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Current situation of breast cancer in Pakistan with the available interventions

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Abstract

The aim of the current review is to demonstrate and indicate the lack of resources and strategies for the diagnostic and palliative care of the patients suffering from breast cancer. As, cancer is a major disease worldwide, it is presiding the errand of medics. In all cancers, breast cancer is a pronounced issue in females all over the world, including Pakistan. It is at the topmost of the list of both genders. There are some institutes working as the registry of cancers in Punjab and Karachi, but are insufficient and its working should be expanded to all provinces of Pakistan to meet the required cancer statistics inclusion nationwide. There are major concerns in collection of the data like; government negligence, lack of awareness, ignorant attitude towards disease management and much more. For the prevention and reduction in the prevalence of disease, the health official must ponder over current state seriously by developing the proper institutes, organized system and implementation of awareness programs to educate people to undergo regular examination for early detection of disease throughout Pakistan.

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Introduction

Cancer is a chief concern and a leading cause of mortality worldwide. Cancer is a non-communicable disease characterized by uncontrolled abnormal division of cell (Shewach and Kuchta, 2009). In the past few years, an upward trend was seen in health burden due to prevalence of non-communicable diseases (Ghoncheh *et al.*, 2016). This is in turn has adversely effected the quality of patient's life (Ashiq *et al.*, 2017). In Asiatic countries like Pakistan there is an ongoing increase in the progression of breast cancer and it has become one of the prominent causes of death (Agarwal *et al.*, 2007). Annually, about 3 million new cancer cases are recorded and so far more than 2 million deaths due to cancers have been reported only in Asia. If current disease advancement is continued and existing preventive measures are not provided, then it is estimated that the number of new cases in Asia will be raised to approximately 7.1 million continually till 2020 (Park *et al.*, 2008). According to the global report generated by WHO in 2016, 56.9 million deaths were reported among which 15.2 million deaths occurred due to ischemic coronary illness and stroke, comprising almost 54% of the total mortality rate recorded. However the remaining 3.0 and 1.7 million deaths occurred in different time frames i.e. in 2016 and 2018 respectively, due to chronic obstructive pulmonary infection and lung cancer (alongside trachea and bronchus malignancies) separately. Furthermore, in the United States in 2017 almost 1,688,780 new cancer cases were reported, out of which roughly 6, 00,920 cases were pronounced dead (Abbosh *et al.*, 2017).General trend states that almost half of the cancer patients reside in developing countries as they contribute more towards the prevalence of cancer than any other developed nations since the resources required to combat the disease are meager (Parkin *et al.*, 1993). According to cancer statistics breast cancer contributes to the second highest prevailing cancer and it cause hormonal imbalance that can lead to abnormal growth of facial hair, a condition known as Hirsutism (Mahmood *et al.,* 2011). Breast cancer is one of the major causes of mortality after Lung cancer that comes first as the leading cause of death (Ghoncheh *et al.*, 2016). The proportion of the incidence of breast cancer is quite high in developed and under developed nations. Furthermore, data suggests it is the most frequent type of cancer diagnosed in women since each 1 in 10 cancer cases belongs to the breast cancer. It is seen that worldwide each year over a pair of million women is square diagnosed with breast carcinoma (Ferlay *et al.*, 2010; Ginsburg *et al.*, 2017). An increased trend of occurrence in breast cancer prevalence is mostly seen in the women of age group between thirty to thirty nine years old (Usmani *et al.*, 1996). Chemotherapy used in treatment of breast cancer can lead to renal failure which is associated with variety of comorbid conditions and negatively affects patient's quality of life (Tanveer *et al.*, 2019). There are varying indicative factors that are responsible for contributing to the advancement of the etiology of breast carcinoma such as genetic science, diet, chemicals, and environmental factors (Hafeez *et al.,* 2009). Nanoparticles toxicity is also one of the major causes of genetic mutations that can prove to be carcinogenic as these nanoparticles are present in smoke, paints and even in air (Tanveer *et al.*, 2014).

Current situation in pakistan

Pakistan, the 6th most crowded nation on the globe and is a republic in south central Asia. It shares universal topographical limits and social similitudes with India in the east and southeast, Iran and Afghanistan on the west and northwest and China and Soviet Central Asian Republics in the north. Political unsteadiness and economic destruction have ruined our establishments in general and health department specifically (Bhurgri *et al.*, 2006; Hanif *et al.*, 2009). Pakistan is facing many plights especially financial constraints being a lower middle income state of South East Asia (Khan, 2017). In Pakistani population there is an upward trend in the predominance of cancer and has effected all genders (Sarwar and Saqib, 2017). Thus, the diagnosis of breast cancer is obtained almost a decade earlier in Pakistan as compared to other western countries (Somoro *et al.*, 2018). Almost 30 cancer hospitals are currently operative In Pakistan and are providing

