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Evaluation of current prognostic and predictive markers in breast cancer: a validation study of tissue microarrays.

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Source

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Abstract

BACKGROUND:

Tissue microarrays (TMAs) are an attractive alternative to analysis of whole sections (WS). For breast carcinomas, the recent recommendations for cut-offs (i.e. Ki67, H-score) have necessitated the re-evaluation of TMAs.

MATERIALS AND METHODS:

TMA results of immunohistochemistry (IHC) and Fluorescence in situ hybridization (FISH) testing for Estrogen receptors (ER), Progesterone receptors (PgR), Ki67 and HER2 were compared against the results of WS for 88 breast carcinomas.

RESULTS:

We found excellent agreement between the two methods for ER and PgR IHC evaluation, using the H-score (Kappa coefficient 0.972 and 0.9, respectively). There was also excellent correlation for HER2 IHC (Kappa coefficient 1) and amplification (Kappa coefficient 0.933). Furthermore, scoring of Ki67 was highly-correlated between TMAs and WS (Kappa coefficient 0.954). The latter excellent correlation has not, to our knowledge, been previously reported.

CONCLUSION:

For breast cancer, TMAs are an efficient and reliable alternative to the use of WS, using the currently recommended markers, evaluation protocols and cut-off values.