

EDITORIAL**Impact of Sanctions on Cancer Care in Iran**

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The right to health accepted as an essential human right and the world health organization (WHO) emphasizes to settle a right-based approach to health (1). The US administration's withdrawal from the Iran nuclear deal in May 2018 requires imminent attention to the impact of sanctions on health of more than 80 million Iranians. In Iran, public health-care system plays a central role in providing health care and treatment services (2). The sanctions before 2015 indirectly targeted Iran public health system (3). New sanctions will have devastating effects on the health of many Iranians, notably patients suffered from cancer. Cancers are the third cause of death in Iran (4).

Nowadays fighting against malignancy requires a multidisciplinary approach. Early diagnosis of a malignancy makes the treatment easier and increases the chance of curative treatment (5). Diagnosis of malignancy is based on precise imaging studies and correct pathological results. To make a definite pathologic diagnosis, usually it is mandatory to add Immunohistochemical finding and genomic study with Histological finding (6, 7). Furthermore, recent studies insist on the role of new imaging technology like whole body MRI in earlier detection of tumor spreading through the body (8). Economic sanctions target the government general budget and decrease Iran currency value. So, cost of these diagnosis methods will increase too much that the public health insurance wouldn't afford them.

Not only the diagnosis but also the treatment and follow up of cancer patients will be affected as well. Treatment of cancer consists of surgery, chemotherapy, and radiotherapy (9). Iran Radiotherapy facilities are less than world standard level. During the embargo

before 2015, the amount of these facilities had fallen sharply (10). Novel chemotherapy drugs and new biologic anti-cancer agents are too expensive and Iranian public insurance system may not be able to afford it for the increasing number of patients. More than 95% of Iranians are covered by government insurance, but inability of public insurance to cover the cost of these expensive treatments restricts the access of middle and lower economic layers of the population to these agents (11). This was a miserable experience that had occurred in the era of economic sanctions which ended by 2015 nuclear deal (12).

Meticulous surgery in cancers is dependent to high-tech equipment's. Specifically, resection of sacrum and pelvic tumor are difficult because of anatomical location and needed navigation. Modular tumor prosthesis and osseointegrated prosthesis are today's approved methods for limb sarcoma surgeries (13-15). These are just a few of the important use of advanced surgical technology in cancer treatment. Like what happened for buying medical facilities and specific drugs in the previous Iran sanctions (16). Difficulties in holding license for export of medical apparatus, financial transaction, and shipping insurance as well as fear of possible U.S. ban on international medical companies and international banks restrict the pathway of buying equipment needed for these surgeries. Finally follow up of malignant patient after treatment is dependent on modern technology, like PET-scan, the expensive technique which was affected in the same way mentioned above.

The same effects of cancer care have been observed in other set of economic sanctions including against of Iraq Syria and Cuba (17-19). Moreover, Sanctions restricted the access of health centers in Iran to collaborate with

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leading international research centers, and it could impede participation in international congress and workshops. It will endanger the cancer research in this country (20).

All the above is just a part of the concern on managing cancer patients in Iran. Finally, all direct or indirect effects of US new sanctions on Iranian patients are against Human rights.

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