



BREAST OR CERVICAL CANCER SCREENING PROGRAMME: WHICH ONE NEEDS TO STRESS IN CHANGING TREND? WHY?

Hemali J Tailor¹, Mandakini M Patel², Sonal L Italiya³

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Author's Affiliation:

¹Assistant Professor; ²Additional Professor; ³Senior Resident, Department of Pathology, Government Medical College, Surat, India.

Correspondence:

Dr. Hemali J Tailor
E-mail: hemsanp@yahoo.co.in,

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ABSTRACT

Background: In India the cervix cancer rates are decreasing while breast cancer is on the increase and is likely to continue due to further changes in lifestyle factors. Early detection of breast carcinoma by complete breast examination or mammography helps in significant reduction in mortality.

Methods The authors have carried out a retrospective study in a tertiary care hospital in Surat by collecting breast cytology and histopathology data of 159 and 180 patients respectively as well as Pap smear data and cervix histopathology data of 3136 and 804 patients respectively. And finally we have analyzed both the data for calculating the percentage incidence of both type of malignancy in women of different age groups.

Result: Breast cytology data and biopsy data show malignancy in 41.51% and 60% of cases respectively and in Pap smear screening and cervix histopathology data show malignant features in only 0.1% and 24.13% cases respectively with maximum number of cases were in age group of 41-50 years.

Interpretation & conclusions: Total percentage of breast malignancy is significantly higher as compared to cervix malignancy which suggests need for emphasis on screening for breast malignancy along with Pap smear. India is at a crossroads and needs urgent steps to introduce appropriate screening methods to reduce breast cancer presentations in late stages and reduce mortality.

Key Words: Breast cancer, cervix cancer, cancer screening, time trends

INTRODUCTION

The cancer incidence data show that breast and cervix are the two leading sites of cancer cases among Indian women.¹ The National Cancer Registry program data in India shows decreasing cervix cancer rates while increase in breast cancer.^{2,3} The trend of rising incidence is likely due to changes in lifestyle factors such as childbearing and dietary habits.⁴ There is a clear need to improve facilities for diagnosis and treatment, as well as education and awareness.⁵ The U.S. Preventive Services Task Force (USPSTF) found that screening with cervical

cytology (Pap smears) reduces incidence of and mortality from cervical cancer and the benefits of screening substantially outweigh potential harms.

Several clinical trials have provided strong evidence for the efficacy of mammographic screening in reducing breast cancer mortality for women.⁶ An IARC Working Group concluded in 2002 that there is inadequate evidence that breast screening by CBE, either alone or together with mammography, can reduce mortality from breast cancer.⁷

World Health Organization, ICMR and Govt. of India have given more emphasis on early detection and prevention of cancer.^{8, 9} Less than 3% of Indian women undergo screening for breast cancer.¹⁰ Potential barriers to effective screening also include lack of necessary infrastructure and compliance. The costs of a screening program need to be considered against other health interventions.¹¹

During the past 50 years, breast cancer incidence has steadily increased whereas mortality rates remained stable as results of the Breast Cancer Detection Demonstration Project.¹² A screening programme can be justified only if it reduces mortality however, quality of life are also important to patients.¹³

The study has been done to know the current status and changing trends of breast and cervix uteri cancers in a tertiary care hospital of India which may guide us for stressing on screening strategy for both cancers and plan preventive measures accordingly.

MATERIAL AND METHOD

The study was carried out in a tertiary care hospital in Surat. In this retrospective study, we have collected breast cytology data of 159 patients and histopathology data of 180 patients. For the cervical malignancy we have collected Pap smear data of 3136 patients and histopathological samples of cervix either as a hysterectomy specimen or cervix biopsy data of 804 patients. We have analyzed both the data for calculating the percentage incidence of both the side malignancy in women of different age groups.

RESULT

Table 1 shows breast fine needle aspiration cytology [FNAC] data of 159 cases which show malignancy detected in 41.51% cases with maximum number of cases were in age group of 41-50 years.

Table 1: Breast Fine needle aspiration cytology (FNAC) data

Breast FNAC	Age								Total (%)
	0-10	11-20.	21-30	31-40	41-50	51-60	61-70	> 70	
Benign	0	16	38	25	8	1	2	1	91(57.23)
Malignant	0	1	4	6	29	14	9	3	66(41.51)
Atypia	0	0	0	1	1	0	0	0	2(1.26)
Total	0	17	42	32	38	15	11	4	159(100)

Table 2: Breast histopathology data

Breast Histo-pathology data	Age								Total (%)
	0-10	11-20.	21-30	31-40	41-50	51-60	61-70	> 70	
Benign	0	9	17	23	7	0	0	1	57 (31.67)
Malignant	0	0	6	21	38	25	15	3	108(60)
DCIS	0	0	1	1	1	0	0	0	3(1.67)
ADH	0	0	0	1	1	0	0	0	2(1.10)
Non con.	0	1	2	4	3	0	0	0	10(5.56)
Total	0	10	26	50	49	26	15	4	180(100)

Table 2 shows breast biopsy data of 180 patients which show features of malignancy in 60% cases with maximum number of cases were in age group 41 to 50 years followed by 51- 60 yrs.

