

Cancer Control and Oncology Care in Iraq

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Abstract

This country report focuses on the cancer control and oncology services in Iraq. This report displaying the approaches that are made to implement the elements of the national cancer control program including cancer registration, prevention, early detection, treatment, palliative care and research.

Introduction

Based on projected population models, the global burden of cancer is set to increase by more than 60% in 2040; specifically in low-and-middle-income countries.¹ It has been predicted that the highest incidence of cancer within the coming years will be registered in the Eastern Mediterranean Region (EMR) for reasons attributed to population growth, aging, lifestyle modification, urbanization and exposure to carcinogens.² Iraq is one of the economies with upper middle income and had the most robust health-care system in the Middle East before 1990. The impact of consecutive wars, conflicts and political instability resulted in remarkable shortage in the medical recourses and requested funds with disruption of the relevant services including cancer care.³⁻⁵ Currently, the government spends 6–7% of its GDP on the health sector, nevertheless, it provides free of charge services to all citizens. There are numerous cancer care hospitals and centers distributed all over the Iraqi governorates.

This study focuses on the cancer control and oncology services in Iraq; displaying the approaches that are made to implement the elements of the national cancer control program including cancer registration, prevention, early detection, treatment, palliative care and research.

Cancer Statistics

In 2020, The World Health Organization estimated that there were 19.3 million new cancer cases and 10.0 million cancer deaths.¹ The Iraqi Ministry of Health (MOH) established the Iraqi Cancer Registry (ICR) since 1974 in collaboration with the International Agency for Research on Cancer (IARC). Data is documented routinely through the population based ICR by well-trained staff instructed on the Can Reg and ICD-O (International Classification of Diseases for Oncology) coding systems. The registered information on new cancer cases and deaths are pooled from public and private hospitals and laboratories in all governorates.⁶

The age-standardized incidence and mortality rates of cancer among the Iraqi population are 134.9 and 84.7 respectively.⁷ The latest ICR⁶ revealed that the total number of new cancer cases was 35,864 in 2019 with an incidence rate reaching 92/100,000 population (Table 1). Breast cancer was the most common among the Iraqi population (19.8%) followed by Bronchus and Lung cancer (7.9%), Colorectal (6.5%), Brain/CNS (6.4%) and Leukemia (5.5%). The leading three cancers

among males originated from the Bronchus and Lung (12.9%), followed by the Urinary Bladder (8.5%) and Colorectal (8.2%); while the top three among females were the Breast (34.1%), Thyroid gland (6.9%) and Brain/CNS cancers (5.9%). Children malignancies constituted 5.4% of the total cases of cancer at all age groups; the most prevalent was Leukemia (30.2% of total childhood cancers), Brain/CNS (20.7%) and Non-Hodgkin Lymphoma (7.9%). On the other hand, the total number of cancer deaths in Iraq was 10,957 forming a mortality rate equivalent to 28/100,000 population (Figure 1). The main causes of related deaths were due to cancers of the Bronchus and Lung (16%), Breast (11.3%) and Leukemia (8.6%).

Cancer Control

The Iraqi Cancer Board (ICB) was established by the Ministry of Health (MOH) in 1985 to deal with the burden of cancer through coordinating the relevant activities including cancer registration, prevention, early detection, treatment, palliative care and research. Globally, it has been well recognized that national cancer control plans (NCCP) are crucial to address and prioritize all cancer control programs in a given country. A NCCP was developed for Iraq⁸ following the recommendations of the WHO cancer control strategy.^{9,10}

Risk Factors

Among the EMR the prevalence of tobacco smoking exceeded 30% among men⁹ whereas tobacco-related cancer deaths have reached 18.4%.¹¹ The population based “STEPS Survey of Non-Communicable Disease” risk factors showed that 38.0% of men and 1.9% of women were current smokers in Iraq.¹² The average monthly expenditure on cigarette smoking was (34,485) Iraqi Dinars, whereas the cost of 100 packs of manufactured cigarettes as a percentage of per capita GDP was 2.4%.^{12,13} The same survey disclosed that 33.5% of Iraqi adult populations were obese, 65.4% were overweight and 47% experienced insufficient physical activity.¹² Relatively it has been reported that 50% of men and 35% of women in the EMR were overweight or obese.¹⁴ The majority of Iraqi adults males (97.8%) were life time alcohol abstainers; only 0.6% were current drinkers.^{12,15}

Prevention of Cancer

The World Cancer Declaration Target Report of the International Union against Cancer (UICC) showed that Iraq

