Methods and Patients: The preliminary study consisted of 187 advanced Breast Cancer patients (pts), followed up for 7 years by Tumor Markers and correlated to clinical parameters. A Meta Analysis of papers on this subject was performed. It included Descriptive/graphical methods as L’Abbe plot, Forest plot, Funnel plot, basic statistical methods as Estimation of a common effect and Between-studies heterogeneity, or Regression-based methods as Fixed effects or Random models.

Results: A significant correlation of TPS/TPA with response to therapy, early detection (lead time) of remissions or recurrences as well as survival, were demonstrated. Univariate analysis of pretreatment marker levels (accepted cut-off levels) showed significance for TPA, TPS, CEA, CA125 and CA15-3. Median survival time of pts with low levels of CA 125, TPS, CA15-3 and CEA were 23 m, 18 m, 16.5 m, 12m, 9.6m as opposed to high marker levels: 8.8 m, 9 m, 8.2m, 7.4m, 9.7 m - respectively. Survival was best correlated to low TPA and TPS initial levels. TPS retained significance also in the multivariate Cox’s regression analysis.

Conclusions: We conclude that the cytokeratin markers TPS and TPA provide the most important information for prognosis in advanced Breast Cancer pts.

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Comparison between two different dynamic methods for evaluating CEA-TPA-CA15.3 tumor marker (TM) panel specificity in the post-operative follow-up of disease-free breast cancer patients: preliminary results


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A new dynamic easily applicable method to improve CEA-TPA-CA15.3 specificity for post-operative follow-up of breast cancer patients has been compared with that we have so far used (Nicolini et al, BMC 2007; Nicolini et al, Cancer Lett 2008). An individual reference limit (IRL) to decrease the effects of biological and statistical variability occurring in marker measurement was defined. The IRL for CEA, TPA, CA15.3 was the mean (m) value plus 2 standard deviations (sd) of 3 consecutive serum values from blood samples withdrawn at 2 months interval; this was the IRL when sd was > 20% of m; otherwise, sd was taken as 20% of m. IRL was applied for 2 years following the 1st determination, thereafter it was re-calculated every 2 years by the same procedure as the biological variability is expected to be affected by the patient ageing. When any TM was higher than the IRL, another blood sample was withdrawn 2-3 weeks following this elevated value. When in this consecutive blood sample TM value was higher than IRL, the same procedure was repeated.