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First data from a population based cancer registry in Ethiopia

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ABSTRACT

Background: The Addis Ababa City Cancer Registry, established in September 2011, is the only population-based cancer registry in Ethiopia, covering a catchment population of just over three million habitants. Herein, we report incidence data based on the first two years of registration, 2012–2013.

Methods: Newly-diagnosed cancer cases in the capital city were actively collected from 22 hospitals, clinics, and diagnostic facilities.

Results: During 2012–2013, a total of 4139 newly diagnosed cases were recorded, with the majority (67%) occurring in females. Cancers of the breast (31.5%) and cervix (14.1%) were the two most common cancers among females, while colorectal cancers (10.6%) and non-Hodgkin lymphomas (10.2%) were the most common cancers among males. The average annual age-standardized rate for all sites 2012–13 were 136.2 (per 100,000) and 70.7 in females and males, respectively. Female age-standardized rates were 40.6 for breast cancer and 21.5 for cervix, while equivalent rates in males were 7.6 per 100,000 for colorectal cancer and 6.8 per 100,000 for non-Hodgkin lymphoma.

Conclusion: In general, these incidence patterns were similar to those reported in neighboring countries, which suggests that the majority of cancer cases occurring in Addis Ababa are captured within this starting phase of the registry. However, our finding of colorectal cancer as the most commonly-diagnosed cancer in males is novel and requires further investigation.

1. Introduction

1.1. The burden of cancer

Cancer is one of the most important causes of morbidity and mortality, suffering, social and economic problems in the transitioning, as well as in the developed world [1]. There are substantial disparities in diagnosis, care and outcome of cancer in different regions of the world, with females especially impacted by the burden of the disease [2]. This has led to UN-led high-level commitments to tackle cancer among other major non-communicable diseases [3] and now, several African governments have developed and implemented operational national cancer control plans [4,5]. Population-based cancer registries are well-established institutions required to monitor and evaluate specific interventions to reduce the cancer burden; the first cancer registries were established over 70 years ago, and today there are more than 700 cancer

Abbreviations: ICD-O, International Classification of Disease for Oncology; NHL, Non-Hodgkin's lymphoma

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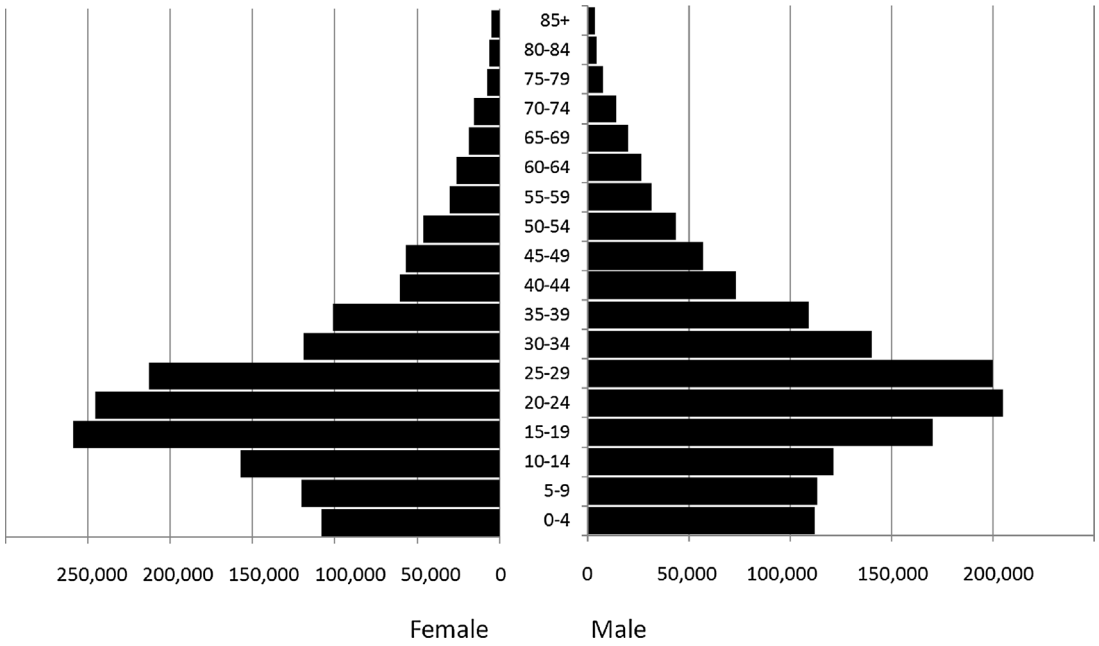