Table 3 shows total 3136 cases of Pap smear screening, out of which only 0.1% cases show malignant features, 1.5% cases of dysplasia and 98.4% cases were benign category.

Table 4 shows the trends of prevalence of the different lesions of cervix in different 7 age groups. The youngest patients were at age of 16 years and the oldest was 76years. In cervical biopsy of 804 cases we have 24.13% cases show features of malignancy and 5.85% cases show dysplastic changes.

Maximum cases of the carcinoma cervix were observed in the age group of 41-50 years and a

marked declining trend was observed in the higher age groups.

From our study of breast cytology and histopathology data as well as cervix Pap smear and biopsy we have concluded that total percentage of breast malignancy is significantly higher as compared to cervix malignancy in all received samples types.

Table 3: Pap smear screening data

Pap Data Category	Total No of patients (%)
Benign	3086(98.4)
Malignant	3(0.1)
Dysplasia	47(1.5)
Total	3136

Table: 4 Cervix histopathology data

Cervical Histo- pathology data	Age							Total (%)
	11-20.	21-30	31-40	41-50	51-60	61-70	> 70	
Benign	2	71	218	167	74	27	4	563(70.02)
Malignant	0	10	56	63	38	22	5	194(24.13)
Dysplasia	0	5	15	10	12	5	0	47(5.85)
Total	2	86	289	240	124	54	9	804(100)

DISCUSSION

In general, prior to year 1990, cervix was the leading site of cancer among all the registries. Registries mainly assess the shift in trend from cervix to breast cancer as the leading site of the cancer. The earliest change in the ratio from below one to above one, for a given year, was taken as the sign of shift in the trend of cancer among the Indian women.²A large number of factors are identified as risk factors for breast cancer such as age, age at menarche, marital status, late age at first pregnancy (greater than 30 years), single child, late age at menopause, place of residence (rural/urban), religion and family history of breast cancer etc are some of them. A high fat diet is also identified as a risk factor. Physical activity is found to be protective for breast cancer. Regular breast self examination by women themselves is a very good way of detecting breast cancer in early stages. Detecting a cancer at an early stage can improve the cure rate from breast cancer. In urban women breast cancer cases increasing due to gradual change in life style of women and easy availability of various diagnostic facilities. In rural areas and in women with low socio economic class likely to present with disease in advance stage due to poorer screening rate.

Early age at first intercourse, multiple sexual partners, poor sexual hygiene, repeated child birth etc are some of the reproductive risk factors for cervical cancers. Improvement in the living standard of women has resulted in a reduction in the incidence of cervical cancer. Regular cervical cytology examination (Pap smear) by all women who have initiated sexual activity can prevent the occurrence of cervical cancer. However, there are limitations for cytology based cervical cancer screening in India.¹⁴Breast cancer typically produces no symptoms when the tumor is small and most treatable. Therefore, it is important for women to follow recommended screening guidelines to detect breast cancer at an early stage.¹⁵

American Cancer Society Guidelines recommends these screening guidelines for most adults for the Early Detection of Breast cancer:

- 1] Yearly mammograms are recommended starting at age 40 and continuing for as long as a woman is in good health
- 2] Clinical breast examination (CBE) about every 3 years for women in their 20s and 30s and every year for women 40 and over

3] Women should know how their breasts normally look and feel and report any breast change promptly to their health care provider. Breast self-exam (BSE) is an option for women starting in their 20s.

4] Some women – because of their family history, a genetic tendency, or certain other factors – should be screened with MRI in addition to mammograms.

Screening mammography provides the primary means of reducing breast cancer mortality. Clinical breast examination (CBE) and breast self-examination (BSE) may be complementary screening modalities enabling palpation of interval cancers and detection of tumors not visualized by mammography.¹²Routine mammography screening can reduce breast cancer mortality rates in women aged 55-74 years.¹⁶

Ole Olsen and Peter Gøtzsche's review concluded that screening mammography programmes do not reduce breast cancer mortality and lead to more aggressive treatment. In his Oct 20 Commentary, Richard Horton agrees with their conclusion that screening mammography programmes are not therefore justified. These conclusions could have a major effect on women's health care and deserve careful scrutiny.^{17, 18}

In reply to an article on mammograms by Ole Olsen and Peter Gøtzsche the people from the National Research Centre for women and families- Jae Hong Lee and Diana Zuckerman conveyed that “if screening mammographic programs are not justified as it leads to more aggressive treatment” is true, it is a condemnation of treatment practices, not of screening. They stress more on encouraging better education of patients and physicians to lower the prevalence of unnecessarily aggressive treatment. The best solution to improving treatment is better technology, education, and training, along with improved communication between physicians and patients. These strategies deserve more attention from the medical community before a decision is made to eliminate screening programme that lead to earlier diagnoses.¹³

The prestigious Cochrane Institute has issued a review of the benefits of breast cancer screening.

