

## Research paper 7

## RP 07

**The concordance of histological grade of breast carcinoma between core biopsy and the corresponding surgical resection specimen: a single centre experience**

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**Introduction and objectives:** Histological grade (HG) in core biopsy (CB) is a challenge as there is limited tissue available in comparison to the subsequent surgical resection specimen (SR). The aim of this study is to assess how reliable the grading we do in CB, compared to SR, and to identify the areas that need to be improved when performing the grading in CB.

**Methodology:** All CBs and their corresponding SR of BCs, which were not subjected to neoadjuvant therapy, reported from January 2020 to March 2022, were included. HGs of these two groups were compared using a Chi-square test. A similar comparison was made where HG of CB and SR was performed by two different pathologists to determine whether interobserver variability had contributed to any discordance.

**Results:** There were 58 cases. A discordance in HG between CB and SR was noted in 31.03% (18/58). SR had higher HG compared to CB at 25.86% (15/58) and a lower grade in 5.17% (3/58). The discordance rate in HG-1 and HG-2 are higher than HG-3 (4/11;36.36%, 12/26;46.15%, 2/21;9.52% in HG-1,2,3, respectively). Only the differences in the mitotic score (MS) significantly contributed to the difference in the final HG ( $p=0.01$ ). Scoring of nuclear pleomorphism ( $p=0.443$ ) and tubular formation ( $p=0.628$ ) were not significant in the final HG. HG of CB and SR reported by two pathologists had not contributed to the discordance ( $p=0.7826$ ).

**Discussion and conclusion:** HG is a simple and inexpensive method for assessing tumour biology and contributes to treatment planning in BC, especially when access to molecular classification is limited. In our study, the concordance of HG between CB and SR was 68.96% (40/58). As MS was identified to be the main contributory factor for the discordance in HG, strict adherence to standardized procedures in tissue fixation and processing, guidelines in assessing MS and implementation of peer discussion will help to minimize the errors. Pathologists should be cautious when assessing the lower-HGs as the discordance is higher in HG-1 and 2, than HG-3.

**Keywords:** Histological grade, breast carcinoma, core biopsy, mitotic count

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