DISCUSSION

The present 'retrospective study' comprised of 540 cases of "Breast diseases", carried out in the Department of Pathology, M.L.B. Medical College, Jhansi, over a period of 15 years from 1982 - 1996.

In the present study, majority of cases (62.40%) belonged to the rural population, while about 37.60% cases belonged to the urban area. This is because of the larger number of villages surrounding the city whose population is much more than the population of the city. This kind of analytical data are not available for comparative studies, especially in Bundelkhand region of U.P.

Although, breast diseases are most commonly found in females, but may encountered in males too. The present study shows that females predominated over males, with an overall female to male ratio 11.27 : 1. This kind of analytical data are not available for comparative studies.

In our study, maximum cases of breast diseases were observed in Hindus (91.66%), followed by Muslims (6.49%). In Sikh's, overall incidence is 1.11%, while in Christians only 0.74%. These findings are in accordance with the findings of Paymaster (1964, 1972) and Pal et al (1980). In India, frequency rate varies in different parts of the country.
As regards the presenting symptoms, breast lump was the most common symptom encountered in 90.37% cases, followed by pain, the second common symptom observed in 68.51% cases. Nipple discharge, itching and nipple retraction seen in 3.70% cases while pain in arm and chest was observed in 1.48% cases. Skin ulceration and fungation along with Ranc 'd' orange were seen in 0.55% and 0.18% cases respectively. The first two symptoms are in accordance with the study of Devitt et al (1983 & 1986).

In present study, more than 71% cases of breast diseases were observed in age range 11 - 40 years, i.e. comparatively in younger age group. Approximately thirteen percent cases and 12.6% cases belongs to 51-60 years and 41-50 years age group respectively, while 2.03% cases were encountered in 61-70 years and only 0.55% cases observed in 71-80 years. Hence, the disease of breast are the diseases of younger age group with a decline after 60 years of age. Sharma et al (1990) has also reported the similar findings, but it does not correlate with study of Paymaster (1972) in Bombay, where the decline in incidence was observed after 50 years of age.

In our study, total of 44 cases of physiological conditions with overall incidence approximately 8.15% were observed. Among these, 28 cases (63.63%) of Gynaecomastia in male breast, with maximum incidence in 11-20 years (18 cases), followed by 21-30 years age range (6 cases).
Whereas, Williams (1963) reported 40% incidence in an autopsy study, while Liechty et al (1967) reported 20% only. In pubertal male, it is often unilateral typically occurs between 12-15 years of age (Braunstein, 1993). The incidence is variable from one geographic region to other, the lesion in some cases due to altered oestrogen and progesterone levels.

Amongst hyperplasias, which are also hormonal dependent, physiological hyperplasia shows 8 cases (18.18%), of which 62.5% incidence were in 21-30 years and 25% in age range 11-20 years. Pubertal hyperplasia shows all 3 cases in age range 11-20 years and lactational hyperplasia observed in 3 cases with maximum incidence in 21-30 years age group.

No other data is available for comparison of incidence of the physiological conditions, especially in Bundelkhand region.

In the present study, 58 cases (10.75%) of inflammatory conditions were encountered. Maximum number of Granulomatous mastitis (tubercular mastitis) 21 cases (5.07%) were observed, with maximum incidence in 21-30 years age range, followed by 31-40 years, 11-20 years and 41-50 years, with least incidence in 51-60 years i.e. 4.76% only. Although tubercular mastitis rarely involves the breast and its incidence has declined in recent years. Ikard and Parkins (1977) reported the incidence only 0.025% of cases of surgically treated as breast disease in Nash Ville, U.S., over a period of 20 years. On the other hand, non-granulomatous mastitis were reported with only one case in age range 21-30 years, a rare entity, in present study.
The plasma cell mastitis were second common entity among inflammatory conditions, showing overall incidence 2.03%, with a maximum incidence 45.45% in 31-40 years age group in our study, although it is a disease of relatively older age group as reported by some workers. In present study, lowest incidence were observed in 21-30 years age range. Cromer and Dockerty (1941) reported only 24 cases in Mayo Clinic over a period of 30 years, hence it was a rare disease.