The review concludes that there is no evidence that mass screening mammography reduces overall mortality among women.¹⁹ It would appear that the support for mass screening (mammography) for breast cancer is waning. Women, clinicians and policy makers should consider these findings carefully when they decide whether or not to attend or support screening programs.²⁰

Stephen and Laszlo et al found significant reductions in breast carcinoma mortality from incident tumors in the screening epochs compared with the prescreening epoch based on an analysis of 2044 breast carcinoma deaths reported over several decades in 7 counties. In women who actually underwent screening, the mortality reduction was approximately 45%. Over detection and overtreatment are important but underappreciated harms of screening.^{21,22} Increased numbers of breast cancers are diagnosed at all ages in women who choose screening. Some of this is due to increased detection of DCIS by screening. DCIS is a non-invasive form of cancer that may or may not progress to invasive cancer. It is associated with low mortality after surgical treatment and the value of its early detection and treatment is uncertain.²³

In our two years study of surgical pathology samples of breast and cervix, we have concluded that in terms of percentage of malignancy, breast malignancy is significantly higher in compared to cervix malignancy. This shows sharp increase in incidence of breast malignancy. The maximum numbers of malignancy in both the groups were in age group of 41 to 50 years. The second leading peak is in the earlier decade in cervix cases while in breast it was in older decade age group. This difference may be due to regular Pap smear test as a screening tool for detecting cervical malignancy in all patients visiting gynecology department of our institute. Here after getting this study result we want to emphasize on screening for breast malignancy along with Pap smear. So that we can detect breast malignancy in earlier stage and the prognosis of patient can be improved. In study of pap smear screening for cervix malignancy done by Fadwa J Altaf also shows that out of total 5123 cases, 95.26% benign conditions, 4.56% dysplasia and 0.18% of malignant cases. The similar study done by Jamal et al in total 22089 case show 98.37% benign condition, dysplasia 1.35%, and malignant 0.28% cases. The findings are similar to our study.^{24, 25}

India is at a crossroads and needs urgent steps to introduce appropriate screening methods to reduce breast cancer presentations in late stages and reduce mortality. There are a number of barriers to breast cancer screening in India. Myths about breast cancer, such as infection and other causes

result in a delay in seeking medical attention. There is a lack of funds, knowledge and expertise. Lack of health care facilities, long distances, lack of transportation combined with poor income leads to under diagnosis. There is perception that increased breast cancer incidence in India is mainly due to lifestyle changes in an urban population, but the incidence of breast cancer in rural populations may also be on the rise with improved education.²⁶

As per the proverb, "prevention is better than cure" the prevention strategies are crucial in cancer eradication. This approach offers a great public health concern and inexpensive long term method of cancer control. National Cancer Control Programme (started in 1975- 1976 in India) led to the development of Regional Cancer Centers (RCCs), a number of oncology wings in Medical Colleges. National Cancer Control Program strongly advocates for cancer screening camps at the district level. There are limited funds allocated to conduct such camps. Screening camps are mostly done in the cities by Non-Governmental Agencies. There are currently no guidelines for the optimal breast cancer screening methods in India. A number of experts indicate that mammogram is expensive and not practical for the Indian population and that education and awareness may be a first step in the right direction.

India is experiencing an unprecedented rise in the number of breast cancer cases across all sections of society, as are also other countries. There is no way we can prevent breast cancer, but we can definitely detect it early and treat adequately. Achieving this is a society will lead to better long term survival as well as a better quality of life.²⁷

There need to be strategic guidelines as to who should really be screened. There is a need to define high risk population which should be subjected to screening rather than doing a mass screening starting at the age of 40. The mass screening programs are sustainable in the west because of the structured health care system, this seems to be far-fetched in India. Especially in India screening of high risk population at a younger age should be the plan. This shall reduce the cost of screening programs and also organize and target the case finding.

CONCLUSION

Assisted detection [FNAC, mammography, clinical breast examination, and self breast examination] increases chances of tumor detection early, and tumor free survival duration and decrease recurrence rate.