Fig. 1. Addis Ababa City population pyramid estimated for 2012.

registries worldwide [6].

1.2. Population-based cancer registration

In 2014, there were 26 population-based cancer registries from Africa including Addis Ababa that contributed data to the African Cancer Registry Network and to the International Agency for Research in Cancer for specific studies [7,8]. The patterns of cancer incidence vary between the countries in the region, partly reflecting differences in underlying cancer risk. Studies from North Africa, as an example, have suggested that the decline of cancer incidence is due to changes in environmental and lifestyle factors [9], with the key determinants including smoking, alcohol consumption, changes in reproductive patterns, and increasingly westernized lifestyles including more physical inactivity and the eating of foods low in fibre and high in fat [10–12]. Few studies have examined the influence of socioeconomic transitions in Africa on risk factors and cancer burden as well as effects of cancer control programs using population-based incidence data [13,14].

1.3. Addis Ababa cancer registry

The Addis Ababa City Cancer Registry has been collecting incidence data since September 2011. Addis Ababa is by far the largest city in Ethiopia, a country where the majority of the population live in rural areas and are dependent on farming. There are various ethnic groups; the majority are Oromo (34.0%), Amhara (29.8%), Tigray (7.7%) and others. The Amhara group is the most common in Addis Ababa [15]. In Addis Ababa, there is high economic growth, accounting for a Gross Domestic Product of 61.54 billion USD in 2015, with continuous modernization, construction, industrialization and change towards a westernized environment and lifestyle. A number of initiatives by governmental and non-governmental organizations are underway to improve cancer control through implementing the national cancer control plan [16,17]. This study of cancer incidence during the societal transition in Addis Ababa aims to inform cancer control and serves as a baseline for assessing the effectiveness of future interventions.

2. Materials and methods

2.1. Setting of the population based cancer registry

The Addis Ababa City Cancer Registry is located in the Radiotherapy unit of the Addis Ababa University. The registry was established in September 2011 in collaboration with the Medical Faculty of Martin-Luther-University, Halle, Germany and Addis Ababa University, then the American Cancer Society and the World Health Organisation also stepped in. The Addis Ababa City Cancer Registry employs active data collection methods organized by the director, supervisor, two data collectors, a clerk and 22 focal persons (cancer registrars) at outpatient clinics, inpatient wards (internal medicine, Radiotherapy, Gynecology, Surgery, Pediatrics) as well as diagnostic laboratories.

The structured cancer registry questionnaire [18] was minimally adapted for the purpose of Addis Ababa City Cancer Registry. Demographic information, diagnostic findings and planned cancer therapies are collected. Due to the heterogeneity of the Ethiopian population, ethnic group was included.

2.2. Classification of cancers

Cancers were classified according to the third version of the International Classification of Disease for Oncology (ICD-O-3) [19].

2.3. Data collection

Data were collected and electronically entered and analyzed using CanReg5 software from the International Agency for Research on Cancer [20] and SPSS Version 24, IBM Corp. Edits were run on the data to check for implausible combinations of cancer sites and entities, and for duplicate cases. In this study, two consecutive years of data were used; the last update was performed in October 2016. The census data for Addis Ababa (comprising a population of 3,049.000 persons in 2011) was used for the calculation of the age-standardized rates [15].

2.4. Ethical approval

The implementation of the cancer registry was approved by the Addis Ababa Medical Faculty Institutional Review Board. Consent of all