Use of herbs or vitamin/mineral/nutrient supplements by pediatric oncology patients

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ABSTRACT

Use of complementary and alternative medicine (CAM) is widespread and increasing. We sought to study the frequency and factors affecting of its use in children with cancer. We designed a questionnaire that was administered to the parents of children between September 2013 and March 2014. A total of 74 patients were enrolled into the study. Fifty patients (67.5%) had used one or more than one type of herbs or vitamin/mineral/nutrient. The most commonly used CAM treatment was grape molasses (36.6%). The main source of information to families was the internet. No correlation found between the use of CAM and parents' education status, the level of income, socioeconomic status, chemotherapy treatment. Patients with cancer highly tended to use CAM treatment without informing healthcare professionals. The integration of complementary methods to the conventional treatments is interesting and seem to respond to the needs of patients allowing a more comprehensive approach to care.

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1. Introduction

Complementary and Alternative Medicine (CAM) is defined by the National Center for Complementary and Alternative Medicine (NCCAM) as "a group of diverse medical health care systems, practices, and products that are not presently considered to be a part of conventional medicine." [1] The term complementary medicine (integrative medicine) defines the use of alternative therapies in conjunction with conventional treatments [2—4]. In recent years, the concept of CAM is constantly changing from alternative and complementary to integrative medicine. The prevalence of CAM use is significant worldwide in both developed and developing countries and may rise to 40% of the population in primary care and above in patients with chronic illness [5—7]. The US National Institute of Health Center for Complementary and Alternative Medicine (NCCAM) classifies CAM treatments in 5 categories: (i) alternative medical systems (such as homeopathy or traditional Chinese medicine); ii) mind-body medicine (activities such as meditation, prayer, art, dance, and music); iii) biologically based therapies (such as plants, diet supplements); (iv) manipulative and body-based therapies (such as chiropractic message);

and (v) energy therapies (such as Qi gong, Reiki, healing touch) [8].

Herbal medicines and remedies were the most commonly used CAM therapies, together with other homeopathic interventions. Herbs are known as useful ingredients, and they are used in medicine. However, use of herbs is limited due to the consumption pattern and the aim of the individuals. Societies have different beliefs and applications concerning the herbs consumption according to their sociocultural status [9].

CAMs use in children with cancer has increased worldwide in the last years [10,11]. The reported frequency of its use varies from 30% to 84% in different surveys, identifying differences in the type of CAM employed and the factors associated with their use between the different populations studied [12,13]. There are plenty of herbs or vitamin/mineral/nutrient around the world used for the treatment of cancer. There has been relatively few study performed in pediatric patients with cancer. However, those studies that have been carried out over the past decade indicate that a variety of CAM therapies among children with cancer are used. The prevalence of CAM is reported to be between 24% and 90% in these patients. In various studies, it was established that CAM treatments were used as complementary to conventional treatment [14,15]. The prevalence of using CAM treatments has been around 50% in pediatric patients and 22% to 53% in adult patients in Turkey. The most frequently used method is treatment with plants, most commonly the stinging nettle [16—19]. Moreover, vitamin/mineral supplements are also commonly used in Turkey. There are limited studies

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[18,20,21] in the consumption pattern and effectiveness of herbs and vitamin/mineral supplements in Turkey. Essiac (comprising four herbs: burdock, Turkey rhubarb, sorrel, and slippery elm), Chinese herbal teas and Iscador (a derivative of mistletoe) are popular herbal remedies of traditional and folk healing in many areas of the world [2–4]. However, these herbal remedies may be associated with significant side effects such as renal failure, veno-occlusive disease, hypertension, convulsion, and liver failure [3,4,15,22]. In addition; the use of alternative therapies is not necessarily innocuous and can be harmful through a variety of mechanisms, such as reducing the chemotherapy's effectiveness by interactions from herbal supplements or antioxidants [23] contamination by Salmonella [24] or toxic substances (mercury and arsenic) [25] or the self-discontinuation of formal, standard treatment since some therapies have been advertised as cancer cures [2].

We aimed to explore the use of herbs or vitamin/mineral/nutrient consumption by the patients in children undergoing chemotherapy and who have completed courses of chemotherapy. In particular, we wished to investigate the frequency of its use, factors affecting the frequency of its use, the individual CAM treatments used, the perception of families regarding the efficacy and safety of CAM and their sources of information.

