Short Communication

Barriers leading to treatment delay in breast cancer patients: A demographic survey in speciality government hospital at Kolkata

Nihar Ranjan Pal[a], Shyamshree S. S. Manna[a*], Saroj Singhmura[a], Santanu Kumar Tripathi[b], Subrata Chakraborty[a], Jahar Majumdar[c]

[a]*Dr. B. C. Roy College of Pharmacy & AHS, Durgapur, 713206, West Bengal, India*

[b]*Deptartment of Clinical & Experimental Pharmacology, School of Tropical Medicine, Kolkata 700073, West Bengal, India*

[c]*KPC Medical College, Jadavpur, Kolkata 700026, West Bengal, India*

Received: 23 January 2019 Revised: 21 March 2019 Accepted: 23 March 2019

Abstract

Background: Breast cancer is the most common cause of mortality among women not just worldwide but also in India. The estimated number of incidence of breast cancer cases in India in 2016 was 118 000 and there has been surge in the disease across the states of India and is the leading cancer killer in Indian females. **Objective:** Unawareness being the criterion for delayed diagnosis and the treatment, the present investigations was carried out to understand the other factors that hinder the process of late diagnosis and treatment. **Methods**: This study was carried out in a well-known cancer care hospital-Chittaranjan National Cancer Institute (CNCI) Kolkata, West Bengal, and is one of the 25 Regional Cancer Centres in India. After interview and questionnaire, the data were collected and analyzed. **Results**: About 1324 patients, both indoor and outdoor patients from rural and urban areas were included in the study. The age of the study participants was ranged between 16 and >75 years. Most of them were not only unaware of breast carcinoma, but suffered from financial constrains, psychological barring, lack of proper infrastructure for diagnosis and treatment in rural areas. **Conclusion**: This study concluded that the awareness of the breast, alone is not the utmost important for early detection and in reduction of mortality, but also lack of proper infrastructure for diagnosing and treatment in rural, financial constrains also contributes to late detection.

Keywords: Breast Self-examination, epidemiological transition level, symptoms, risk factors, mammographic

Introduction

Cancer is the second leading cause of death globally after cardiovascular diseases (Global Burden of Disease Cancer Collaboration, 2018). A report in 2016 indicated that among all other cancer, breast cancer in India is responsible for the second highest proportion of cancer disability-adjusted life-years, which is about 8·2% (India State-Level Disease Burden Initiative Cancer Collaborators). It is leading cause of cancer deaths among females in 28 Indian states in 2016. The estimated number of incidents of breast cancer cases in India in 2016 was 118 000 (India State-Level Disease Burden Initiative Cancer Collaborators). Moreover; the information published in lancet oncology suggested the surge of the disease across the states of India and is the leading cancer killer in Indian females. Over a period of 26-year, there has been a significant rise in the incidences of breast cancer in females. The rise was about 39·1% from 1990 to 2016 in every state of the country (Global Burden of Disease Cancer Collaboration, 2018). The highest crude disability-adjusted life-years rates for breast cancer were in Kerala, Punjab, and Tamil Nadu in the high epidemiological transition level (ETL) state group, followed by Delhi, Maharashtra, Karnataka, Haryana and West Bengal in the higher-middle ETL group (Global Burden of Disease Cancer Collaboration, 2018). Similar report by Jana and colleagues stated that breast cancer is the most frequently reported cancer (22.7%) in females in the eastern India. Further, as per the ICMR (Indian Council Medical Research) data, breast cancer is most common among women in urban cities of Delhi, Mumbai, Ahmedabad, Kolkata, and Trivandrum (Global Burden of Disease Cancer

Address for Corresponding Author:
Shyamshree S. S. Manna
Professor (Pharmacology)
Dr. B. C. Roy College of Pharmacy & AHS, Durgapur
Meghnad Saha Sarani, Bidhannagar, Durgapur 713206, West Bengal, India
E-mail: sss.manna@hotmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.5.29

Collaboration, 2018). This constitutes >30% of all cancers in females as per National Cancer Registry Programme, 2009. Moreover, Indian have low survival rate (66.1 %) as compared to 90% of US and Australia (National Cancer Registry Programme, 2009). Interestingly, in India the peak occurrence of breast cancer is at younger age as compared to developed countries, where the onset is around the age group of 50 years (Sharma et al., 2012). Lack of awareness of early signs of breast cancer and screening methods could be the reason for increasing mortality. Since 68 % of Indian population are rural, non-availability of the diagnostic centre and knowledgeable oncologists add to the reasons of low survival rate in India. In view of the fact that early detection can cure breast cancer, the present investigation was done to revalidate the reasons for the rise in the number of incidences of death in this eastern part of India.