their services to patients effectively. This includes11 cancer hospitals in Sindh, 7 in Punjab and Khyber Pakhtunkhaw, 3 in Capital city Islamabad and one in Baluchistan, Gilgit and Baltistan each. Conversely, there is no cancer hospital in Kashmir (Pak info medics, 2018). There is Pakistan being a developing nation faces a twofold weight of diseases with a noteworthy occurrence of cancers and there is a continuous rise in the pattern of risk elements, profile and frequency of cancer (Bhurgri *et al.*, 2006; Hanif *et al.*, 2009). The data of breast cancer statistics in Karachi alone illustrate the proportion of breast cancer to be 69.1 per 1 million out of which most of the cases presented were in stages of III and IV (≥ 50%) (Ahmad *et al.*, 2006).According to the study conducted in the Baluchistan region of Pakistan breast cancer came out to be quite common among the Pushtoon ethnic group with age ranges 41-50.Among these the most prevalent form observed was invasive ductal carcinoma followed by invasive lobular carcinoma (Baloch *et al.*, 2012).

In an investigation, it was estimated that a total of 28,740 patients, cancer was detected and subjects got registered at INMOL during the period from 1st January, 2000 to 31st December, 2009. Among those almost 6,718 patients reported having breast cancer. The proportion of occurrence of breast cancer among women was 41% (38% in the first five years and 42% in the later five years). The ratio among the female and male counterpart was 100:2.

As far as regional statistics is concerned Lahore came out to be the most cancer prevailing city (Table 1) with almost 46% of patients with small number residing in adjacent cities.

Table 1. Breast cancer statistics in different cities of the Punjab (Khoker *et al.,* 2012).

Cities	Percentage of patients with breast cancer
Lahore	46%
Gunjranwala	7%
Sialkot	6%
Sargoda	4%
Shiekhupura	4%
Kasur	3%
Okara	3%
Sahiwal	3%
Faisalabad	3%
Gujrat	3%

Only 7% of patients were from Gujranwala, 6% of Sialkot, 4% each of Sargodha and Sheikhupura and 3% were from each Kasur, Okara, Sahiwal, Faisalabad and Gujrat (Khoker *et al.,* 2012). Registering a disease that has any association with the cancer is quite challenging here. Thus, no national information is accessible on frequency of cancer in Pakistan. Therefore, there is an upward trend in the prevalence of breast cancer which is occurring at the increment of 150K cases every year with 50-60% deceased rate (Shabbir *et al.*, 2019). Breast cancer constitutes 33% of all cancers in women admitted at Nuclear Medicine, Oncology and Radiotherapy Institute (NORI) Islamabad (NORI Annual Report 2010-2012). Survival strategies for breast cancer are quite divergent and vary broadly according to numerous factors. Formation of metastases is one major causative factor for short survival in breast cancer (Rezaienzadeh *et al.*, 2012). Some initiatives are now being taken by the Government of Pakistan to control the current situation. One such initiative is taken by Pakistan health research committee (PHRC) working under service of national health administrations, control and coordination, Government of Pakistan, i.e. the intention of building up a cancer registry by affiliating and bridging all real open and private

division hospitals of the nation. PHRC is likewise dealing with awareness and mindfulness of cancer in public by leading distinctive exercises and commending disease days like strolls for breast cancer, in addition to this, dissemination of mindfulness material would be like wise done throughout the country (PHRC, 2018). Moreover, there was also another such cancer record maintaining entity that was formed in 1966 named as Karachi Cancer Registry (KCR) which later on became the main perceived populace-based cancer registry in the region. Nationwide considering Karachi only, south region of Pakistan, records for less than 1% of the aggregate populace of the country. Dr. Yasmin Bhurgri chief of KCR was an efficient principle researcher who worked and gathered major information on cancer statistics but departed around 2 years prior hoping that her work will be preceded. Currently KCR is working with joint efforts of GICR, IARC and ENCR (IACR, 2018). Over the years, some other cancer treatment offices have endeavored to advance cancer enrollment in the district. One such focus is the Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCH and RC), Lahore, Pakistan, which has a hospital-based cancer registry presently working for around 19 years. World Health Organization (WHO) provides an organized framework that provides global guidelines on cancer enlistment and restorative coding data. The SKMCHRC cancer registry is one of a single archive of the whole nation that follows all these WHO guidelines and maintains records of this restorative coding data. Thus, SKMCH and RC has been able to provide this Information to hospital experts help them assess childhood cancer in Lahore region efficiently (SKMCH&RC, 2018). Furthermore, the Punjab Cancer Registry (PCR) was set up in February 2005 for taking decisions on tumor insights in the locale at general mass level. At first, endeavors were made to gather data from cancer patients in the region of Punjab and ultimately got successful on July 1, 2008 in executing the collection of information on cancer analysis and treatment among the inhabitants. In 2014, the registry expanded its operation in four different regions of Punjab including Faisalabad, Sheikhupura, Kasur, and Nankana Sahib. In 2016, this registry expansion was further progressed by the inclusion of Sialkot and Narowal locale. Currently, the registry has around 39 individuals to exhibit who are part of more than 20 foundations. The Central Office of the Registry is situated inside the Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCH and RC), Lahore, Pakistan. Thus the running of the registry is likewise supported by SKMCH and RC (PCR, 2018). PCR data has a profound importance as it has been used to provide cancer estimates for Pakistan in GLOBOCAN 2012 report in response to a call for data by the International Agency for Research on Cancer (IARC) (GLOBACAN, 2012). Although a number of studies have been done worldwide to estimate survival of breast cancer patients with regard to demographics and clinic pathological features but no such study has been done in Pakistan (Humera *et al.*, 2015). The reason for this could be attributed to inability of reaching out to those cancer patients who doesn't seek medical treatment. Cancer treatment is quite costly and only few hospitals have managed to provide free of cost detailed treatment designs which include Shaukat Khanum Memorial Cancer Hospital (SKMCH), Bait-ul-Sukoon Cancer Hospital and Children Cancer Foundation Hospital. These hospitals do offer free/sponsored treatment designs but through zakat subsidizes or Bait ul Maal nevertheless gaining treatment from these channels is an extensive and tedious process as candidates are more than government's liability (Begum, 2018). Poor implementation of policies leads to the increased prevalence of disease. There is a need to promote awareness about the disease to the local masses so that earlier diagnosis and treatment of disease can be made possible with their timely inclusion at hospital which would in turn help in maintaining cancer statistics at hospital registry (Ashiq *et al.*, 2018). Although a number of studies have been done worldwide to estimate survival of breast cancer patients with regard to demographics and pathological features but no such proper investigation has been done in Pakistan. Contrary to Europe and America, in Pakistan more than 60% of breast cancer

