

Research paper 4

A retrospective analysis of Ki-67 proliferation index in breast cancer: a single centre

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Introduction: The Ki-67 proliferation index (Ki67) is an important prognostic marker in breast carcinoma (BCa). This study aims to describe the pattern of Ki67 expression and its clinical utility in a local setting.

Methodology: A retrospective, descriptive, cross-sectional study of all cases of BCa diagnosed between January 2019 and March 2022 at Teaching Hospital, Anuradhapura. All the cases in which immune prognostic markers (ER, PR, HER2) and Ki67 were available, were included in the study. Haematoxylin and eosin-stained sections and the immunohistochemistry (IHC) slides were reviewed. The modified Nottingham grade and IHC profile were documented.

Results: BCa of 130 women (mean age=54.87 years, s=11.83), 69 biopsies (59.1%) and 61 resection specimens (46.9%) were studied. There were 19.2% (25/130), 43.9% (57/130) and 36.9% (48/130) grade I, II and III tumours, respectively. 54.6% (14/25) of grade 1 tumours showed Ki67<20% (mean=23.16%, s=21.69). 15.4% (20/130), 31.5% (41/130), 18.5% (24/130), 13.8% (18/130) and 20.8% (27/130) were of luminal A, luminal B (HER2-), luminal B (HER2), HER2 and triple-negative breast carcinoma (TNBC) subtypes, respectively. A high Ki67 was seen in luminal B (mean=36.65%, s=19.418), HER2 (mean=38.72%, s=21.96) and TNBC (mean=48.72%, s=24.81) subtypes. 38.5% (50/130) of tumours were classified as luminal A vs luminal B based on Ki67 (interpreted with other markers), of which 7.7% (10/130) were grade III.

Discussion and conclusion: High Ki67 was associated with aggressive pathological features, including high- grade and HER2 and TNBC subtypes. According to the International Ki67 in Breast Cancer Working Group, the clinical utility of Ki67 in BCa is evident only in ER+/HER2- stage I and stage II BCa, which accounted for 38.5%. Therefore, we could consider restricting Ki67 testing for this sub-group of tumours in the local setting where funding for IHC is limited.

Keywords: Ki-67, breast carcinoma

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