CANCER	DIABETES MELLITUS	NO DIABETES MELLITUS
Number of patients	114	26	88
Gender F/M	40/74	10/16	30/58
Mean age±SD	56±12	61±9	54±16

No patient had type 1 diabetes, all presented type 2 diabetes.

Only 6 of the 26 patients with diabetes presented obesity (23%) while 11 out of the 88 patients without diabetes presented obesity (12.5%). It means that the risk of patients with obesity and diabetes to present colonic cancer is almost double than in patients with diabetes mellitus who are not obese.

The gender had no statistical influence on the presence of colorectal cancer.

Table 3. Descriptive data of the cases with gastric cancer.

	GASTRIC CANCER	DIABETES MELLITUS	NO DIABETES MELLITUS
Number of patients	31	8	23
Gender F/M	12/19	4/4	8/15
Mean age±SD	66±13	63±14	67±12

In the case of gastric cancer, again no patient had type 1 diabetes, but all presented type 2 diabetes.

From the 8 patients with diabetes only 1 was obese, and 3 of the 23 non-diabetic patients were obese (13%). The sample was too small to allow any conclusion.

The gender had no statistical influence on the presence of colorectal cancer.

The prevalence of colorectal cancer had a double sex ratio in diabetes versus non-diabetic patients.

The localization of colorectal cancer had no significant preference in relation to diabetes.

Discussion

This is a single center retrospective study looking for the association of colorectal cancer with diabetes mellitus.

Diabetes mellitus is a main component of the metabolic syndrome [2] and the metabolic syndrome is an important risk factor for the colorectal cancer [1,3].

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The mechanism involving the steps from metabolic syndrome to colorectal cancer include dietary risk factors [4,5] and biochemical changes [6-10].

Our data suggest that the colorectal cancer is associated with diabetes in obese patients. On the other hand, the females with diabetes have a double fold risk of gastric cancer compared to females without diabetes. This interesting finding deserves further investigation.

The main limitation of our data is given by the fact that the study was conducted in a single center (including a ward for internal medicine-gastroenterology and a ward for general surgery). However it is consistent with previous data showing a correlation of colorectal cancer with another component of the metabolic syndrome, the coronary heart disease [11].

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