Materials and methods

Setting

Chittaranjan National Cancer Institute (CNCI) is a cancer care hospital and one of the 25 Regional Cancer Centers in India. The hospital was formally inaugurated by Irène Joliot-Curie in January 12, 1950 and named after Deshbandhu Chittaranjan Das in acknowledgement of the enormous donation of his land and property for the cause. Initially the Institute started as a cancer treatment centre, which gradually expanded its activities in basic and clinical research and eventually led to the founding of the Chittaranjan National Cancer Research Centre (CNCRC), funded by the Government of India in 1957. The Chittaranjan Cancer Hospital and Chittaranjan National Cancer Research Centre functioned as separate entities in adjacent buildings until their merger in 1987 and emergence of Chittaranjan National Cancer Institute (CNCI) with the objective of serving as a premier Regional Cancer Center (RCC) for the eastern Region of India, with the objective of serving as a premier Regional Cancer Center (RCC) for the Eastern Region of the Country.

Data collection

The interviews were conducted over a four years from June 2008- June 2012 by two female members of the research team. This involved 1324 patients covering 19 districts of West Bengal. Participants were asked to tell their story in their own words. Additionally, the patients were asked to fill up the questionnaire containing 40 questions, regarding awareness, socioeconomic status and health care utilization as depicted in table 1. In addition, the copies of the reports of the hospital was also analyzed and studied. The investigation involving human subjects obtained the informed consent was from each subject and the hospital authority.

Results

1324 participants completed interviews and table 1 depicts the patients from different age group and the percentage of patients from rural and urban areas. These participants were both from rural and urban areas covering about 19 districts of West Bengal and neighboring states of Jharkhand, Orissa and Bihar. As per the Indian census, about 70% of the population are rural, it was analyzed that out of 1324 subjects 820 were from rural area, indicating about 62% patients from rural area and while 38% from urban (Figure 1). Increase in the percentage of rural patients is sequel to financial constraints, non-availability of infrastructure for treatment facility, delayed diagnosis and treatment procedures. 79% of people are incapable of being treated due to financial constraints. Through interviews, it was reasoned that lack of awareness is one of the key rationale. The hospital had patients from different stages of the cancer, stage- I, stage-II & stage-III. It was observed that stage- III & stage- II covers the major portions of the pie chart of 46.11% and 35.63% respectively, whereas, stage-I patients consists of only 18.26% (Table 2 and Figure 2). Further we found that 53.33% of patients is the age group of 36-45 years is most vulnerable followed by 26-35 years & 46-55 years age group both cover 20% of the total number of patients depicted in Table 1. Similarly, among the rural

Table 1. Distribution of patient's age group

Distribution of Age (years)						
1	**2**	**3**	**4**	**5**	**6**	**7**
16-25 yrs	26- 35 yrs	36- 45 yrs	46- 55 yrs	56- 65 yrs	66- 75 yrs	>75 yrs
39	247	473	353	141	49	13