Table 1. Distribution of the top registered leading cancers in Iraq in 2019

Rank	Top ten cancers / All	New cancer cases			New mortality cases		
		No.	%	IR*	No.	%	MR**
1	Breast	7,109	19.82	18.17	1,237	11.29	3.16
2	Bronchus & Lungs	2,832	7.90	7.24	1,752	15.99	4.48
3	Colorectal	2,328	6.49	5.95	691	6.31	1.77
4	Brain/CNS	2,283	6.37	5.83	889	8.11	2.27
5	Leukemia	1,977	5.51	5.05	946	8.63	2.42
6	Thyroid	1,802	5.02	4.61	125	1.14	0.32
7	Urinary bladder	1,710	4.77	4.37	462	4.22	1.18
8	Non-Hodgkin Lymphoma	1,477	4.12	3.77	425	3.88	1.09
9	Skin	1,311	3.66	3.35	91	0.83	0.23
10	Prostate	1,224	3.41	6.19***	343	3.13	1.74
	Total top ten	24,053	24,053	67.07	8,085	73.79	20.66
	Total others	11,811	11,811	32.93	2,872	26.21	7.34
	Grand total	35,864	35,864	100	10,957	100	28.00

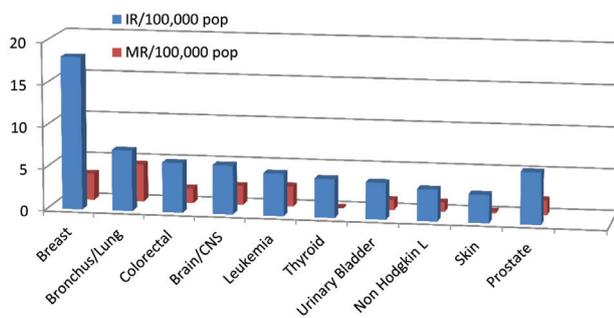


Fig. 1 Incidence and mortality rates per 100,000 populations of the top ten cancers in Iraq (2019).

has made significant advances in the field of prevention through adopting tobacco control legislation;^{16,17} prohibition of public availability of alcohol;^{12,15} promoting public mobilization campaigns on tobacco control and early detection of breast cancer,¹⁸⁻²³ physical activity, healthy diet; anthropometric screening in schools;^{12,15} and STEP wise surveillance survey on non-communicable disease risk factors.^{12,16}

Early Detection and Screening

In order to downstage breast cancer at the time of presentation and reduce its related morbidity and mortality, a national program for early detection of breast cancer was initiated by the Iraqi MOH in 2001 through establishing specialized centers and clinics for early detection of breast cancer at the governorate level.¹⁸⁻²³ The Ministry of Higher Education and Scientific Research (MOHESR) supported by developing a national cancer research program in 2010 focusing on breast cancer and a national cancer research center (NCRC) in 2012.²⁴ The NCRC launched several awareness campaigns chaired by community leaders and developed an online information system database on breast cancer under the supervision of WHO/IARC.^{18,19,23-26}

Though not common among Iraqi women, opportunistic screening of cervical cancer was carried out sporadically on a low scale. It has been reported that 9.9% of women (aged 30-49 years) in Iraq had a Pap smear test at least once in their life time.^{12,27} Meanwhile, there are ongoing plans to initiate screening for colorectal cancer in Iraq.

Cancer Diagnosis

Pathologically, Iraq initiated a process of establishing accreditation for cancer laboratory diagnosis according to international standards under supervision of IAEA, WHO and the Royal College of Pathologists through adopting Good Laboratory Practice.²⁸ The Medical City Teaching Hospital (MCTH) and other major tertiary centers in Iraq organized a plan of action to upgrade the genetic test procedures in different fields. At the imaging level, there were 152 CT scans and 90 MRI machines in 2019 constituting 3.9 and 2.3/100,000 Iraqi populations respectively. PET/CT is functioning in MCTH and in private oncology centers in Baghdad, Najaf and Erbil. There are five Gamma Cameras in Baghdad and Gamma knife procedure is readily practiced in Erbil.²⁹ On the other hand, excluding Baghdad and Erbil, there is a limited access to Nuclear Medicine diagnostic facilities.

Treatment and Oncology Care

The main registered causes of death among the population are ischemic heart disease, followed by cancer and cerebrovascular accidents.^{6,29} Currently the Government spends 6-7% of its GDP on the health sector; providing free of charge services to all citizens. Specialized care is also presented by private hospitals, the costs of which are met out-of-pocket.^{5,30,31} Excluding Kurdistan region, there are about thirty-five public cancer care facilities, i.e., hospitals, centers, and units; distributed over the Iraqi governorates (ten of which are in the capital); comprising approximately 2,000 beds. The largest public tertiary hospital in Baghdad, the “Medical City Teaching Complex” (MCTC), includes four specialized cancer facilities. “Zhianawa Cancer

