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Childhood cancer: Incidence and early deaths in Argentina, 2000–2008

Florencia Moreno [a,*], Dora Loria [b,c], Graciela Abriata [c], Benedetto Terracini [d], ROHA network

[a] Argentinean Oncopediatric Registry, National Cancer Institute, Buenos Aires City, Argentina
[b] Angel Roffo Institute of Oncology, Research Area, Buenos Aires City, Argentina
[c] Surveillance and Epidemiological Analysis, National Cancer Institute, Buenos Aires City, Argentina
[d] University of Turin, Turin, Italy

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Abstract **Introduction:** Knowledge on the epidemiology of childhood cancer in Latin America is limited. The Argentinean Oncopaediatric Registry (ROHA) has been active since 2000. Data for 2000–2008 are described in the present work.
Materials and methods: ROHA is fed from a network of paediatric units and population-based cancer registries. Cases are coded by the International Classification of Childhood Cancer.
Results: A total of 11447 children aged 0–14 diagnosed with cancer were reported. Histologically verified cases and cases identified only through death certificates were respectively 91% and 6%. The annual age of standardised incidence rate of all cancers was 128.5 per million. Proportions of leukaemia's, lymphoma's and Central Nervous System tumours were 37%, 13% and 18%. The distribution of rates of acute lymphatic leukaemia by the year of age showed a peak around age 3. Eighty percent of the patients are treated in public hospital and around 35% migrate for some of the treatment. Deaths within a month of diagnosis were 5% in 2000 and 3% in 2008.
Conclusions: Childhood cancer incidence in Argentina is somewhat lower than in North American and in Western European countries: the deficit is mainly due to tumours of the Central Nervous system and other solid tumours. Childhood cancer incidence did not show any tendency to increase. The possible excess of Hodgkin lymphoma in the Northeast region requires additional studies. Early deaths after diagnosis indicate an unsatisfactory state of the overall organisation of childhood cancer care. Data from ROHA are used for decision making at local and national levels.
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* *Corresponding author:* Address: ROHA, Av. Julio A Roca 781, Piso 11, C1067ABC, CABA, Argentina. Tel.: +54 11 5235 7555; fax: +54 11 5235 7553.
 E-mail address: roha@roha.org.ar (F. Moreno).

1. Introduction

The primary purpose of population-based childhood cancer registries is twofold. On one hand, the identification of differences in incidence within and between populations may provide aetiological clues. In addition, since nowadays most children with cancer can be cured, survival rates and other population-based clinical indicators provide information on the quality of cancer care given to the paediatric population served by registry. Childhood cancers are rare (in the Western world, approximately one child in 500 develops a cancer by age 15), so that reliable figures can be obtained only from relatively large paediatric population. Out of 13 cancer registries serving Latin American areas included in 'Cancer Incidence in Five Countries, Volume IX',[1] and in 'International Incidence of childhood Cancer, Volume II'[2] only those of Costa Rica, Peru and Sao Paulo (Brazil) estimate incidence rates from paediatric populations larger than one million.

A nationwide childhood cancer registry in Argentina (Registro Oncopediatrico Hospitalario Argentino, ROHA) was implemented in the late nineties through a network of hospitals. ROHA has adopted standard methods on cancer registration,[3] which are applicable for registration in public and private hospitals, thus allowing for analyses and use for decision making both at the local and national levels.

Incidence of childhood cancer in Argentina between 2000 and 2008 is reported in the present study. Attention is given to indicators of quality of registration and their distribution over the country. Data on deaths occurring early after diagnosis are presented, which provide some indication on the quality of childhood cancer care in Argentina.

ROHA was a part of Kaleidos Foundation (www. fundacionkaleidos.org). Since 2011 it is part of the newly created Argentinean National Cancer Institute. ROHA information can be found at www.roha.org.ar.

2. Methods

Argentina comprises 24 political units, 23 provinces and the city of Buenos Aires, capital of the country, which is a political unit separated from the province of Buenos Aires. The political units are commonly grouped in five major geographic areas ('regions') as shown in the map (Fig. 1). In 2000, the country population aged 0–14 was 10.2 millions with 60% living in the Central Region (CeR), 14% in the North-western Region (NW), 12% in the North-eastern Region (NE), 8% in the Cuyo Region (CuR) and 6% in the Patagonia Region (PR).

In 2007 the overall infant mortality rate was 13.3 per 1000 born alive with a range between 22.9 per 1000 in Formosa (province included in NE region) and 8.4 per 1000 born alive in Buenos Aires City.

ROHA is fed through different sources. Most cases are forwarded from a network of 49 oncological paediatric units (OPU), mainly located in the central region. During 2000–2008, 86% of cases were reported to ROHA from the OPU network. In addition, ROHA obtains information from 12 traditional (non-exclusively paediatric) population-based cancer registries serving 30% of the population of Argentinean corresponding regions: CeR 14%, NW 74%, NE 29% CuR 55% PR 90%. A 3% of data included in ROHA comes from population-based cancer registries as the only source.

At regular intervals, cases are reported to ROHA, where duplicates and prevalent cases are identified and diagnoses are coded. Data reported for each patient include: patient's name and surname, number of identification cards, date of birth, diagnosis, sex, province of residence, address, histopathology, tumour site and basis of diagnosis. Cases are coded according the Third edition of the International Classification of Diseases for Oncology (ICD-O3)[4] and the International Classification of Childhood Cancer third edition (ICCC-3).[5] Benign tumours
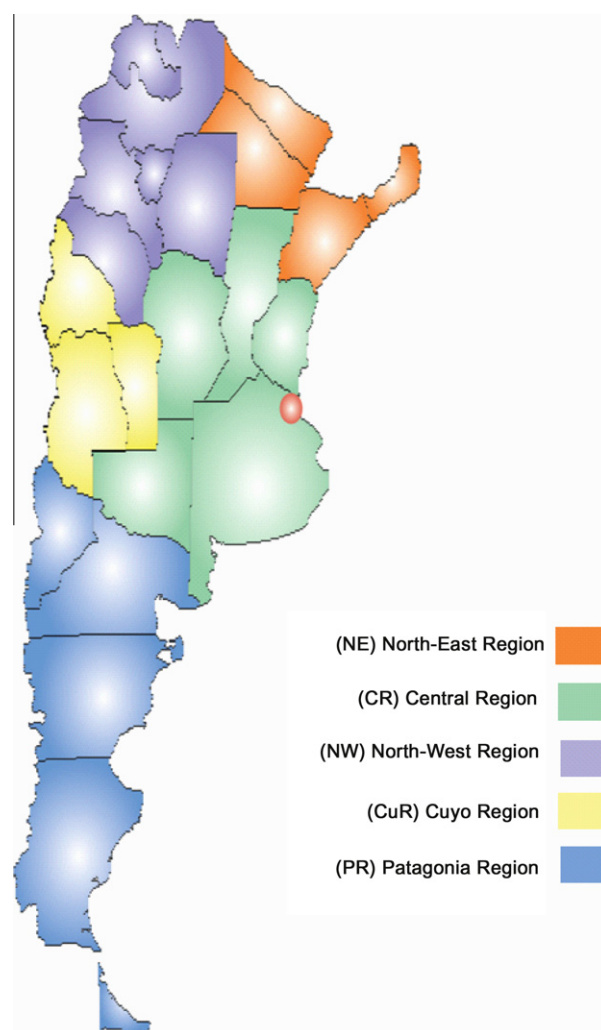

(NE) North-East Region
(CR) Central Region
(NW) North-West Region
(CuR) Cuyo Region
(PR) Patagonia Region

Fig. 1. Argentina by regions.