Years of life lost due to colorectal cancer in Iran

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ABSTRACT

Aim: The aim of this study was to provide quantitative estimations of the burden of death in term of years of life lost (YLL) due to colorectal cancer (CRC) in Iran and a temporal trend analysis.

Background: Colorectal cancer is the third most common cause of cancer-related deaths in the world. YLL is a tool for quantifying the burden of disease according to mortality rates. The aim of this study was to provide quantitative estimations of the burden of death in term of YLL due to colorectal cancer in Iran and a trend analysis.

Patients and methods: National death Statistic Reported by the Ministry of Health and Medical Education (MOH&ME) from 1995 to 2003, stratified by age group, sex, and cause of death were included in this analysis. YLL for CRC were expressed as the annual rates per 100,000 of the general population, gender and age group.

Results: The general rate of YLL for CRC increased during the years under study from 4.52 to 32.20 per 100,000 of the general population and YLL mortality was higher for older aged males.

Conclusion: Our study confirms a temporal trend of increasing YLL due to CRC. Currently there is a low rate of CRC screening in Iran. We recommend that in Iran screening be started, at least in families with a history of CRC, in order to reduce the mortality and burden of CRC in the future.

Keywords: Years of life lost**,** colorectal cancer, Iran.

(Gastroenterology and Hepatology From Bed to Bench 2010;3(4):187-189).

INTRODUCTION

Cancer is the third most common cause of death in Iran (1). The gastrointestinal (GI) cancers are the most frequent cancer among Iranian males and second to breast cancer among females (2). Colorectal cancer (CRC) constitutes a public health burden in most industrialized countries (3) and is the third most common cause of cancer-related deaths in the world (4). There are nearly one million new cases of colorectal cancer diagnosed world-wide each year and half a million deaths. Recent reports show that, in the US, it was the most frequent form of cancer among persons aged 75 years and older (5).

Although the incidence of CRC in Iranian population is currently low, the incidence has steadily increased in Iran during recent years (6). Worryingly, Iranian data also suggests that CRC is affecting a younger population, compared to Western countries. It therefore seems likely that colorectal cancer will become an increasingly important health concern in the next decade. (7-9).

Disease specific mortality population data is important, together with other epidemiologic indicators such as incidence and survival, to assess the importance of a condition and to estimate the potential effects of screening program, early diagnosis, in an *'at risk'* population (10).

In order to facilitate the quantification of mortality from a disease, a new health status - the

years of life lost' (YLL), was developed (10-12). YLL is the number of patient years in a population which would be saved in the absence of the disease. Because mortality does not directly reflect the issue of premature death, YLL provides a more accurate depiction of premature death by weighting deaths occurring at younger ages more heavily than those occurring in older populations, and therefore functions as an additional tool to mortality rates for quantifying the burden of a disease.

The aim of this study was to provide quantitative estimations of the burden of death in term of YLL due to CRC in Iran.

PATIENTS and METHODS

National death statistics reported by the Ministry of Health and Medical Education (MOH&ME) from 1995 to 2003 were reviewed and results stratified according to age group, sex, and cause of death (coded according to the 9th revision of the International Classification of Diseases [ICD-9]). Included in this analysis, CRC mortality [ICD-9; 153-154], expressed as the mortality rate for each 100,000 people, was recorded.

The populations of Iran in 1995-2003 were estimated by age group and sex using the census from 1996 conducted by Statistics Centre of Iran and its estimation according to population growth rate for years before and after national census.

RESULTS

Mortality data consisting of all deaths due to CRC from 1995 to 2003, (up to 6804 records) were considered in this study.

The burden of CRC increased constantly from 1995 to 2003 (Table 1 and figure 1). The YLL reached from 4.25/100,000 in 1995 to 32.2/100,000 in 2003. YLL due to CRC increased with age (Table 1). Moreover, YLL was higher for male compared to female subjects (Figure 2).
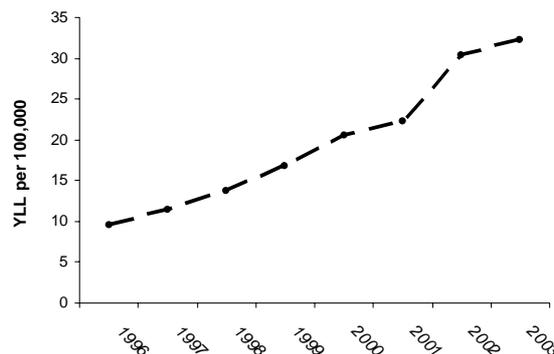

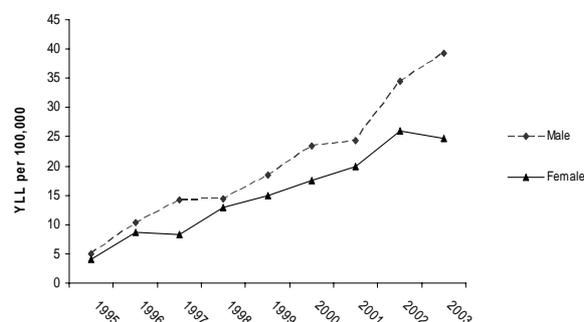**Figure 1.** Years of life lost due to CRC through the years.

Figure 2. Years of life lost due to CRC adjusted for sex groups.

DISCUSSION

The instrument YLL has been widely used for calculating the burden of diseases due to premature death and in health planning (10-12). In this study burden of CRC in the term of YLL was applied to assess the impact of CRC on the Iranian population.

Over the last three decades the Iranian population has experienced a remarkable acceleration of CRC disease burden. Our study indicates that although the YLL due to CRC seems to be low compared to Western countries, the YLL during recent years has increased and is predicted to increase further in the future (13-15).

In Iran, compared to Western countries, CRC patients are more frequently diagnosed at a younger age (6), clearly associated with greater number of YLL (16, 18).

In our study, men had greater YLL than women. This finding is in agreement with other studies that suggested greater burden of CRC for men (17).

The incidence of CRC is strongly influenced by genetics and environmental factors. A family history of CRC in first-degree relatives is an internationally recognized risk factor for CRC and local studies have confirmed Iranian patients with CRC also have a positive family history (7, 18).

Our findings suggested a substantial and increasing health burden, due to CRC, in the Iranian population. Screening programs can play an important role in order to reduce the burden of CRC (19, 20). This approach should be recommended for health authorities in order to reduce the burden of this cancer (10).

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