

Cancers in the United Arab Emirates

Ghazi Omar Tadmouri
Mouza Al-Sharhan

Cancer is the third leading cause of death in the UAE after cardiovascular diseases and accidents (Badrinath *et al.*, 2004). Data from the UAE Ministry of Health indicate that cancer accounts for approximately 500 deaths per year. It is a disease no one can afford to have. Currently, millions of Dirhams are being spent to treat advanced cancer cases in the UAE. To our knowledge, the first international scientific account of cancer in the UAE dates back to year 1981 when Bate and colleagues (1981) described five cases of primary hepatoma among 209 patients with liver disease who attended Al-Qassimi Hospital in Sharjah. One year after the Tawam Hospital started its services in September 1979, radiotherapy became available for the first time in the UAE. In February 1983, oncologists in the UAE and the ministry of health recommended the Tawam Hospital as the cancer referral hospital in the country. During that same time, Mr A D R. Beal established an unofficial digital Tumor Registry. The registry contained significant information on the occurrence of cancer in the UAE that were presented in the first UAE Cancer Congress and Cancer Week in year 1985 (Brown, 1985). In 1998, the Tumor Registry of Tawam Hospital developed into the official UAE National Cancer Registry with the aim to understand the incidence of distribution of all cancer in the Emirates. Shortly thereafter, a Ministerial Decree made notification of cancer cases mandatory. The UAE National Cancer Registry staff regularly visit UAE hospitals and collect cancer-related information from patient's charts. Cancer morphology and topography are coded in accordance with the International Classification of Diseases for Oncology (Second Edition). Other information is coded according to the rules and regulations of the Gulf Center for Cancer Registration (GCCR) operating manual.

At present, there are three oncology centers in the United Arab Emirates, but only Tawam Hospital and Dubai Hospital have dedicated pediatric oncology units. At the Tawam Hospital, the pediatric oncology unit is 20 years old and is staffed by two pediatric

oncologists working with pediatric but not oncology nurses. It handles approximately two thirds of the pediatric cancer cases in the country. Imaging facilities are modern, and cell surface phenotyping for leukemia is available (Mpofu and Revesz, 1996).

A Synopsis on Cancers in the UAE

A retrospective analysis of patients admitted to Tawam Hospital during years 1980 to 1984 indicated the presence of 1,357 cases of cancer. These included breast cancer (9%), head and neck cancer (9%), lung cancer (7%), non-Hodgkins lymphoma (6%), acute leukemia (5%), cancer of the cervix (5%), stomach cancer (5%), Hodgkins lymphoma (4%), cancers of the colon and rectum (4%), thyroid cancer (4%), and others (Holt, 1985). During the first five years of activity of the Radiotherapy Unit at Tawam Hospital (1979-1984), there were 170 registered cases of head and neck cancer (Brown, 1985). These included cancers of the pharynx (40%), the thyroid (27%), the mouth (19%), and the larynx (14%). In 1998, the GCCR indicated that the crude incidence rate of all malignancies in the UAE population was 39.3 per 100,000 while the overall age-standardized incidence rate with a world standard population reference was 76.7 per 100,000. Data from the GCCR point confirmed previous observations that breast cancer is among the most common malignancies observed in the UAE population.

From years 1981 to 1984, 1,185 adult male patients with cancer were treated at Tawam Hospital and 27 of these patients had testicular germ cell tumors (Siddiqui, 1985). This accounted for 4% of all malignant tumors in males as seen at the hospital. This is in contrast to the 1% incidence reported in Western countries. The increased incidence of germ cell tumors in the UAE seems to be related to the large population of young male workers living in the country. In fact, 44% of the patients were from the Indian subcontinent and 22% were non-UAE Arabs (Siddiqui, 1985).

In the year 1990, the experience gained at Tawam Hospital between years 1983 and 1989 on children

with malignancies in the UAE was reviewed. On average, there were 20 new cases diagnosed annually during years 1983, 1985-1987. However, this rate increased to 37 new cases diagnosed in years 1988 and 1989; this is similar to the upward trend of admissions to the Oncology Unit of Dubai Hospital (Shetty *et al.*, 1997). UAE national children were the most affected (43% of all patients) followed by other Arabs (31%), South Asians (19%), and children of other nationalities (5.5%). Acute leukemia was found to be the most frequent childhood malignancy followed by brain tumor, lymphomas, and Wilm's tumor (Revesz *et al.*, 1990). In 1995, Revesz and colleagues published an update for 11 years of data from Tawam Hospital on the occurrence of childhood malignancies. Leukemia and lymphoma accounted for 62.7% of all tumors while stage distribution for Hodgkin's disease and non-Hodgkin's lymphoma showed a relatively high proportion of advanced stage disease. Children of sub continental origin (Indian and Pakistani) had significantly more acute lymphoblastic leukemia and less lymphoma than children of Arab origins (Revesz *et al.*, 1995). This may reflect an interim phase in the pattern of acute lymphoblastic leukemia between those of the developing and industrialized countries (Revesz *et al.*, 1996).