In our study chronic cystic mastitis shows its incidence approximately 1.52% with a maximum incidence in age range 31-40 years, than in 21-30 years age. Frantz et al (1951) reported cyst in 53% out of 225 autopsies without history of breast disease whereas Haagensen (1956) reported the incidence 1 in 20 cases during a study of 10 years.

In our study, incidence of chronic mastitis were 1.22% with maximum incidence in 21-30 years age range. This may have develop insidiously without an obvious acute stage or as sequale of untreated acute infection of breast.

As regards chronic non-specific mastitis, the reported overall incidence in our study were only 0.91%, with maximum cases in 21-30 years and 31-40 years age respectively, with lowest incidence in 41-50 years. This was an uncommon condition as described by Kessler and Wolloh (1977) and Fletcher et al (1982) said it occurs within 6 years of pregnancy.
In present study the Acute mastitis or lactational mastitis were showing its overall incidence approximately 5.07% with a maximum incidence in younger females. Boyd (1947) reported that acute inflammation of the breast were uncommon condition, but such a higher incidence i.e. more than 50% of all inflammatory conditions in our study may be due to the poor hygienic conditions and illiteracy among females, as approximately 62.40% cases were belong to rural areas in our study.

Galactoceole as reported by various workers (Geschickter, 1945; Symmers, 1970) an infrequent condition. In present study, only one case was reported in age group 21-30 years showing its incidence only 0.10%.

An attempt has been made to analyse "Breast diseases" according to W.H.O. Classification 1982 (Assopardi et al, 1982). W.H.O. has classified the diseases of breast mainly into Benign epithelial tumours, Malignant epithelial tumours, Tumour like lesions and mixed connective tissue and epithelial tumours, mammary dysplasia and fibrocystic diseases.

In our study, among Benign epithelial tumours most commonly encountered tumour was fibroadenoma constituting approximately 31.66%, whereas, Boyd (1955) reported only 15%; Ellis et al (1984) & Haagensen (1986) reported the incidence of multiple fibroadenoma ranging between 1.4% to 20.0%. Phyllodes tumour shows its incidence 0.37%. Treves (1964), Aurora & Gupta (1967), Chandra et al (1969) reported its
incidence from 2 - 15% of all the benign lesions of the breast. Haagensen (1971) observed 2% to 3% only. Although the incidence of malignancy and metastasis has been reported which vary from 0.5 to 10%, Kessinger et al (1972), Lindquist et al (1982) but in our study no such incidence of malignant transformation or cases were observed. Our study was showing maximum incidence of Fibroadenoma in age group 11-30 years i.e. a disease of relatively younger age group.

As regards intraductal papilloma, only 0.37% cases were found in present study which does not correlate with findings of Kremer and Rush (1973) who reported its incidence approximately 21%, in patients ≥70 years of age, however, it is a tumour of younger age group i.e. its peak incidence were observed in 25-35 years of age (Murad et al, 1981), which correlate with our study, as our study shows its maximum incidence in age group 21-30 years.

In present study, the duct ectasia, a tumour like lesion shows its incidence only 0.37% and was reported one case each in relatively younger age group i.e. 31-40 years and 41-50 years. Frantz et al (1951) reported its incidence of 24% in an autopsy study of supposedly normal female breast, which increased upto 46% in patients ≥60 years of age as literature shows its a disease of an older age group with peak incidence in 6th and 7th decade of life. Mostly patients presents with subareolar mass or nipple discharge.
The mammary dysplasia and fibrocystic disease were found in 15.92% cases. The incidence of fibrocystic disease is variable as it has been given by various workers. Haagensen (1971) reported 10% of adult women in United States have symptomatic fibrocystic disease, Symmers (1974) reported 73% and Ellis et al (1984) reported 40% incidence. The relative incidence of these changes differ among population group.

As it is the disease of younger age group with a peak incidence in perimenopausal period and regress thereafter (Bartow et al, 1987). In our study too, 756% incidence observed in 21-30 years age range while 23.07% in 31-40 years with a lowest 1.53% incidence observed in 750 years of age.

As regards presenting symptoms, especially among carcinoma breast in present study, the most common presenting symptom was lump in breast (31.11%), with second most common symptom pain in breast (25.30%), Nipple discharge was seen in only 2.03% while Nipple retraction and pain in chest & arm in 5 cases (0.92%). Fungation and Paeu 'd' orange was observed only in 1 case (0.18%) each, respectively.