Carcinoma of the cervix being the second most carcinoma in female after breast carcinoma is considered a real public health issue and screening programs are going on for its screening but at present we don't have any focus on screening of breast cancer. It needs extensive awareness in the public through media, newspaper, medical bulletin and screening program should be extended in selective cases if not mass screening.

In essence the decision to be screened is a gamble; there is only a small chance of benefit but the stakes are high. Some women will be happy to choose the gamble even though they may experience anxiety, inconvenience, and physical adverse effects; other women will not.

REFERENCES:

- National Cancer Registry Programme - Consolidated Report of the Population Based Cancer Registries - (2001-2004)-December-2006.
- Ramnath Takiar, Atul Srivastav: Time Trends in Breast and Cervix Cancer of Women in India - 1990-2003; Asian Pacific J Cancer Prev: 9: 777-780.
- Yeole BB, Kurkure AP: An epidemiological assessment of increasing incidence and trends in breast cancer in Mumbai and other sites in India, during the last two decades; Asian Pac J Cancer Prev. 2003; 4 (1): 51 - 56.
- Chopra R: The Indian scene; J Clin Oncol 2001; 19 (18 Suppl): 106 - 111.
- Mittra I: Screening for breast cancer: is it globally applicable? Nat Clin Pract Oncol. 2008; 5 (2): 60 - 61.
- Daniel S. May, Nancy C. Lee, Marion R. Nadel, Rosemarie M. Henson, Daniel S. Miller: The National Breast and Cervical Cancer Early Detection Program: Report on the First 4 Years of Mammography Provided to Medically Under-served Women; AJR 1998; 170:97-104.
- IARC Working Group on the Evaluation of Cancer-Preventive Strategies. IARC Handbooks of Cancer Prevention: Breast Cancer Screening. Lyon, France: IARC Scientific Publications; 2002.
- Saxena S, Rekhi B, Bansal A: Clinico-morphological patterns of breast cancer including family history in a New Delhi hospital, India - a cross-sectional study. World J Surg Oncol 2005; 3: 67-75.
- Claus EB, Rish N, Thomson WD: Age at onset as an indicator of familial risk of breast cancer. Am J Epidemiol 1990; 131: 961-972.
- Agarwal G, Ramakant P: Breast cancer care in India: the current scenario and the challenges for the future; Breast Care 2008; 3: 21-27.
- Sue Moss: Screening for Breast Cancer in India - Is It An Appropriate Strategy? JNCI September 17, 2008; 100 (18): 1270-1271.
- Ruby T. Senie, Martin Lesser, David W. Kinne, Paul Peter Rosen: Method of Tumor Detection Influences Disease-Free Survival of Women with Breast Carcinoma 1994; 73:1666-1672.
- Jae Hong Lee, Diana Zuckerman: Screening for Breast Cancer with Mammography. Letter in The Lancet, January 2002; National Research Center for Women and Families.
- Verdecchia A, Angelis GD, Capocaccia R: Estimation and projections of cancer prevalence from cancer registry data: statistics in medicine; Stat Med 2002; 21: 3511-3526.
- Cancer Facts & Figures 2013
- Laurie Barclay: More Evidence to Justify Mammography Screening for Breast Cancer Lancet. 2003; 361:1405-1417.
- Gøtzsche PC, Olsen O: Is screening for breast cancer with mammography justifiable? Lancet 2000; 355: 129-134.
- Horton R: Screening mammography--an overview revisited; Lancet 2001; 358: 1284-1285.
- www.cochranelibrary.net.
- International health news database- 2001
- Stephen W. Duffy, Laszlo Tabar, Hsiu-Hsi Chen, Marit Holmqvist, Ming-Fang Yen, Shahim Abdsalah et al: The Impact of Organized Mammography Service Screening on Breast Carcinoma Mortality in Seven Swedish Counties; Cancer 2002; 95:458-469.
- Schwartz LM, Woloshin S, Fowler FJ, Welch HG: Enthusiasm for cancer screening in the United States; JAMA 2004; 291:71-78.
- Ernster VL, Ballard-Barbash R, Barlow WE, Zheng Y, Weaver D, Cutter G: Detection of ductal carcinoma in situ in women undergoing screening mammography; J Natl Cancer Inst 2002; 94:1546-1554.
- Fadwa J Altaf: Cervical cancer screening with pattern of pap smear - review of multicentre study; Saudi Med J 2006; 27(10): 1498-1502.
- Jamal AA, Al Maghrabi JA: Profile of pap smear cytology in the western region of Saudi Arabia; Saudi Med J 2003; 24:1225-1229.
- Swaminathan R, Selvakumaran R, Vinodha J: Education and cancer incidence in a rural population in south India. Cancer Epidemiol 2009; 33, 89-93.
- Breast cancer in India - Global Comparison