Anti-p53 in breast cancer: concordance of different assay procedures and association with p53 antigen expression

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OBJECTIVE: Anti-p53 levels detected by different methods were compared in a predefined group of patients with breast cancer and correlated with p53 antigen expression in the corresponding tumors. METHODS: P53 autoantibodies were investigated in 165 patients with primary breast cancer using ELISAs with recombinant or native p53. Immunoblot and indirect immunofluorescence (Huh7) were used for confirmation, p53 antigen expression in the tumor was determined immunohistochemically. RESULTS: Using ELISA, overall 18/165 positives (11%) were detected, with only partly concordant results between the assays. Five positive sera were confirmed by immunoblot, and three also by indirect immunofluorescence. Anti-p53-positive patients detected by more than two assays showed accumulated p53 in the tumor (6/6) and mostly suffered from recurrent tumors (4/6; p = 0.02). In these cases, a trend towards a shortened disease-free interval was found (26 vs. 49 months; n.s.). In patients with a positive or borderline result in only one of the serological methods, there was no increased rate of p53 accumulation compared to anti-p53-negative patients (4/19 versus 35/126). CONCLUSIONS: Lack of assay standardization may partly explain the divergence in reports on anti-p53 and its clinicopathological associations. We speculate that, in different groups of patients, anti-p53 might be induced by different mechanisms.

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