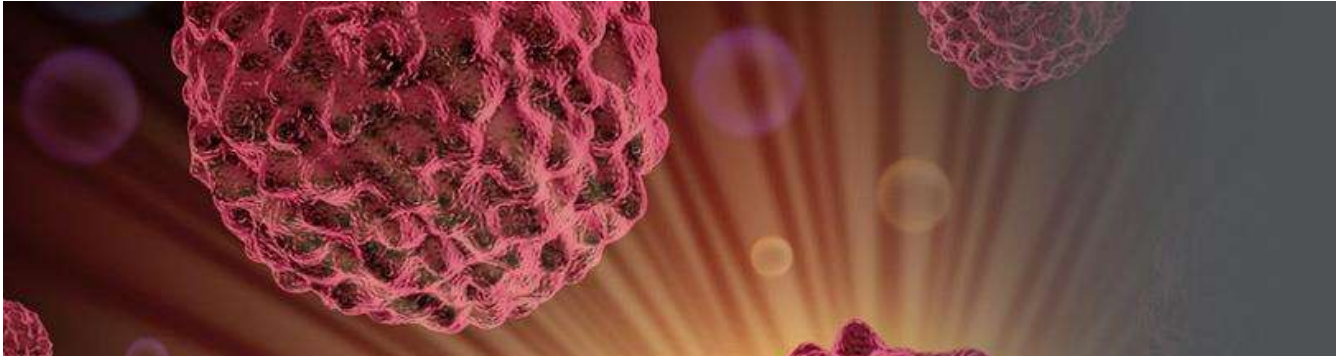


Ki67 Index in Breast Cancer: Correlation with Other Prognostic Markers in Omani Patients.



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I. AIM

Our aim was to evaluate the routine use and value of Ki-67 as a prognostic marker, and to analyze the associations between Ki-67 and common histopathological parameters in the routine clinical setting.

II. METHODS

The data of Omani women diagnosed with breast cancer in our institute from January 2015 to December 2016 was retrospectively collected from the electronic patient's file, and analyzed using Microsoft Excell Sheet. Data included patient's demographics, tumor characteristics and Ki-67 values. Cut off of 15% and below was taken as low Ki-67 values. The clinicopathological parameters was correlated with Ki-67 value.

III. RESULTS

Among 166 patients included in the study, mean age of the patients was 49 years (26-83). Mean Ki67 index was 34.6 % (1-90). Detailed tumor characteristics with mean Ki67 index are presented in **Table 1**.

Table 1. Patients characteristics (n=166).

Patients characteristics	No.	%	Mean	Min-Max
Age			49	26-83
≤ 40	53	32 %		
> 40	113	68%		
Tumor type				
IDC	152	91.5 %		
Others	14	8.5 %		
Stage	166			I-IV
I	21	12.6 %		
II	61	36.7 %		
III	65	39 %		
IV	19	11.4 %		
ER				
positive	110	66.2 %		
negative	56	33.8 %		
PR				
positive	94	56.6%		
negative	72	43.4 %		
Her-2				
positive	62	37.3 %		
negative	104	62.7 %		
Ki-67	166		34.6	1-90
≤ 15	47	28.4 %	8.9	1-15
>15	119	71.6%	44.8	16-90

Infiltrating ductal carcinoma was the most common histological subtype, comprising 152/166 cases (91.5 %), followed by infiltrating lobular carcinoma accounting for 8/166 cases (4.8%). Majority of the tumors were in the range of 2-5cm (pT2) (46.3 %).

Among 166 cases, 58/166 cases (~35%) were lymph node negative, while 108 cases (65 %) were lymph node positive (N1-N3).

Grade II tumors were most common accounting for 105/166 cases (63.2%).

ER, PR, HER2neu positivity was noted in 110 cases (66.2 %), 94 cases (56.6%) and 62 cases (37.3 %) respectively.

Majority of the tumors were of Luminal A subtype 79 cases (47.6%), while triple positivity was noted in 25 case (15 %), Her-2 enriched cases were 31 cases (18.6%).

Ki67 was categorized into high (>15 %) and low (<15%) levels. Association between Ki67 and tumor characteristics with mean Ki67 index are presented in **Table 2**.

Table 2. Prognostic factors associated with Ki-67 expression (n=166)

Prognostic factor	Ki-67 expression, %	
	≤ 15	> 15
Age		
≤ 40	8	39
> 40	39	80
Tumor type		
IDC	50	102
Others	3	11
Stage		
I	11	10
II	14	49
III	16	51
Grade		
I	9	8
II	34	73
III	3	39
ER		
positive	31	77
negative	22	36
PR		
positive	26	67
negative	28	45
Her-2		
positive	8	54
negative	47	86

We correlated the Ki67 index with various clinicopathologic parameters. The mean values of Ki67 indices were used in this comparison. We found that older (>40 yrs) patients had mean Ki67 values of 47.5 % versus 23.5 % in younger patients (< 40 yrs) .

Mean Ki67 indices were higher in poor prognosis tumors such as GIII and HER (+) tumors

KI67 index of >15 % was noted in 92.8 % of cases of G1 tumors , while was only 47 % of GIII tumors, And in HER2(+) tumors 87 % of cases had KI67 >15 % , vs 64 % in HER2(-) tumors.

IV. CONCLUSION

According to reports from the St Gallen conference, breast carcinoma is divided according to Ki-67 index into three groups; low (≤ 15%), intermediate (16-30%) and high (>30%). Our study revealed similar results as reported from previous studies; which showed the association of higher Ki-67 index with poor prognostic factors such as, young age, triple negativity and high grade tumours. Our study revealed higher Ki-67 index among Omani breast cancer women (median 34.6%) compared to reports from other populations e.g. a study from Turkey in 2014 included 462 patients reported median Ki-67 levels of 20%, while another study was published in Journal of Analytical Oncology in 2015 showed the mean Ki-67 indices from Vietnamese and Swedish patients, were 27.7% and 26.9% respectively.

V. DISCLOSURE OF INTEREST

No significant relationships.