Brief communication

# Tumour characteristics of colorectal carcinoma in Ethiopia and Switzerland

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## Introduction

In the developed countries colorectal carcinoma (CRC) has been documented to increase with age. The age-incidence curve begins to increase substantially after age 50 (1) CRC rarely affect young adults accounting for only 2% to 6% of cases (2). Contrary to what is observed in developed countries, in Ethiopia 61.4% of colorectal carcinomas occur below the age of 50 (3).

CRC in young adults was found to be more frequent in blacks than in whites in the USA. A higher proportion of tumours in the young have mucinous and signet ring histologic types than those in the older age groups (4). Eventhough there appears to be no consensus about the effect of age on prognosis. Factors associated with the worse survival of younger patients include delay in diagnosis, advanced stage and more aggressive tumour histologic types.

The aim of this study is to describe differences in CRC occurrence in Ethiopian and Swiss patients.

## Materials and Methods

This is a retrospective study. Data were retrieved from the archives of the department of pathology, Addis Ababa University, Faculty of Medicine, Addis Ababa, Ethiopia and pathology institute Kantonsspital Luzern, Switzerland. The two pathology laboratories give diagnostic services to referred cases from their respective hospitals as well as from the surrounding health facilities.

All data of colorectal carcinoma (CRC) cases during a two year period (January 1997 upto December 1998), were retrieved. The data was analyzed and compared by age, sex, and histological grading of tumour.

All CRC cases were diagnosed by pathologists using routine hemotoxylin eosin staining methods. The histologic grade comparison was done between two age groups, 39 years or less and 40 years or above. Grading was done according to the WHO grading system (5) Low grade (well to moderately differentiated tumours), high grade (Poorly differentiated and undifferentiated carcinoma), mucinous and signet ring cell carcinoma if these cell types comprise more than 50% of the tumour.

## Results

The total number of biopsies received in pathology institute kantonsspital Luzern for the year 1997 and 1998 were 55,500. From these biopsies 374 were diagnosed as CRC, which accounted for 0.6% of the total biopsies examined during that time. The total biopsies received in pathology department, Addis Ababa University, for the same years were 8,552 from these biopsies 74 were diagnosed as CRC, which accounted for 9.9% of the total biopsies.

The overall male to female ratio of 1.1:1 and 1.3:1 was observed in Luzern and Addis Ababa, respectively.

The mean age for CRC in Luzern was 69 years, while in Addis Ababa it was 46 years. However, there was a female predominance in

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those under 40 years of age. The male to female ratio in Luzern was 1:3.5 (2:7) and in Addis 1:2 (10:19).

In Addis 39.2% (29 cases) of CRC were seen in patients under 40 years of age, whereas in Luzern only 2.4% (9 cases) of CRC were in patients under 40 years (Graph 1 & 2)

In Luzern 93.5% (347) were low grade, 6% (22) high grade, 0.5% (2) were mucinous and there was no case of signet cell carcinoma. In Addis 84% (62) were low grade, 7% (5) were high grade, 5% (4) were mucinous and 4% (3) were signetring cell carcinomas. In those less than 40 years of age the higher grade tumours were seen in 28% (8) of cases from Addis while none were seen from Luzern. While in those over 40 years of age the higher grade tumours accounted for 6.6% (24) of the cases from Luzern and 9% (4) of the cases from Addis.