Center” and “Hiwa Cancer Hospital” were established in Kurdistan. The latter is considered the second largest provider of public oncology care following “Al-Amal National Cancer Center” in Baghdad.^{30,31}

Medical and Radiation Oncology

Oncology care is provided through specialized Oncology and Radiotherapy hospitals. Clinical oncologists are licensed to perform chemotherapy and radiotherapy. It has been recorded that out of 11,585 specialized physicians in Iraq there were 128 medical or radiation oncologists.^{31,32} Excluding Kurdistan, over 120 medical and radiation oncologists are officially registered at the present time in the Iraqi MOH; whereas 75 postgraduate medical students are completing their board-certified studies in oncology and radiotherapy. In addition, there are about 40 oncology physicians currently running the cancer care facilities in Kurdistan. Obviously the total number is still lower than that requested to reach the requested coverage rate according to the international recommendations on oncology consultant staffing.³³ This shortage emphasizes the urgent need to invest in qualifying human resources in all aspects of cancer care.³⁴

The MOH imports cancer drugs and medical equipment through the “State Company for Marketing Drugs and Medical Appliance” and distributes throughout all governorates.³⁵ WHO developed its “Model Lists of Essential Medicines” to support countries in prioritizing their reimbursable medicine.³⁶ In the past, many of the essential cancer drugs were not available; but the situation improved when the government increased the allocated budget to MOH.^{4,33,35}

Progress in radiation oncology is proceeding in Iraq through establishing specialized centers and rehabilitation of the staff. Currently there are twenty-one Mega Voltage Machines in Iraq; six in Baghdad.^{29,31} A high dose rate Brachytherapy is functioning in Zhinawa Cancer Center. The directory of Radiotherapy Centers of IAEA has registered all public radiotherapy facilities within the Iraqi governorates.³⁷ The UICC declared that Iraq has improved the free access to accurate diagnosis and multimodal treatment of cancer as almost 80% of the treatment protocols are covered and the waiting lists for radiotherapy have been significantly shortened.¹⁶

Palliative Care

Palliative care in the EMR is impeded due to deficient national policies, inadequate financial resources, lack of trained staff and limited access to pain relieving drugs.^{38,39} During the past decade pain management units have been established in most tertiary hospitals in Iraq. In cases of cancer, prescription of morphine and other opioids is the responsibility of the examining oncologists who refer patients to these clinics. A fellowship program in pain management has been initiated by the MOHESR in 2016 for certified Iraqi Board specialists.

Cancer Research

In general, numerous research studies on the burden of cancer in Iraq have been published by Iraqi specialists in international peer reviewed journals, and are readily available online. Emphasizing the role of research as one of the basic pillars in the adoption of a national cancer control strategy, a National Breast Cancer Research Program was established by the Iraqi MOHESR

in 2009; from which stemmed the National Cancer Research Center (NCRC) in 2012. An online information system data base for breast cancer patients was organized in coordination with the Screening Unit of IARC; which was later utilized to compare the demographic characteristics, clinicopathological presentations and management outcomes of breast cancer patients in the region through developing a “Regional Comparative Breast Cancer Research Project”.^{18,19,23,25-27}

Recently, a Memorandum of Understanding has been developed between the Iraqi Cancer Board of MOH and IARC. The objectives are to conduct high-quality evidence-based research in cancer prevention and control; focusing on registration, descriptive epidemiology, capacity building and biological material transfer.

Education and Training

The Iraqi Board for Medical Specialization grants certified Board in Oncology for postgraduate students. In general, the officially registered educational training programs belonging to the Iraqi MOHESR, MOH and KRG graduate hundreds of oncology specialists annually; thus yielding numerous studies on cancer care. That could assist in addressing the shortage of oncology physicians. Many of the teaching hospitals in Iraq are recognized training centers by the Arab League Council in various medical specialties.⁴⁰

International Collaborations

In addition to the educational and training opportunities on cancer control offered through WHO and IARC, IAEA signed a Country Program Framework (CPF) with the Republic of Iraq in 2017 for the years (2018 - 2023). The CPF focused on building capacity of the health sector, particularly on nuclear medicine and radiotherapy. The core program includes provision of requested equipment and sponsoring training programs on quality assurance. The project involves collaboration with IAEA/PACT (Program of Action for Cancer therapy) and WHO to implement the Iraqi NCCP. The Capacity Building Program executed its first activities in 2017 through training Iraqi Pathology leaders in UK under supervision of the Royal Colleges.²⁸

Currently, WHO is assisting MOH in the institutionalization of a National Health Account to support in the development of health care policy financing systems and social insurance through compiling relevant data on the country health expenditures.⁴¹ In 2020, WHO planned for a mission on cancer control in collaboration with IEA/PACT and IARC, to aid in implementing the NCCP.

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Conflict of Interest

The author declares no conflict of interest.

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