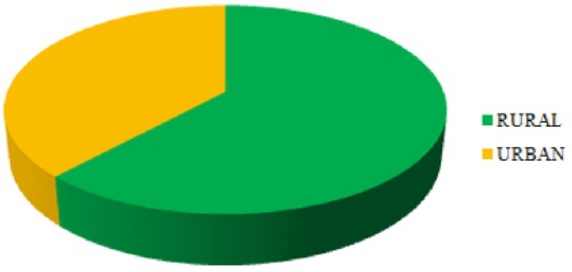

Figure 1. Distribution of study population on urbanization

Table 2. Distribution of three stages among the study population

No. of people	Stage	Percentage %
242	I	18.26
472	II	35.63
610	III	46.11

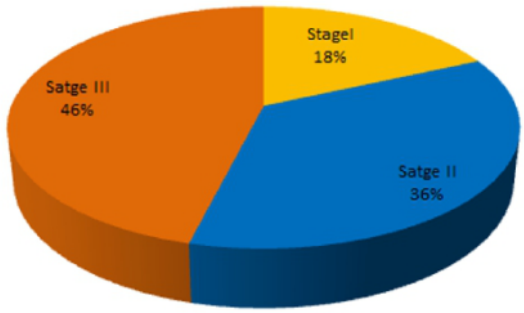

Figure 2. Distribution of three stages among the study population

Table 3. Distribution of age of study population having psychological barring

Age (Years)	No. of cases	Percentage
16-25	0	0
26-35	368	27.78
36-45	696	52.78
46-55	231	17.74
56-65	29	2.78
66-75	0	0
> 75	0	0
Total	**1324**	**100**

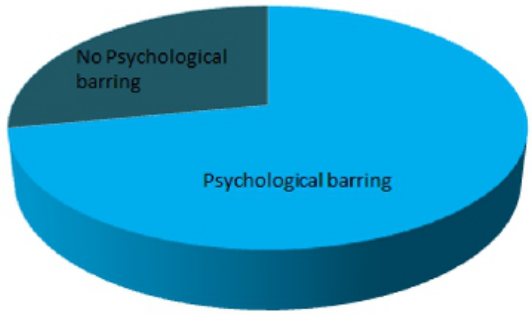

Figure 3. Distribution of study population showing psychological barring

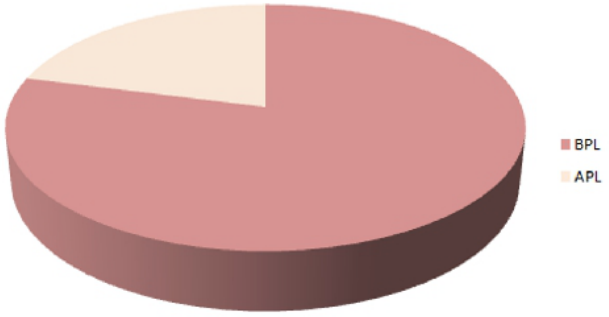

Figure 4. Analysis of financial status of study population below poverty line (BPL) and above poverty line (APL)

population, susceptibility of cancer was found in age group of 36-45 years, this may relate to the reason that maximum population under the investigation was from rural area. Psychological barrier may be one of the limiting factors (depicted in figure 3) in the delayed trend of diagnosis and treatment of breast cancer patients. Patients were shy and believe on stigma and taboos. About 72% of the patients had psychological barring, felt embarrassed, and believed in taboos. Table 3 shows that 52.78% patient of 36-45 years and 27.78% of 26-35 years age having positive psychological barring. Moreover, they are very much hesitant to undergo treatment because of increase in the financial burden, which in turn delayed the diagnosis and the treatment. Analysis was done to understand the percentage of people below poverty line that suffered the financial constrains (Figure 4).

Discussion

The study revealed that scarcity of awareness, ignorance, presence of stigma, fear and lack of infrastructure for diagnosis and modern modalities of treatment, financial constrains in the rural areas contribute to high mortality. This may be also the reason why India has the low survival expectance as compared to other developed countries. A consensus review from the Breast Health Global Initiative 2010 Global Summit summarizing barriers to breast cancer care highlighted the lack of or very limited access to treatment and limited knowledge of health professionals as major barriers to cancer prevention and detection in developing countries.

Plethora of studies has already demonstrated that unawareness, presence of stigma, fear, have contributed to the increase in the breast cancer (Dey, 2014; Kumarasamy et al., 2017; Madhukumar et al., 2017). In addition, lack of infrastructure for diagnosis and modern modalities of treatment are the other factors that aggravate the conditions. The delay in diagnosis as well as in treatment leads the patient to the higher stage i.e. Stage III of the disease, which was found to be about 46%. Self screening for most people was strange. BSE (Breast Self Examination), an important screening measure for detecting breast cancer (Global Burden of Disease Cancer Collaboration, 2015) is still unknown to the rural population. There is evidence that women who correctly practice BSE monthly are more likely to detect a lump in the early stage and early diagnosis has been reported to influence early treatment, to yield a better survival rate. In spite of being the one of the fast growing economies of the world, India still suffers poverty, and is a major reason in the increase of incidence in breast cancer (National Cancer Registry Programme, 2009). Patients with financial constrains refrain themselves from the costly

diagnosis and chemotherapeutic agents, which further delays the diagnosis and cause the advancement of the disease to higher stage.