In the present study, the overall incidence of carcinoma breast was observed approximately 175 (32.40%) cases. Majority of them were in 41-60 years of age range. Among the overall incidence of carcinoma breast in present study, the incidence of carcinoma breast in female were observed approximately 29.45%, while in males 2.95%. The incidence
of carcinoma female breast just approaching to the incidence studied by Kirby et al (1994), reported between 32% to 35% of all female cancer in U.S.A. This slightly lower incidence merely because, in our study we considered all the diseases of breast including carcinoma breast.

As the incidence of breast cancer varies greatly among geographic regions, the incidence of carcinoma breast in present study does not correlate with the findings of cancer profile of India (1983), who reported the incidence of breast cancer about 7.79% in Uttar Pradesh, neither with studies of Chandra (1979), Jussawala and Jain (1971) and Sharma et al (1992) who reported its incidence 18% and 19.40% of all female cancer in Greater Bombay and Eastern Rajasthan respectively. This difference were because of the consideration of all female cancers in their studies, whereas we considered only breast diseases including benign and malignant tumours along with tumour like lesions, in our study.

The incidence of carcinoma male breast in present study observed about 2.95%. These findings does not correlate with the incidence reported by Donegan et al (1973) and Haagensen (1986) who reported carcinoma male breast was 1% of the incidence of all breast cancer in women.

In our study, female to male ratio of carcinoma breast were 9.93:1, in contrast to overall female to male ratio of Breast Diseases which was 11.27 : 1. No such data were available for comparative study, especially in Bundelkhand region of Uttar Pradesh.
As regards malignant epithelial tumours, they were 31.66\% in present study, of which "non-invasive intraductal comedo carcinoma" shows its overall incidence 2.22\%, of which 50\% were in age group 31-40 years. Page et al (1987) and Silverstein et al (1991) reported its incidence 3\% to 5\% of all breast carcinomas, though the incidence may vary from one clinical setting to other. The incidence of "lobular carcinoma in situ" were 0.18\% and were encountered in 41-50 years of age range. Haagensen et al (1978) was reported its incidence 1\% to 3\% of all breast carcinomas and 10\% to 30\% of solitary non-invasive carcinomas as an incidental finding in pre-menopausal females.

The overall incidence of "invasive carcinoma" breast were 29.26\%, although they accounts for 90\% of all breast cancer. In females, they were 26.30\%, the invasive duct adenocarcinoma was the most common (19.81\%) histopathological type of carcinoma showing highest incidence in age group 51-60 years, 49 cases (45.81\%) followed by 31 cases (28.97\%) in 41-50 years age range with lowest incidence in 61-70 years of age group i.e. 1.86\%. The National Surgical Adjuvant Breast Project (NSABP) 1975, reported its incidence about 52.6\% of all female cancer.

The Medullary carcinoma were the next common histopathological type of carcinoma breast with an overall incidence of 1.48\%, of which 1.11\% observed in females, whereas only 0.37\% in male breast. This does not correlate with the incidence of NSABP (1975), who reported 6.2\% of all invasive
breast cancer. In females, maximum of 3 cases (50%) were encountered in age range 51-60 years, while lowest incidence observed in age group 31-40 years. In male breast, both the cases were also observed in 51-60 years age range. No such data available for comparative study.

The incidence of Carcinoma with metaplasia were 0.93%, out of which incidence of spindle cell carcinoma were 0.18% and carcinoma with squamous metaplasia constitute 0.75% in our study. Although, these are rare type of carcinoma breast with an overall incidence \( \leq 1\% \) of all breast cancer (Wargotz and Norris, 1990). Our findings were consistent with the aforesaid incidence of Wargotz & Norris.

In our study, carcinoma with metaplasia shows highest incidence in age group 51-60 years, whereas lowest incidence in age range 41-50 years.

In the present study, Invasive lobular carcinoma, Mucinous carcinoma and Papillary carcinoma, each showing 0.55% incidence in female breast. Simpson and Page (1992) reported 15% incidence of invasive lobular carcinoma, which does not correlate with our study, showing maximum incidence in 41-50 years.

As regards "Mucinous carcinoma", our incidence does not correlate with incidence (2% to 3%) of all carcinomas reported by Page et al (1991), but it correlate with Rosen et al (1985) findings who reported that its a carcinoma of
relatively older age group, as in our study, maximum incidence reported in age range 51-60 years, prognosis is relatively better.

