

Publication**Atypical cells in effusions: diagnostic value of cell image analysis combined with immunocytochemistry****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 789181**Author(s)** Matter-Walstra, K. W.; Kraft, R.**Author(s) at UniBasel** [Matter-Walstra, Klazien](#) ;**Year** 1996**Title** Atypical cells in effusions: diagnostic value of cell image analysis combined with immunocytochemistry**Journal** Diagn Cytopathol**Volume** 15**Number** 4**Pages / Article-Number** 263-9**Keywords** Cytodiagnosis/*methods; Cytophotometry; DNA/analysis; DNA, Neoplasm/analysis; Exudates and Transudates/*cytology; Female; Humans; Image Cytometry/*methods; Immunohistochemistry/*methods; Male

The reliable identification of tumor cells in populations of atypical cells occurring in body cavity effusions is a well-known diagnostic problem. In order to improve tumor cell detection and to predict disease progression, we developed a cell scoring strategy based on a combination of DNA cytophotometry and immunocytochemistry. For this purpose, morphologically atypical cells obtained from 33 effusion samples were submitted to DNA content analysis and tested for Ber-EP4 immunoreactivity. It turned out that elevated DNA content alone has a low specificity (true negative ratio) and sensitivity (true positive ratio) in predicting disease outcome, whereas Ber-EP4 immunoreactivity alone has a high specificity (100%) but a low sensitivity (56%). In contrast, the use of a scoring system combining the two techniques and relating scores to the previous disease state and the cytomorphology of the atypical cells results in highly specific and sensitive prediction of the disease outcome. We therefore suggest that this approach is a valuable tool for reliably identifying tumor cells in effusions containing populations of cytologically suspect cells.

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