Epidemiologic study of Pediatric Malignancies and its Relation to environmental Stressors in Specialized Referral children cancer hospital

Thesis

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SUMMARY

Owing to the fact that incidence of pediatric malignancy has rapidly increased in the past 4 decades, there is an increasing need for optimal delivery of health care to this growing, vulnerable population.

The study is conducted at Children's cancer hospital, the only referral specialized pediatric cancer hospital; specialized in pediatric malignancy not only in Egypt but in the middle east.

The study is carried on in the year 2009.

The data was collected until April 2011. In the year, 2009, 920 patients were diagnosed, followed up and managed at the hospital, 768 of them survived, and 152 died. Patients were subjected to full history taking, clinical examination and laboratory investigations.

As regards the psychological domain, psychological stressors score was performed on one of the patients' parents to measure the effect of these stressors on the family.

Anthropometric measurements were taken at 3 settings; first one on first admission to the hospital, second after 6 months of first measurement and a third one after 1 year of the first measurement.

What was surprising in the results of growth assessment in the current study that there was wt gain

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List of Abbreviations

ALL	Acute lymphoblastic leukemia
AML	Acute myeloid leukemia
CML	Chronic myeloginous leukemia
CRT	Cranial Radiotherapy
FAB	French- American – British classification
Fig.	Figure
GHD	Growth hormone deficiency
HL	Hodgin's lymphoma
ht	height
IARC	International Association of cancer registries
ICCC-3	International classification of childhood cancer, 3rd edition.
ICDO	International classification of disease for oncology
JMML	Juvenile myeloid leukemia
MRI	Magnetic resonance imaging
NCI.....	National cancer institute
NHL	Non-Hodgkin's lymphoma
Pt.	patient
RT.....	Radiotherapy
SD.....	Standard deviation
SEER	Surveillance, Epidemiology and End Results Program
SIOP.....	International society of pediatric oncology
STAP.....	In literature
WHO	World health organization
WHO	World health organization
Wt.....	Weight
yr	year

INTRODUCTION

With more than 10 million new cases every year, cancer has become one of the most devastating diseases worldwide. In other words, cancer is an important and growing health problem in children and adolescents. The causes and types of cancer vary in different geographical regions but in most countries, there is hardly a family without a cancer victim. The disease burden is immense, not only for affected individuals but also for their relatives and friends. At the community level, cancer carries considerable challenges for the health care system in poor as well as rich countries *(Kleihues and Stewart, 2003; Bober et al., 2009).*

Prevalence of pediatric malignant tumors has increased in the past two decades, yet the precise cause of pediatric malignancy remains unknown. Specific genetic events associated with tumor development are being identified.

Pediatric malignancies tend to have their origin in intrinsic genetic abnormalities, and are usually disseminated by the time of diagnosis.

It is likely that the development of most cancers involves both environmental and genetic factors. However, the cancers of childhood tend to arise in tissues

that are not directly exposed to the environment (hematopoietic, nervous, supportive connective tissue), indicating that host factors may be more important. The prognosis of most pediatric malignancies is related most strongly to tumor type, extent of disease at diagnosis, and the effectiveness of the treatment *(Skuse and Ludlow, 1995).*

The last three decades have seen tremendous improvements in survival of children diagnosed with cancer, with the 5-year survival rate approaching 80% (excluding tumors of the CNS). This improvement in survival has resulted in a growing population of pediatric malignancy survivors.

Approximately 3 of every 4 children diagnosed with cancer can be expected to reach adulthood *(The American Society for Nutritional Sciences 2003).*

Several factors have contributed to the improved prognosis for survival and quality of life of children with cancer. The development of an effective treatment regimen is the single most important prognostic factor. This also permits analysis of the differences between successfully treated groups and those not cured by standard treatment *(Mott, 1995).*

Owing to the fact that the study is concerned with malignancy in the childhood period which is the period of

growth and development, knowledge of normal growth and development of children is essential for preventing and detecting disease by recognizing deviation from normal pattern *(Cameron, 1996).*

Growth is the natural increase in the size of individual i.e. weight, height and head circumference. Growth is reflected by gain in weight and enlargement in linear dimensions, and it is measured by anthropometric measurements according to the protocol of international biological program regarding landmarks, instruments and technique of Tanner *(Tanner et al., 1969).*

Anthropometry is the technique of quantitatively expressing the form of the body, by measuring and taking observations for scientific purposes *(Snyder, 2001).*

The most common and useful anthropometric measurements used in growth assessment especially in young aged children are weight, height, triceps skin fold and subscapular skinfold. These measurements are the simplest, quickest and easier body measurement and they give maximal information concerning the growth rate, health and nutritional status *(Jellief, 1998).*

Many factors can affect growth velocity during all phases of childhood growth, such as race, genetic, familial, nutritional, hormonal, recurrent infections, severe chronic illnesses, socioeconomic factors, emotional factors and certain drugs *(Price et al., 2002).*