PROGNOSTIC FACTORS IN CARCINOMA OF LARGE BOWEL

THESIS

Submitted for Partial Fulfilment
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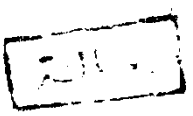

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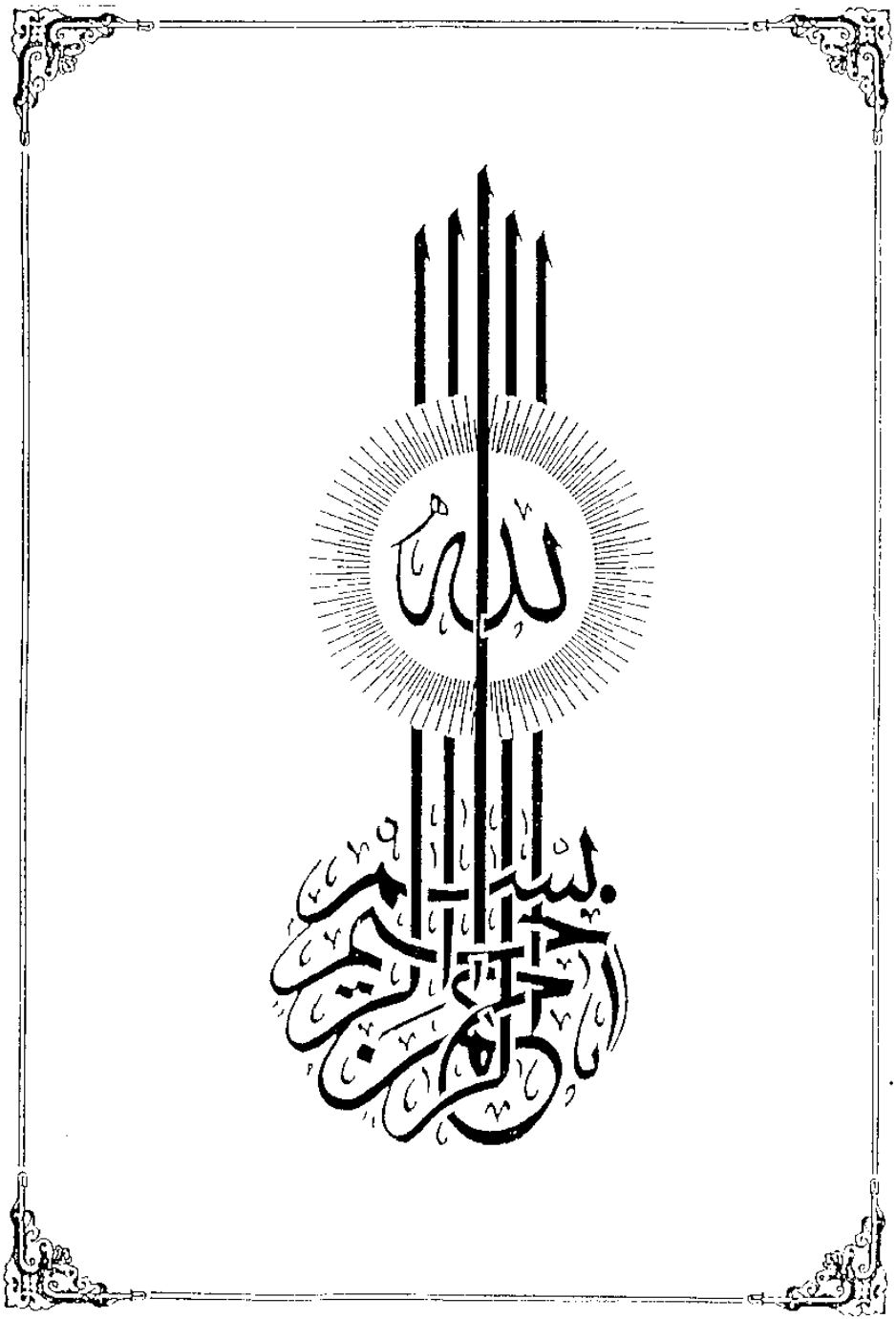
TO THE SOUL OF MY FATHER

TO MY DEAR MOTHER

TO MY BE LOVED WIFE



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CONTENTS

INTRODUCTION

INTRODUCTION AND AIM OF WORK

Although the prognosis of neglected or lately diagnosed carcinoma of the large bowel is very gloomy as no survivals are reported after five years in metastatic which is partially due to recurrences whether local or distant (Mzabi et al., 1976), a five year survival of 90% is reported by different authors of early cases where the tumor is only mucosal (Rubio et al., 1977 - Pihl et al., 1980), and it appears that a proper fore-knowledge of the extent of the disease could allow for choosing the appropriate type of surgical extirpation. There are many predisposing causes to the disease, which could be potentiated by environmental factors and lead to the disease. So many prognostic factors are known and have been extensively studied, which help in assessing cases of cancer large bowel and in planning appropriate management.

The aim of this study is to review the high risk factors which make people more vulnerable for developing cancer large bowel with particular stress on the environmental factors. It also aims at clarifying the different factors which affect prognosis, especially levels of carcinoembryonic antigen, in order to draw due attention and to bring it to awarness of clinicians, in an attempt to evaluate the relative importance of such prognostic factors. If any one factor prooves a fine index of spread of disease, it may be suggested in the future to be used for screening of patients to modify the radicality of the primary operation and to spot cases of very early recurrences.