2. Materials and methods

Parents of 74 children with cancer who underwent therapy in the pediatric oncology clinic or returning for follow-up evaluation at the outpatient clinic of Pediatric Oncology Department of … Medical Faculty, between September 2013 and March 2014 were eligible for the study. To be eligible, children had to be between 0 and 18 years of age, needed to be in at least three months post-diagnosis and had parents who agreed verbally to participate in the study. Children and the families of a child undergoing chemotherapy (Group 1) or who had completed chemotherapy (Group 2) was eligible for inclusion. Children on palliative care or those who had second cancers or died were excluded out of respect for the families. A questionnaire was designed based on a literature review of CAM [26–29]. Patients' families were first informed about CAM, and then about the study. The questionnaire developed for the study was completed by either one or both of the parents. The parents of the patients who participated gave verbal, informed consent. The local Institutional Research and Ethics Committee approved the study. The questionnaire was divided into the following parts: "Part 1 of the questionnaire consisted of questions on the child's demographics, the family's socioeconomic status (eg, age, sex, occupation of the parents, monthly income of the family, educational level of the parents, and place of residence) and details regarding the child's oncological condition and treatment (diagnosis, date of the diagnosis, cancer history in family members, treatments administered to the patient, etc). Part 2 of the questionnaire explored the use of herbs or vitamin/mineral/nutrient for the treatment; Who recommended the use of herbs or vitamin/mineral/nutrient (family member, friend, mass media, or physician); Herb species used, pattern of use, duration of use, and perceived benefits if any; sources of information accessed by the family; and the family's knowledge of potential benefits of and risks from CAM. Educational status of the family was classified into four groups: (1) primary school; (2) secondary school; (3) high school graduate; and (4) university graduate. Families with monthly income lower than 250 € (Euro), were classified as low income, those between 250 and 850 € as middle income, and those over 850 € as high income according to poverty limits of Turkish Institution of Statistic. Demography of the families was classified as province, county, and rural areas.

We had thought it possible that families whose child had completed chemotherapy might be more willing to admit using CAM than those parents whose children were still undergoing chemotherapy. For this reason, patients were divided into two groups. Group1; Children and the families of a child undergoing chemotherapy. Group 2; who had completed chemotherapy.

We trained a doctor and a nurse who would administer the questionnaire on how to do so. After verbal consent was obtained from the child's parents, the questionnaire was administered face-to-face. It took 15–30 min to apply. The statistical analyzes were performed with SPPS for Windows. Descriptive statistics was obtained, and the differences between categorical variables were conducted with the chi-square test. AP-value <0.05 was considered significant.

3. Results

Seventy-eight patients were eligible for the study. Four patients were excluded because of their parents refused the consent. A total of 74 children (46 males; 62.2%) were enrolled into the study. Questionnaires were answered, 60 (81%) by only the mothers, 12 (% 16.2) by only fathers, and 2 (2.7%) by both parents together. The median age of the patients was 8.6 years (range 3–18). The median age of the patient's parents was 36 years (range 24–48). The highest educational attainment of the patient's parents was a primary school in 47.3%, high school graduate in 20.3%, university graduate in 9.4%. Half of the families lived in a rural location, and 82.4% of the mothers were a housewife or not work. Acute lymphoblastic leukemia (ALL) was the commonest oncological diagnosis (83.8% of patients), followed by acute myeloblastic leukemia (AML) (8.1% of patients). The characteristics of the parents

Table 1
Characteristics of respondents and pediatric patients.

Characteristics	n (%)
Respondent characteristics	
Parent's age, y (mean ± SD)	36 ± 5.5 (24–48)
Parent's education status	
Primary school	35 (47.3)
Secondary school	17 (23)
High school	15 (20.3)
University	7 (9.4)
Place of residence	
Rural	37 (50)
City	37 (50)
Marital status of Parent's	
Married	71 (91.8)
Divorced or widowed	3 (8.2)
Monthly income of the family (Euro)	
< 250	15 (20.3)
250–850	40 (54.1)
> 850	19 (25.6)
Working status of the parent	
Housewife or not work	61 (82.4)
Works	13 (17.6)
Patient's characteristics	
Current age, y (mean ± SD)	8.6 ± 4.4 (3–18)
Sex	
Girl	28 (37.8)
Boy	46 (62.2)
Diagnosis	
Acute lymphoblastic leukemia	62 (83.8)
Acute myeloblastic leukemia	6 (8.1)
Lymphomas	4 (5.3)
Wilms tumor	1 (1.4)
Hepatoblastoma	1 (1.4)
Treatment status	
Active treatment	39 (52.7)
Completed treatment	35 (47.3)