Media like newspapers, television etc. may play important role to educate the mass to increase awareness (Madhukumar et al., 2017). India is a developing democratic country where there is a demographic and socioeconomic variation wherein the doctrines of breast cancer management may be violated due to the paucity of knowledge and funds. It is also important to remember that Government hospital or government-aided hospitals, which are tertiary care cancer centers, get most of the patients at an advanced stage of the disease. In India due to illiteracy, social taboo and familial neglect, etc., breast cancer treatment and care are neglected. NGO, electronic media like Radio, T.V. may bring about a change and upgrade the situation. Delayed treatment was divided into primary, secondary, or tertiary. Primary delay was defined as the time duration from the onset of symptoms to seeking medical advice from the primary care physician. Patients themselves caused this delay. Secondary delay was the time duration from seeking medical advice to refer to a tertiary care centre. This was primarily due to the delay caused by primary care physician. Tertiary delay was the time duration from seeking medical advice at CNCI to the start of definitive treatment. The audit reveals that the delay was caused by lack of knowledge, neglect from the family, financial compulsions etc. On the top of that primary care physician probably has one of the pivotal role in causation of the advanced stage of the disease due to delay in referral ultimately making the treatment more complex and expensive. Poverty of the majority of the people compels them not to think about their treatment of breast cancer. Sixty two percentage of the population in the study was from rural area and 79% of people were below poverty level having no financial capacity to fight against unpredictable and devastating disease like breast cancer. 72% of the population had psychological barring from the shyness and guilty feeling to the poor family point of view. 62% population was not aware of the degree of fatality. Most of the patients came to doctor in stage III or stage IV. In govt. hospitals numbers of caregivers like doctors, nurses, pharmacists and other staff are lower in comparison to the number of patients. Therefore, scope of soft skill application is limited. Private nurse provided by the patient party tries to fulfill part of this need. Patient with low income group cannot afford expenditures of private nurse and are deprived of soft skill application. Study shows that 87% of the patients got moderate quality of soft skill applications and 13% got the minimum. More govt. support in terms of man power and finance are required to fulfill the need. In this hospital, level of treatment adherence is moderate. Follow up part is not up to the mark because patients come from remote districts and poor family. The admitted patient requires financial support and physical attendance regularly.

Conclusions

The present study points out that increase in breast cancer mortality is not just due to the lack of awareness, but because of poverty, ignorance, lack of education, psychological barring, stigma. To this, lack of proper infrastructure for diagnosing and treatment in rural areas, delays treatment and diagnosis of early detection of breast cancer. Implementation of population level programs for screening through BSE/early detection of breast cancer, along with use of ways to improve awareness of women is need of the time.

Conflicts of interest: Not declared.

References

Dey S. 2014. Preventing breast cancer in LMICs via screening and/or early detection: the real and the surreal. World Journal of Clinical Oncology, 5(3):509–519.

Dhillon PK, Mathur P, Nandakumar A, Fitzmaurice C, Kumar GA, Mehrotra R, Shukla DK, Rath GK, Gupta PC, Swaminathan R, Thakur JS, Dey S, Allen C, Badwe RA, Dikshit R, Dhaliwal RS, Kaur T, Kataki AC, Visweswara RN, Gangadharan P, Dutta E, Furtado M, Varghese CM, Bhardwaj D, Muraleedharan P, Odell CM, Glenn S, Bal MS, Bapsy PP, Bennett J, Bodal VK, Chakma JK, Chakravarty S, Chaturvedi M, Das P, Deshmane V, Gangane N, Harvey J, Jayalekshmi P, Jerang K, Johnson SC, Julka PK, Kaushik D, Khamo V, Koyande S, Kutz M, Langstieh WB, Lingegowda KB, Mahajan RC, Mahanta J, Majumdar G, Manoharan N, Mathew A, Nene BM, Pati S, Pradhan PK, Raina V, Rama R, Ramesh C, Sathishkumar K, Schelonka K, Sebastian P, Shackelford K, Shah J, Shanta V, Sharma JD, Shrivastava A, Tawsik S, Tyagi BB, Vaitheeswaran K, Vallikad E, Verma Y, Zomawia E, Lim SS, Vos T, Dandona R, Reddy KS, Naghavi M, Murray CJL, Swaminathan S, Dandona L. 2018. The burden of cancers and their variations across the states of India: the Global Burden of Disease Study 1990-2016. Lancet Oncology 19(10):1289-1306.

