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Assessment of HER-2/neu expression in breast carcinoma: a comparative approach by automated cellular imaging system (ACIS) and ScanScope Aperio

Janina Slodkowska[1], Jan Breborowicz[2], Martina Ploghoft[3], Michal Wojciechowski[4], Violetta Filas[2], Karolina Pisula[3], Wojciech Staniszewki[4].

1Department of Telepathology, Institute of TB&Lung Diseases, Warsaw, Poland
2 Department of Tumor Pathology, Wielkopolskie Center of Oncology, Poznan, Poland
3 Dako, Copenhagen, Denmark
4Precoptic, Nikon distributor, Warsaw, Poland

j.slodkowska@igichp.edu.pl

Abstract

Introduction: Immunohistochemical (ihc) scoring plays a critical role in the predictive prognosis of breast carcinoma patients. HER-2/neu expression has different prognostic relevance according to the type of patient treatment. Virtual Slide [VS] technology improved the accuracy and reproducibility of ihc scoring. The quality control and standardization of the quantitative assays are essential for the predictive value of the biomarkers.
Our aims were evaluating the accuracy and reproducibility of quantitative analysis of HER-2/neu expression performed by ACIS, ScanScope Aperio and by light microscopy in the same groups of breast carcinoma patients.
Methods: 112 samples of invasive ductal breast carcinoma were immunostained with the Hercept Test TM (Dako, Denmark) according to Dako manual procedure. The immunostaining results were evaluated by the 2 experts and reported according to the Dako recommended scoring (scale 0, 1+, 2+, 3+). The results of the light microscopy scoring were as follows: “0” – 11 cases, “1+” - 37, “2+” - 34 and “3+” – 30 cases. FISH (fluorescence in situ hybridization) assay was supplemented for the samples qualified as 2+.
All glass slides have been scanned by ACIS III and ScanScope Aperio system. The quantitative ihc evaluation has been performed on VS by 3 pathologists independently with both systems. The comparative analysis of the results and statistical evaluation will be carried on.
Conclusion: Assessment of automated ihc analysis is essential for standardization in the digital pathology and its wider application in the clinical practice.

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