SHORT COMMUNICATION

Epidemiology of young breast cancer patients at Gujranwala: A single institution based study

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Abstract

The objective of this study was to illustrate the statistical and medical characteristics of females younger than 40 years presenting with breast cancer at GINUM. A descriptive case series in which 235 patients who fulfilled the inclusion and exclusion criteria were included. The majority of the patients had advanced disease at presentation. Family history was positive in 59 (25.11%) patients. Patients having grade III and II disease were 142(60.42%) and 89 (37.87%) respectively. Thirteen (5.5%) patients had Right-sided breast cancers in our series. No significant association of null parity with breast cancer was found. Receptor status studies revealed only 2.55% increased oestrogen receptor/progesterone receptor (ER/PR) positive patients as compared to oestrogen receptor/progesterone receptor (ER/PR) negative patients. Our population shares slightly different features as compared to Western population because there were slightly increased right-sided tumours and majority of our patients were parous.

Keywords: breast cancer, young patients, epidemiology

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Introduction

Breast cancer is the most frequently diagnosed cancer and leading cause of cancer death in females worldwide, accounting for 23% (1.38million) of total new cancer cases and 14% (458,400) of total cancer deaths in 2008.[1] In the US, breast cancer is the most common cancer and second major cause of cancer deaths in women. The diagnosis of breast cancer increased in the 1990s but it has decreased since 2000 and the overall breast cancer deaths decreased over the past 20 years.[2] According to the US breast cancer statistics, about one in eight American women will develop invasive breast cancer during her lifetime. The incidence of breast cancer is more in white American women as compared to African-American women but in women below 45 years of age, the incidence of breast cancer is higher in African-American women. The incidence of breast cancer in women almost doubles if there is a family history of breast cancer in first degree relatives.[3] According to Dr Jo Anne, a visiting expert from the US National Cancer Institute, in India one in 22 women is likely to develop breast cancer and in Pakistan this risk is one in nine women. Local estimates in Pakistan reveal that about 90,000 cases of breast cancer are diagnosed every year resulting in approximately 40,000 deaths annually. In Pakistan, breast cancer is most commonly detected at stage III or stage IV.[4] The age-standardised rate (ASR) of breast cancer in Karachi, is 51.7 per 100,000 per year and is the highest ASR reported for any Asian population, excluding Israel.[5] Previously it was assumed that breast cancer mainly affects older women, but nowadays it is much more prevalent among the younger population. As the incidence of breast cancer is increasing day by day in the younger population, and epidemiological studies have extensively reported this in literature. We conducted this study to determine the influence of several factors associated with this disease. The word "young" was previously used for patients with the age range between 30 and 40 years. But we focussed on patients younger than 40 years. It is already known that in the younger population, breast cancer exhibits more aggressive behaviour, including presentation at a later stage, more poorly differentiated tumours, positive lymph nodal status, high proliferation index, oestrogen receptor/progesterone receptor (ER/PR) negativity and higher human epidermal growth factor (Her 2 neu receptors).[6] The rationale of this study was to find the association of several risk factors in young women (aged <40). We present here the epidemiological case-series which measures the association of tumour stage, grade, family history, obesity (BMI), parity, receptor status in young breast cancer patients aged <40 years.

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Patients, Methods and Results.

A retrospective case series was done in 2018 at GINUM. The medical records of patients registered at GINUM were analysed.. The total number of patients younger than 40 years in the period, January 2015 to December 2017 was 276. Information was collected of only those patients who completed their treatment at GINUM. Thus, data of 235 patients was collected. Rest of the 41 patients were either lost to follow up after the first visit or started their treatment at some other centre. The inclusion criteria were: 1) newly diagnosed breast cancer patients <40 years of age, 2) all types of invasive carcinomas. Exclusion criteria were:

1) male breast cancer, 2) in situ carcinomas and 3) malignant phyllodes. Information was obtained on variables which included the medical characteristics such as age at disease, explicit symptoms, patients' past medical records, tumour stage and hormone receptor status (ER, PR). The demographic characteristics included parity, breastfeeding, BMI (weight in kg/ height in m^2), and family history of cancer. The WHO criteria[7] used for classifying patients as being underweight, normal, obese and overweight is as; those having BMI less than or equal to 18.5 were underweight, BMI 18.5-22.9 were normal. Categorically overweight is further grouped into 3 classes. (i) BMI 23-25 were overweight-at risk (ii) BMI 25-30 were overweight-moderately obese (iii) BMI >30 were overweight- severely obese. Stage grouping was done according to UICC TNM Classification.[8,9] The hormone receptor status was categorised into four groups. In reference to the analysis performed, patients' family history of tumour was termed positive if any blood relative had malignancy, regardless of the severity of the tumour condition. The Institutional Review Board was consulted for exemption from full review, as the analysis was retrospective and data was compiled without any individual identifiers.

Patients with stage III disease were 113 (48.08%) [IIIA = 47 (20%), IIIB = 53 (22.55%), IIIC = 13(5.53%)], while those with stage IV, II and I were 70 (29.7%), 48 (20.4%) and 4(1.7%) respectively. The mean age at presentation was 33.3 ± 4.303 years with range of 20-39 years. The BMI of the patients showed that most of them were overweight (at moderate and severe risk) while normal weight was found in 36 (15.3%) and underweight in 9 (3.9%) patients only. However, the percentage of overweight patients at moderate and severe risk was 36.2% and 34.04% respectively. The family history of malignancy was positive in 59(25.11%). However, patients with family history of breast cancer alone were 33 (14.04%),142 (60.42%) presented with poorly differentiated grade and 89 (37.87%) with moderately differentiated tumour. However, well-differentiated tumours were found in only four patients. There were ten (4.25%) patients who had bilateral disease. Similarly, we could not find a significant association of nulliparity as in the study population with 194 (82.55%) patients being parous and only 21 (8.51 %) patients were nulliparous. Altogether, 20 patients were unmarried (virgin). Patients presenting with ER/PR negative disease were 91 (38.72 %), while patients with receptor positive disease (ER/PR = +VE, ER +VE/PR –VE, ER –VE/PR +VE) were 97 (41.27%). Twenty percent patients had unknown receptor status which could be attributed to poverty.

Table-1: Statistics of Ca Breast in GINUM.

Parameter			+ve (percentage)
Yearly Statistics	<40years	2015	91 (20.77%)
		2016	92 (17.36%)
		2017	93(15.32%)
	Total no of Ca breast	2015	438
		2016	530
		2017	607
Family History			59 (25.11%)
Parity			194 (82.55%)
Laterality	Right sided		119 (50.64%)
	Left sided		106 (45.11%)
	Bilateral		10 (4.25%)
BMI	Underweight		9 (3.83%)
	Normal		36 (15.3%)
	Overweight-at risk		25 (10.6%)
	overweight-moderately obese		85 (36.2%)
	overweight - severely obese		80 (34.04%)

Table-2: Parametersof CA Breast Patients in GINUM.

Parameter	I n (%)	II n (%)	III n (%)	IV n (%)
Stage	4 (1.70%)	48 (20.42%)	113 (48.08%)	70 (29.78%)
Grade	4 (1.70%)	89 (37.87%)	142 (60.42%)	-

Conclusion

Patient's age at the diagnosis of breast cancer remains a significant factor for prognosis and disease management. Although, the prevalence of breast cancer in women below 40 years of age is considerably low in the population of women suffering from breast cancer, it imposes a considerable burden on the society. This study observed a higher grade and advanced stage presentation in our population. It was also observed that the study patients were parous, had slightly increased right-sided tumours and showed a higher frequency of familial breast cancer (14.04%). Early diagnosis with efficient screening and awareness programmes can possibly provide a better prognosis.

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