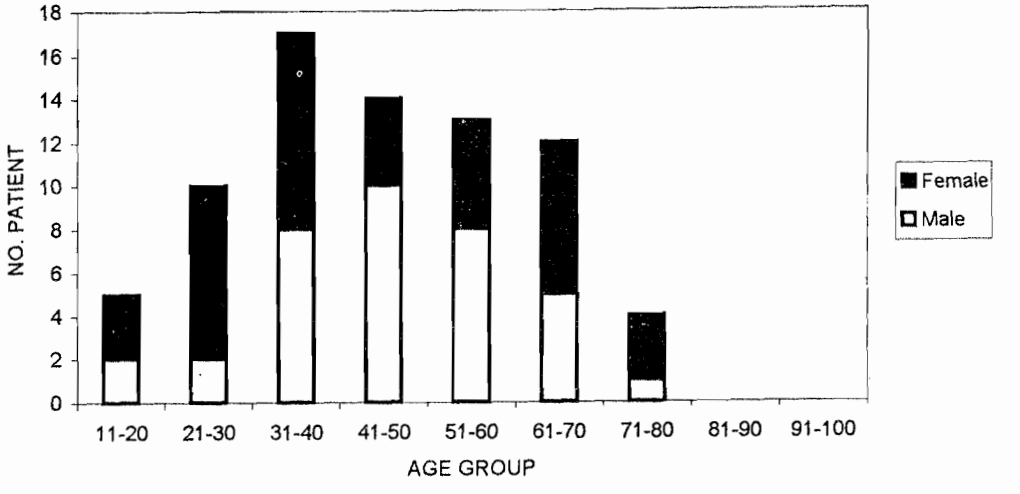


Figure 1: **Colorectal carcinoma 1997 & 1998 Addis Ababa**

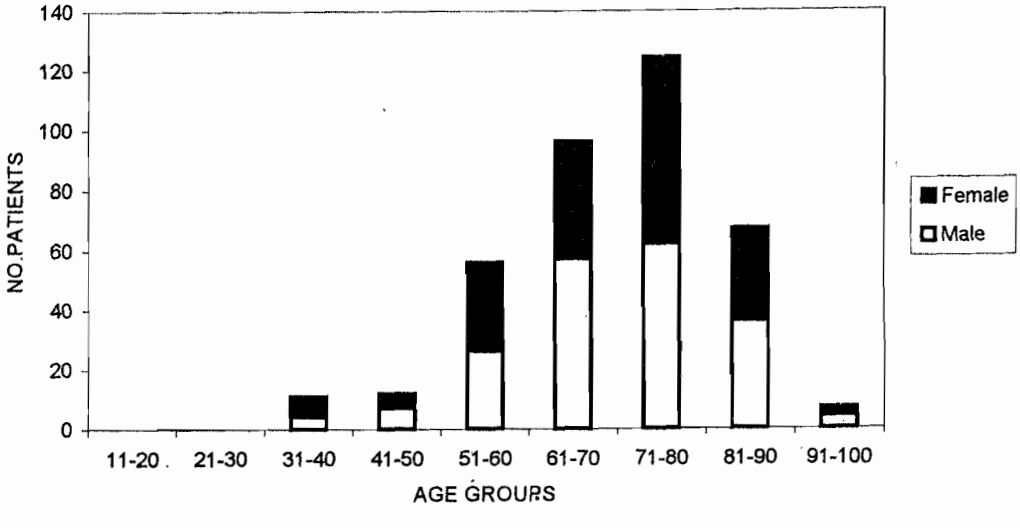


Figure 2: **Colorectal carcinoma 1997 & 1998 Luzern**

**Discussion**

CRC is said to have different incidence and presentation in the developed countries as compared to the developing world. This study compares CRC in Luzern (Switzerland) and Addis Ababa (Ethiopia)

In Luzern CRC accounted for 0.6% of the total biopsy, while it was 0.9% in Addis. This finding is contrary to the saying that CRC is highest in developed countries (2). This could also be due to the selection factor involved in Ethiopia. Not all patient have access to modern health services, particularly the highest level of care.

Thirty-nine percent of CRC in Addis were seen in those 39 ears of age or under while it was seen in only 2% of cases of the same age in Luzern. The finding of 2%in Luzern is supported by previous studies (2,7). And the finding of 39% in Addis is supported by a previous study done in the same place (3), and by another study which showed that the incidence rate for those under 40 years of age was 34% higher in blacks than in whites (8). Eventhough the overall male to female ratio was similar for both countries, the ration in young females was considerably higher than in the young males. This is in agreement with a previous study (9). Whoever, it was contrary to the finding among white population (8). And there are other reports which failed to detect any sex distinction, thus the issue of sex appear to remain unsettled. Concerning with previous studies, CRC in the younger age group showed a higher histologic grade as seen in Addis where it accounted for 28% of the cases (7,8,9). The fact that the majority of higher grade tumours are seen in the very old patients in Luzern and in the young in Addis may reflect that tumours of higher histologic grades maybe seen more in the two extremes of life. But further study using large number of patients is needed to confirm the above findings. Searching for biological reasons for such differences using immunohistochemical methods will be interesting.

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