patients exist at an advanced stage of the disease. This means the biological behavior and disease etiology of breast cancer in Pakistani population is diverse (Humera *et al.,* 2015). Free cancer screening, maturity advantages and healthcare, construct of Medicare and Medicaid-like programs, and sponsored pharmaceutical drug programs have been enforced. During this, background the National Cancer Control Program (NCCP) developed as a part of the National Action (Fig. 1) to set up an evidence-based way for the timely detection, management, cure and palliation as suggested by the World Health Organization (Bhurgri *et al.*, 2006).

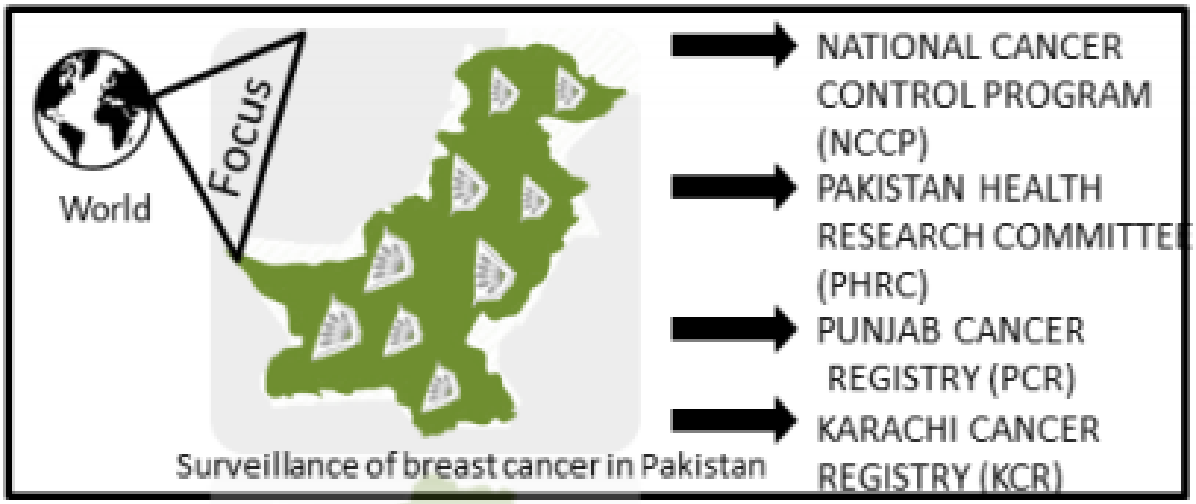

Fig. 1. Surveillance of breast cancer in Pakistan.

Conclusion

Cancer is still a huge issue in both developed and emerging countries, especially breast cancer. In Pakistan, breast cancer is found to be a chief form among all other types of cancers. There is an upward trend in progress and prevalence of breast cancer due to lack of facilities and awareness among the patients.

Currently no authentic data is available regarding morbidity and mortality of breast cancer which could be due to lack of patients' follow up. Besides this, even though cancer registries have been developed and our functional but they seem to be in their preliminary stage for designing the protocols for diagnosis and treatment of the cancer and are not adequate to provide complete statistics on breast cancer for early disease prevention. For the deterrence in the prevalence of disease, the health official must ponder over the current situation seriously by developing the proper institutes, organized system; implementation of awareness programs to educate people for regular checkup for early detection of disease all over Pakistan.

Conflict of interest

There is no conflict of interest.

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