The Papillary carcinoma incidence were 0.3% - 3% as reported by Haagensen (1971) and National Surgical Adjuvant Breast Project (1975), present in 7th decade. This incidence was in accordance of present study whereas age range does not, as our study show that maximum incidence were in relatively younger age range, 31-40 years and lowest in 21-30 years.

The incidence of Paget's disease of Nipple in present study were 0.75% with maximum incidence in 41-50 years of age, whereas Dockerty & Harrington (1951), Reddy & Reddy (1958), and N.S.A.B.P. (1975) reported 0.3% to 3% which coincides with our study. This disease has a good prognosis with maximum incidence reported between 50 to 60 years of age.

No other variant of invasive breast cancer were observed in present study.

The "Miscellaneous tumours" group shows 0.15% incidence of soft tissue "fibrosarcoma" of breast in age group 21-30 years. These findings are in accordance with study of Jones et al (1992) who reported its incidence ≤ 1%.

Among "unclassified group", 0.55% incidence of Metastatic undifferentiated carcinoma breast were observed with maximum incidence in 51-60 years age range. Nearly every type of cancer metastasize to the breast at one time
or another, though collectively quite rare. When it occurs, usually late in the clinical course of widely disseminated disease (Nielsen et al, 1981).

Lung carcinomas and Malignant melanoma are the most common solid cancer that metastasize to the breast (McCrea et al, 1983).

Breast carcinoma among males, in present study shows their overall incidence about 2.95% (16 cases). Out of these most common histopathological type of breast carcinoma were invasive duct adenocarcinoma with incidence 2.03% and shows highest incidence in 41-50 years age group, followed by 31-40 years age range and only one case each in age range 51-60 years & 71-80 years respectively.

In male breast, Scirrhous type carcinoma showing 0.55% incidence with maximum cases in 51-60 years, whereas medullary carcinoma show maximum of 2 cases in age group 51-60 years. Thus overall age-wise incidence reported maximally in age range 51-60 years.

Our findings about carcinoma male breast does not correlate with study of Donagan et al (1973) and Haagensen (1986) who reported $\leq 1\%$ of the incidence in women. The highest incidence were reported by Kirby et al (1994) among North Americans & British male with a peak incidence in between 60-69 years. Whereas our study shows only three cases and only one case in age range 61-70 years and 71-80 years respectively.
Among the carcinoma breast, the most frequent histopathological type of carcinoma were Invasive Ductal carcinoma with productive fibrosis 78%, followed by Lobular carcinoma, Medullary carcinoma, Comedo carcinoma, Colloid and Papillary carcinoma shows their incidence 9%, 4%, 5%, 3% and 1% respectively (Mc Divitt et al, 1968). In our study too, the most frequently encountered histological type of breast carcinoma were invasive ductal adenocarcinoma with scirrhous carcinoma whereas least common were papillary carcinoma constituting less than 1%, while incidence of other carcinoma reported by Mc Divitt et al (1968) does not correlate with our findings.

In present study, Malignant tumours comprising total of 173 cases, out of these, 18 (10.4%) cases shows local metastasis to deeper structure, muscle with extension to line of excision, Whereas 35 (20.23%) cases showing Distant metastasis to regional axillary lymph nodes, whereas Wilson et al (1984) reported a large series of cases of breast cancer and said 51.5% were localised to the breast alone, 38.5% showed lymph node metastasis or invasion of local tissue outside the breast and only 7.5% were showing distant metastases at the time of diagnosis. These findings does not correlate with our findings. However, the findings of Wilson et al (1984) was no doubt, was related to modern methods of endocrine therapy and chemotherapy.

Only one case shows invasion of blood vessels and lymphatics. Freidle et al (1974) said that such cases shows
poor prognosis as spread to distant parts through the bloodstream is common in these tumours.

There seems to be an upward trend in the incidence of breast diseases, particularly carcinoma breast in females, but it is not clear whether this represents a true increase or merely reflects better diagnostic modalities and greater interest in this type of tumours or an increasing awareness of peoples regarding their health.

In present study, an attempt has been made to analyse breast diseases including tumours using mainly conventional methods and special staining wherever necessary.

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