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ORIGINAL ARTICLE

PRELIMINARY STUDY SUGGESTS LOW INCIDENCE OF GASTRIC CARCINOMA IN KELANTAN RELATES TO LOW RATE OF *HELICOBACTER PYLORI* INFECTION

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***Helicobacter pylori*-associated gastric carcinoma is generally more common in the antrum/body and is of the intestinal type. The aim of this study was to determine the pattern of gastric carcinoma in an area known to have a low prevalence of *H. pylori*. Pathology records of gastric carcinoma diagnosed at Hospital University Sains Malaysia between 1995 and 1999 were retrieved and studied. There were a total of 23 cases. The median age was 60 years. Eighteen patients were Malay and 5 were Chinese. The most common location of the tumour was the cardia/gastro-oesophageal junction (61%, 14/23 patients). The majority was of the intestinal type (69.6%, 16/23). The frequency of gastric carcinoma appears to be exceptionally low in the area of study. The Chinese population was over-represented. The higher frequency of tumour in the cardia/gastro-oesophageal junction as compared to the antrum and body is in sharp contrast to most other studies. This reaffirms the notion that *Helicobacter pylori* infection is a causative agent for non-cardia gastric carcinomas.**

Key words : *gastric carcinoma, low H. pylori prevalence*

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Introduction

Cancer of the stomach is the second most common fatal malignancy in the world. Its incidence varies worldwide, being high in Japan and considerably lower in the United States, United Kingdom and Canada. It is ranked fourteenth among all primary cancers in Hospital University Sains Malaysia during the period 1995 to 1999.

There are many aetiological factors associated with gastric carcinoma. The incidence of *Helicobacter pylori* closely parallels that of gastric carcinoma and it is considered to be an essential co-factor in the pathogenesis of the intestinal type of gastric carcinoma (1). *H. pylori*-associated gastric carcinoma is generally more common in the antrum and body as compared to the cardia (2,3).

Kelantan is reported to have one of the lowest prevalence of *H. pylori* infection in the world (4). With this unique epidemiological pattern the main aim of this study was to compare the local pattern of gastric carcinoma to that reported in the literature.

Materials and Methods

The pathology records of gastric carcinoma diagnosed at Hospital USM, Kota Bharu between 1995 and 1999 were retrospectively reviewed. The biographic data of patients with reference to age, sex and racial group were documented. Further information as to the type of specimen received at the laboratory, the site of gastric carcinoma and its histological type according to the modified Lauren classification were determined. Biopsy sections were not examined for *H. pylori*.

Results

A total of 964 gastric biopsies and gastrectomy specimens were received at the laboratory between 1995 and 1999. There were 23 cases of gastric carcinomas (19 males, median age 60 years and range 49 to 86 years) diagnosed based on sixteen gastric biopsies and seven gastrectomies. The ethnic composition consisted of 18 Malays and 5 Chinese. The majority of the tumours were located in the cardia/gastro-oesophageal junction (14/23, 61%) while 5 tumours were in the body and 4 in the antrum. All tumours were adenocarcinomas. The most common histological type of gastric carcinoma according to the modified Lauren classification was the intestinal type (16/23, 69.6%) with 5 cases (21.7%) of diffuse type and 2 cases of mixed type.

Discussion

The incidence of gastric carcinoma appears exceptionally low in our institution and is further substantiated by another recent study conducted in Kelantan where the calculated incidence rates for gastric carcinoma in 1997, 1998 and 1999 were 1.4, 1.2 and 1.2 per 100,000 population respectively (5). *Helicobacter pylori* has been classified by the International Agency for Research on Cancer (IARC) as a group I carcinogen (1). The hypothesis is that *H. pylori* causes chronic atrophic gastritis and intestinal metaplasia which progresses to gastric dysplasia and carcinoma. Therefore it is not surprising that the incidence of gastric carcinoma closely parallels that of *H. pylori* infection rates.

The median age of our gastric carcinoma patients of 60 years is comparable to most other series. Gastric carcinoma is known to be more common in males. According to hospital statistics, Chinese represented less than 9% of the annual number of inpatients and outpatients during the study period. It is obvious that this ethnic group is over represented in this series (22%) although the number of cases is small. The ethnic disproportion was also reflected in the study conducted in Kelantan in which Chinese formed 19.3% of patients with gastric carcinoma (5).

In most series where the *H. pylori* infection rates are high, gastric carcinoma is most often located in the non-cardia location (2,6). However in our study 61% (14/23) of cases had tumour in the cardia/gastro-oesophageal region. This finding was reaffirmed in the Kelantan study in which 71% of tumours were located in the proximal part of the stomach (5). In another study that looked at *Helicobacter pylori*-seronegative gastric carcinoma, the most common site of tumour was the cardia and of the diffuse histologic type (7).

It has been generally accepted that *H. pylori* is linked to the intestinal type of gastric carcinoma while the diffuse and mixed types are due to other environmental influences (3,8). However there has been recent evidence that suggests no difference in occurrence of *H. pylori* between intestinal and diffuse type of carcinoma (3,9,10). In our series the intestinal pattern was the most common histological type with even lower numbers of the diffuse and mixed types.

Conclusion

The frequency of gastric carcinoma is exceptionally low in Kelantan. The Chinese were over-represented. The higher frequency of tumour in the cardia/gastro-oeophageal junction as compared to that of the antrum/body is in sharp contrast to most other series. This adds to the already existing evidence that *H. pylori* is important in the genesis of gastric carcinoma.

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