In the year 2003, Ghafoor and colleagues (2003) presented a prospective analysis of all prostate cancer patients diagnosed and treated at Tawam Hospital and Al-Ain teaching Hospital during the period from 1982 to 2000. In total, there were 85 subjects studied. The study revealed that majority of the patients were diagnosed between 51 to 60 years of age and that the majority of patients were UAE nationals (44.0%), followed by patients from neighboring countries, i.e., Oman, Yemen, Syria, Jordan, and Egypt (40.5%). The majority of the patients (77.7%) presented with an advanced disease. According to this analysis the annual incidence of prostate cancer is 4.5/100,000 male population. The prevalence of prostatic carcinoma in the UAE, like other Arabian Gulf and Asian countries, is very low compared to Western Countries despite the high intake of calories and consumption of animal fat. However, genetics and environmental factors, believed to be involved in the complex etiology of prostate cancer in UAE, are not clear yet and awaiting investigation (Ghafoor *et al.*, 2003).

Breast Cancer

Literature on the genetic predisposition of breast cancer is limited in Arab women. As in many other Arab countries, breast cancer is the most common cancer in females in the UAE (Holt, 1985). The true incidence is difficult to report as the majority of the population is migratory. However, it is well known that Arab nationals including those from the UAE tend to develop breast cancer at least a decade earlier than their counterparts in Western countries (Wynder *et al.*, 1960). Due to social customs, many Arab women do not present themselves for regular medical examination and this usually results in late presentations, scanty epidemiological data, and insufficient clinico-pathological studies (Anim, 1990). Pain has been reported by some workers to be a significant presenting feature of the disease among Arab women.

In the year 1985, a retrospective study comprising 153 breast cancer patients, treated in various hospitals in the UAE from year 1983 to 1985, indicated that the majority of the patients were non-UAE Arab nationals as this group constituted the largest group of female expatriates in the UAE at the time (Gautam and Siddiqui, 1988). Among 153 patients, there was only one male breast cancer patient. Eighty six per cent of parous patients breast-fed their babies and only 4% of the patients gave positive family history of breast cancer. All patients had delayed presentation for treatment, the majority presenting beyond six months of noticing a lump. Probably, this indicates a lack of personal perceptions of susceptibility to breast cancer, since a correct perception usually has a positive impact on the women's screening behaviors (Bener *et al.*, 2002). However, this situation seems to have changed. At the beginning of 1998, a breast cancer screening program was introduced in the city of Al-Ain. The age-standardized incidence of breast cancer for 1998 for the population was 15.5 per 1000 (Denic and Bener, 2001). This is far lower than the incidence rates in neighboring countries such as Kuwait and Saudi Arabia. Many features of women's perceptions, knowledge, and attitudes toward breast cancer are encouraging (Bener *et al.*, 2002).

Denic and Al-Gazali (2002) examined the consequences of the long-term practice of consanguineous marriage on the prevalence of breast cancer genes. They simulated, by computer, the mating of non-con-

sanguineous and consanguineous populations over 40 generations. Results indicated that in a highly consanguineous population breast cancer carrier rate decreased 6-fold faster than in a randomly mating population (0.022% versus 0.0035% every 25 years). The mechanism that explains this result is that consanguineous couples see more of their homozygous offspring die before reaching reproductive age than do non-consanguineous couples. This is because humans homozygous for breast cancer mutations lack conserved tumor suppressor genes that perform essential cell functions and, thus, are expected to be biologically not viable (Denic and Al-Gazali, 2002).

Perspective

The number of scientific articles published at international level on cancers in the UAE exceeds 200 manuscripts. Many of these papers either describe individual cases or include meta-analyses of hospital records. Many types of cancers could be noted from these papers as present in the UAE population. These include: primary hepatocellular carcinoma (Bate *et al.*, 1981), malignant pheochromocytoma (Siddiqui *et al.*, 1988), malignant granular cell tumor of the neck (Thunold *et al.*, 1989), xeroderma pigmentosum (Al Rubaie and El Darouti, 1990; El-Hayek *et al.*, 2004), posterior mediastinal teratoma (El Kalla *et al.*, 1990; Adams *et al.*, 2004), lipoma of the floor of the mouth (Ghandour and Issa, 1992), endometrial carcinoma (Ojomo *et al.*, 1993), colorectal carcinoma (Alathmani *et al.*, 1996; El-Ghazawy *et al.*, 2001; Al-Shamsi *et al.*, 2003), brain tumors (Merzak and Pilkington, 1997), Wilms' tumor (Nawaz *et al.*, 1999),

congenital leukemia (Lestringant *et al.*, 2000), leukemia cutis (Lestringant *et al.*, 2000), Burkitt's lymphoma (Castella *et al.*, 2001), non-Hodgkin's lymphoma (Castella *et al.*, 2001), breast cancer (Bener *et al.*, 2001), cervical carcinoma (Denic, 2003), prostate cancer (Ghafoor *et al.*, 2003), and others.

Patients with cancer and their families are more likely than others to pass through various stages of shock, self-denial, and depression leading to poor coping (Shetty *et al.*, 1997; Eapen and Revesz, 2003). Generally, ordinary or uneducated people of the UAE understand without difficulty the concept of cancer, the need to carry out complicated tests to reach diagnosis, and the outline of treatment. Family attitudes and perceptions are integral parts of proper psychological development and self-esteem of the patient. Family members usually modify their coping tasks and related strategies as clinical events occur, such as: diagnosis, side effects, or death. This process of adaptation is dynamic and consists of five components: confronting treatment, maintaining family integrity, establishing support, maintaining emotional wellbeing, and searching for spiritual meaning. As a matter of fact, populations of this region have a far more philosophical approach to life and death than do many Westerners (Revesz *et al.*, 1990). This attitude enables most of the people to accept diagnosis and treatment of cancer with less anxiety especially when many of the cancers that were formerly considered universally fatal are now entirely curable (Eapen and Revesz, 2003).