REVIEW OF LITERATURE

INCIDENCE

INCIDENCE OF LARGE BOWEL CANCER

Carcinoma of the colon is one of the really common cancers (Goligher et al., 1980). In the United States, cancer of the large bowel (colon plus rectum) is the most frequent malignant tumor - 14.7% of all human cancers (Ackerman and Del Regato's, 1977). It is the second most common cause of death from cancer in the United States (Silverberg and Lubera, 1983). The Registrar-General records in England and Wales shows that during 1976 there were 17268 deaths from carcinoma of the large bowel. This figure is next to carcinoma of the bronchus (Goligher et al., 1980). Deaths from cancer of the rectum and colon, in England and Waler were 16977 in 1945, 14558 in 1957 and 15758 in 1969 (Goligher et al., 1980). Moreover there have been no remarkable changes in incidence or mortality from colon and rectum cancer in the last 50 years (Sugarbaker et al., 1982). In Egypt due to lack of population based cancer registries and morbidity surveys, the only available source of morbidity statistics is hospital based registries. According to statistics of the National Cancer Institute in Cairo from 1970 to 1981, cancer of the large bowel including rectum and rectosigmoid represents 4.12% of all cancer cases admitted to the National Cancer Institute in Cairo during this period, and it represents 44.39% of all digestive system and peritoneum cancers. Cancer of the colon represents about 9.9% of neoplasms of digestive system and peritoneum, while the bulk of cases (34.49%) are in the rectum and rectosigmoid (Ibrahim and Aref, 1984). In England and Wales in 1963, about 38% of large bowel carcinoma occur in the rectum, while the remainder

occur in the colon (Goligher et al., 1980). Within the past decade it has become clear that the incidence of colonic and rectal cancer is shifting from a predominance in the rectum to a predominance in the colon (Cady et al., 1974; Rhodes et al., 1977). The cause of this change in incidence is not known. About 70% of the incident cases and 80% of deaths from large bowel cancer are due to tumors in the colon, the remainder are in the rectum. The discrepancy between the figures reported in England and United States and that reported by the Egyptian National Cancer Institute in Cairo may be due to the differences in evnironmental factors.

Sex Incidence:

The Third National Cancer Survey (1969-1971) revealed an incidence of 32.90 per 100 000 for males and 29.4 per 100 000 for females of all races (Ackerman and Del Regato's, 1977). The Registrar-General statistics shows that the ratio of fatal cases of cancer of the large bowel in England and Wales in 1963 males to females were 6.5 - 7.9 respectively. If however the deaths from carcinoma of the colon and rectum are considered separately, a very considerable difference is disclosed. The male and female death incidence in England and Wales in 1963 was 7:11 for carcinoma coli and 6:5 for cancer of rectum (Eisenberg et al., 1967). Thus tumors of the colon are slightly more frequent in females than in males wherease the reverse is true for rectal tumors.

The male to female ratio of Egyptian patient admitted to the Egyptian National Cancer Institute in Cairo was 2:1 for cancer colon and 4:1 for cancer rectum and rectosigmoid (Ibrahim and Aref, 1984).

Age Incidence:

Cancer of the large bowel like carcinoma elsewhere is predominantly a disease of older patients, though it may occur at almost any age (Goligher et al., 1980). The general trend of age incidence of cancer rectum appear in a study done by Goligher 1941. Shown in table 1.

Table (1)

Age Group	No. of Cases	% to Total No. of Cases
20-9	25	2.08
30-9	63	5.25
40-9	145	12.1
50-9	351	29.29
60.9	443	36.97
70-9	139	11.60
80-9	5	0.41

It will be noted that more than half of the cases were over the age of 60 with a peak incidence at the age of 60-69. Above that age the number

of cases diminished, but it has to be born in mind that there were fewer people alive in the general population in these higher decades. So that the tendency to develop rectal carcinoma can be safely considered to increase progressively with advncing age. Furthermore it is apparent that the incidence of carcinoma of the rectum in the age group below 20 years is 2% and this coincides with other reports (Goligher et al., 1980; Gardner et al., 1981).

Another report from Sweden about the incidence of colorectal cancer after an analysis of 52 975 patients from the Swedish Cancer Registry expressed in table 2.

Table (2)
Age incidence in Sweden

Age Group	No. of Cases	% to total No. of Cases
35-44	1546	2.91
45-54	4870	9.19
55-64	11514	21.73
65-74	17864	33.72
75+	17181	32.43

These results show that more than half of the cases occur at the age group above 65 years, and the incidence is progressively increasing with advancing age and this coincides with findings of other workers (Adami et al., 1985).

Race Incidence:

The incidence of carcinoma of the colon and rectum is higher in the white race in the United States than most countries of the World. In Japan although carcinoma of the colon is rare, the incidence of carcinoma of the rectum is about the same as in United States (Wynder et al., 1969). The incidence is low in the black population of Sub-Saharan Africa. However, Japanese migrants to the United States aquire, within the same generation, rates that are very much higher than those in Japan (Sugarbaker et al., 1982). Also the children of emigrants from low risk countries of Europe have rates just as high as other U.S. Whites (Haeneszel and Correa, 1971).

HUMAN CARCINOGENESIS