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Evaluation of the Frequency of Leukemia in Hormozgan Province from 2007-2013.

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ABSTRACT

Blood malignancies are among the primary and prevalent causes of blood diseases and have afflicted different communities of different geographical and national varieties. The most important types of blood malignancy are leukemia or blood cancer. It is the most fatal among children, the aim of this study was to evaluation of the frequency of leukemia in Hormozgan Province. The target population consists of all patients diagnosed with leukemia who were hospitalized in Bandar Abbas child hospital within the year span of 2008 to 2014. This hospital is the only specialized center related to child diseases in Hormozgan province and has always had blood and oncology specialists since 2008 so far. It can be concluded that all patients afflicted with leukemia in Hormozgan have paid at least one visit to this center with a hope of treatment. A total of 129 patient visitors to this hospital were diagnosed with leukemia. 86 of them (66.6%) were male and 33 (33.4%) were female. The average age of the patients was 16.5±5.31 years. From among them, 107 individuals (82.9%) were diagnosed with ALL while 22 (17.1%) were diagnosed with AML. According to the results we can conclude that the distribution of different types of acute leukemia among children in Hormozgan is similar to those in other parts of the world. That is to say that the number of people afflicted with ALL is higher than those afflicted with AML.

Keywords: leukemia, blood maglignancies, Hormozgan

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INTRODUCTION

Blood malignancies are among the primary and prevalent causes of blood diseases and have afflicted different communities of different geographical and national varieties. Blood diseases are common among different age groups, social classes and across genders. The most important types of blood malignancy is leukemia or blood cancer. It is the most fatal among children [1, 2]. Leukemia is divided into two categories: ALL and AML. In Acute Lymphoblastic Leukemia (ALL) and Acute Myeloid Leukemia (AML), lymphocyte cells and myelocyte cells are proliferated [3]. Blood cells which are yet immature start proliferation before being fully turned into mature blood cells. These proliferating cells inhibit the production of red globules, granulocytes and plackets. This abnormal proliferation would lead to the appearance of the main clinical symptoms of this disease including anemia and bleeding. Among other symptoms of leukemia are fever, fatigue, diverse infections, inflammation, paleness, nose bleeding, red spots under skin, etc. [4]. As for the underlying cause(s), similar to other types of cancer, there is no precise recognition. However, in the case of Leukemia, cytogenetic issues and some viruses have attracted the attention of researchers' [2, 5]. Among children, a myriad of factors can be involved such as genetic causes [6]. There are different kinds of leukemia which follow different geographical proliferation patterns. In Europe, 80% of leukemia among children of 0 to 14 years of age is of ALL type. The occurrence rate of ALL is up to 40 per million kids in the industrial countries of Western Europe, and is as much as 30 to 35 per million kids in Eastern European countries. In developed countries, over 80% of all cases are of the B-cell type. AML is the second most prevalent leukemia among children, which consists of about 20% of acute leukemia among European children [7]. Although ALL is more prevalent among children, the probability of full recovery has also been increased. That is, it has changed from less than 10% in the years preceding to 1970 to about 100% in recent years. A myriad of studies have been conducted on awareness-raising of patients and their responsiveness to treatment. Research findings have indicated that the responsiveness of boys to treatment is in fact less than that of girls. Moreover, children who are below 1 year of age or older than 10 years, or those whose leukocyte count is above 50,000/ μL have a lower pre-awareness of the disease. Among French American British (FAB) sub-groups, the lowest pre-awareness belonged to L3, while the highest was that of L1. Among immunophenotype sub-groups, the good prognosis in pre-awareness was found to belong to early pre B cell, pre-B cell, T cell and mature B-cell respectively [8].

Our goal in this study revealed that this disease is frequent among Children of Hormozgan province. These findings can be used optimally. The child hospital of Bandar Abbas possesses the best cancer diagnosis and treatment facilities for children. There exists child blood cancer specialists who monitor the diagnosis and treatment process and pay weekly or monthly visits to patients. According to the comments made by the esteemed specialists there seems to be no missing case with this regard, and all those citizens who are afflicted with this disease do visit this hospital.

METHODOLOGY

This research is of a descriptive and retrospective type. The target population consists of all patients diagnosed with leukemia who were hospitalized in Bandar Abbas child hospital within the year span of 2008 to 2014. This hospital is the only specialized center related to child diseases in Hormozgan province and has always had blood and oncology specialists since 2008 so far. It can be concluded that all patients afflicted with leukemia in Hormozgan have paid at least one visit to this center with a hope of treatment. Patients' data were gathered through the perusal of patients' files in this center, were re-organized within checklists and were then analyzed via SPSS version 16. Descriptive statistical tests were used to analyze these data.

RESULTS

Within this year span (2008-2014), a total of 129 patient visitors to this hospital were diagnosed with leukemia. 86 of them (66.6%) were male and 33 (33.4%) were female. The average age of the patients was 16.5±5.31 years. From among them, 107 individuals (82.9%) were diagnosed with ALL while 22 (17.1%) were diagnosed with AML. During the data collection process, it was attempted to determine the other data such as the type of leukemia sub-group. However, due to the number of incomplete files, they were not very reliable.

DISCUSSION

According to the results we can conclude that the distribution of different types of acute leukemia among children in Hormozgan is similar to those in other parts of the world [9]. That is to say that the number of people afflicted with ALL is higher than those afflicted with AML. In a study conducted by Zolali et al., the total number of population diagnosed with acute leukemia (in Fars, Hormozgan, Booshehr, Kohgiluyeh and Boyer-Ahmad provinces) who visited a medical center within a year's time was 80 people [10]. However, this frequency in our research was 129 within 6 years. In Alavi et al.'s study this number was 139 cases in 3 years' time [8]. In another investigation conducted by Hejazi [4] in 6 years' time, this number was 139 cases. The age distribution in our study showed 86 patients to be male (66.6%) and 33 patients to be female (33.4%). Both in Alavi et al.'s [8] and Hejazi et al.'s the number of males afflicted with leukemia was higher than females [4] . In Akramipour's study, the number of patients diagnosed with AML in one of the hospitals of Ahwaz within 6 years was reported to be 40 [11]. However, what is of a great significance here is to conduct more in-depth research and investigate the prevalence of this disease more comprehensively. The results of such evaluation, planning and healthcare management can be effectively benefited from. Therefore, it is suggested to fully evaluate the prevalence of this disease in Hormozgan through conducting a more comprehensive study.

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