

# Achievements and challenges for childhood cancer in China

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Cancer is the second commonest cause of death for children at the age of 0-14 years, following accident as unintentional injury (1). Childhood cancer prevention and control strategy in China are mainly relied on the nationwide data on incidence and mortality. Thus, data reflected the situation of childhood cancers are urgently need.

Based on the data from 145 Chinese Cancer Registries which covering nearly 12% of the whole Chinese population (158 million population), the authors from Chinese National Central Cancer Registry (NCCR) reported the nationwide incidence, mortality and survival of childhood cancers for the first time (2). The estimated age-standardized incidence and mortality were 87.1 and 36.3 per million respectively. The overall 5-year relative survival was 71.9%. The most frequent five cancers were leukemia, brain and central nervous system (CNS) cancer, lymphoma, bone cancer and kidney cancer.

The report will have an important implication in Chinese childhood cancer control. It suggested childhood cancer incidence in China significantly increased by 2.8% annually from the year of 2000 to 2009, which was in accordance with the data from other countries in some period of time, such as USA, Great Britain and Japan (3-5). The reason for such changes was difficult to determine. However, possible variables such as genetic, immunological, or environmental factors may be considered in connection with the development of childhood cancers in China. As expected, childhood cancer incidence was higher in urban area than that in rural area and higher in boys than that in girls. This phenomenon was similar with adult cancers in China. Differ from cancer incidence, no significant variation in average annual percent change of childhood cancer mortality rate. In the contrary, due to relative perfect

cancer control system, childhood cancer mortality was decreased annually in many developed countries (6). Thus childhood cancer prevention and control system should be developed immediately for Chinese government. Similar with cancer incidence, mortality rate was higher in boys. But for children aged 1-10 years, the mortality rate was higher in rural area than that in urban area. Lower cancer incidence and higher cancer mortality rates indicated that more child healthcare resource should be scheduled in rural area where health resource for children is inadequate at present in China.

Based on the information provided in this report, childhood cancer and its treatment have remained a challenge for Chinese government and researchers, although China has achieved a certain degree of success in this aspect. Due to the highly specific diagnostic procedures and the continuous improvement of multimodal treatment strategies, developed countries successfully elevated probability of cure in the past decades. Regarding the years 1995-2002, the overall 5-year childhood cancers survival rate for Europe was 81%, similar with USA (1). In China, the rate was just 71.9%, nearly lagging behind ten percent. The differences in the childhood cancer survival rate are to a large extent related to differences in healthcare structures. Thus, for childhood cancers, no time waits Chinese government to take new policies and strategies to improve the level of diagnosis and treatment. For example, early detection programs for specific high-risk children may be a good way.

The study initiatively provided an important benchmark for pediatric oncology prevention and treatment in China. As we know, the incidence, mortality, and survival rates for childhood cancers are important indicators of the quality

of the child healthcare system. Moreover, temporal trends of cancer incidence, mortality and survival rates are critical index for evaluating the effectiveness of childhood cancer prevention and clinical treatment measures. In addition, exploring the etiology and risk factors of childhood cancers is also relied on these data.

Recent years, the NCCR achieves great success. Coverage and quality of the registry are both getting on a new step. However, with respect to Childhood Cancer Registry, no more experience can be talked about. Even the epidemiological data of this report is not based on Childhood Cancer Registry. The data present in the report doesn't refer to the International Classification of Childhood Cancer, which affect the international comparisons. The incidence and mortality rates provided in the report were much lower than many other countries. Except the reasons discussed in the report (limited coverage, missing data from floating population and ethnicity), the main crux may be that no Childhood Cancer Registry system in China. This problem has been existed for several years and now we must face it. German Childhood Cancer Registry, one of the largest pediatric cancer registries worldwide, is a better example for China to establishing such system (7). Developing standards of childhood cancer registration and standardized definitions of quality criteria are essential for accurate childhood cancer data and international comparisons. In any case, Chinese government should find a better way to meet the challenges and more accurate data of childhood cancers will be obtained in the near future.

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### Footnote

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*Conflicts of Interest:* The authors have no conflicts of interest to declare.

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