

Abstract

Autoantibodies in early breast cancer

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Background: Immune responses to a number of tumour-associated antigens have been reported, although their suitability, individually, as diagnostic indicators has not been demonstrated. This study has taken a panel approach to demonstrate the diagnostic potential afforded by the detection of multiple auto-antibodies to known tumour-associated proteins. **Methods:** Auto-antibodies to MUC1, p53, c-myc and c-erbB2 were measured in serum, by ELISA, in five groups - normal controls (n = 100), primary breast cancer patients (PBC) (n = 200), patients with benign breast disease (n = 50), women deemed to be 'at risk' of breast cancer from whom serum samples had been taken at least 6 months prior to clinical diagnosis (n = 9) and patients with auto-immune disorders (n = 25). The value of adding other antigens eg BRCA1 and BRCA2 is currently being assessed. **Results:** Elevated levels of auto-antibodies were seen in 82% of PBC patients compared to normals. No significant differences were seen in overall detection when these patients were sub-divided either by detection methodology (screen-detected vs symptomatic presentation), lymph node status at diagnosis or menopausal status. Of those individuals with pre-diagnosis samples, 60% had elevated auto-antibodies: in this group, the lead-time for cancer detection with auto-antibodies, over clinical/ mammographic detection, ranged from 6 to 36 months. **Conclusion:** This study raises the possibility of using a combination of assays to detect auto-antibodies to cancer-associated antigens for screening and early diagnosis of breast cancer. While very interesting, these findings need to be confirmed in another group of patients.