Fitzmaurice C, Dicker D, Pain A, Hamavid H, Moradi-Lakeh M, MacIntyre MF, Allen C, Hansen G, Woodbrook R, Wolfe C, Hamadeh RR, Moore A, Werdecker A, Gessner BD, Te Ao B, McMahon B, Karimkhani C, Yu C, Cooke GS, Schwebel DC, Carpenter DO, Pereira DM, Nash D, Kazi DS, De Leo D, Plass D, Ukwaja KN, Thurston GD, Yun Jin K, Simard EP, Mills E, Park EK, Catalá-López F, deVeber G, Gotay C, Khan G, Hosgood HD 3rd, Santos IS,

Leasher JL, Singh J, Leigh J, Jonas JB, Sanabria J, Beardsley J, Jacobsen KH, Takahashi K, Franklin RC, Ronfani L, Montico M, Naldi L, Tonelli M, Geleijnse J, Petzold M, Shrime MG, Younis M, Yonemoto N, Breitborde N, Yip P, Pourmalek F, Lotufo PA, Esteghamati A, Hankey GJ, Ali R, Lunevicius R, Malekzadeh R, Dellavalle R, Weintraub R, Lucas R, Hay R, Rojas-Rueda D, Westerman R, Sepanlou SG, Nolte S, Patten S, Weichenthal S, Abera SF, Fereshtehnejad SM, Shiue I, Driscoll T, Vasankari T, Alsharif U, Rahimi-Movaghar V, Vlassov VV, Marcenes WS, Mekonnen W, Melaku YA, Yano Y, Artaman A, Campos I, MacLachlan J, Mueller U, Kim D, Trillini M, Eshrati B, Williams HC, Shibuya K, Dandona R, Murthy K, Cowie B, Amare AT, Antonio CA, Castañeda-Orjuela C, van Gool CH, Violante F, Oh IH, Deribe K, Soreide K, Knibbs L, Kereselidze M, Green M, Cardenas R, Roy N, Tillmann T, Li Y, Krueger H, Monasta L, Dey S, Sheikhbahaei S, Hafezi-Nejad N, Kumar GA, Sreeramareddy CT, Dandona L, Wang H, Vollset SE, Mokdad A, Salomon JA, Lozano R, Vos T, Forouzanfar M, Lopez A, Murray C, Naghavi M. 2015. The global burden of cancer. JAMA Oncology, 1(4):505–527.

Jana D, Mandal S, Mukhopadhyay M, Mitra D, Mukhopadhyay SK, Sarkar DK. 2012. Prognostic significance of HER-2/neu and Survival of Breast Cancer Patients Attending a Specialized Breast Clinic in Kolkata, Eastern India. Asian Pacific Journal Cancer Prevention, 13(8):3851-3855.

Kumar YS, Mishra G, Gupta S, Shastri S. 2011. Level of cancer awareness among women of low socioeconomic status in Mumbai slums. Asian Pacific Journal Cancer Prevention, 12(5):1295–1298.

Kumarasamy H, Veerakumar AM, Subhathra S, Suga Y, Murugaraj R. 2017. Determinants of Awareness and Practice of Breast Self Examination Among Rural Women in Trichy, Tamil Nadu. Journal Midlife Health, 8(2):84-88.

Madhukumar S, Thambiran UR, Basavaraju B, Bedadala MR. 2017. A study on awareness about breast carcinoma and practice of breast self-examination among basic sciences' college students, Bengaluru. Journal Family Medicine Primary Care, 6(3):487-490.

National Cancer Registry Programme. National Centre for Disease Informatics and Research. Three Year Report of Population Based Cancer Registries 2009-2011 National Cancer Registry Programme, 2009-2011.

Sharma K, Costas A, Shulman LN, Meara JG. 2012. A systematic review of barriers to breast cancer care in developing countries resulting in delayed patient presentation. Journal of Oncology, 2012:121873.