Subtyping breast cancer by immunohistochemistry to investigate survival terms

25 May 2010

A study by Paul Pharoah and colleagues published in this week's *PLoS Medicine* evaluates immunohistochemistry-based subtype classification of breast tumors for the prediction of disease outcome. Their analysis is based on more than 10,000 breast cancer cases with early disease, and examines the influence of a patient's tumour type on the prediction of future survival.

As has been shown previously the three subtypes of ER negative disease have a poorer outcome than the ER positive disease subtypes in the short term. However, this study has shown that in the long term, the ER negative disease subtypes have a better prognosis. This study has also conclusively demonstrated that the so-called triple negative tumours (ER-, PR- and HER2-) can be divided into two sub-types (basal and non-basal) with the basal subtype having a poorer prognosis.

The observed survival patterns were independent of any systemic adjuvant therapy, suggesting that tumour biology and molecular heterogeneity within breast cancer subtypes, rather than the choice of therapy, determined the survival trends. The authors recommend that this prognostic method should be incorporated into clinical practice.

A related Perspective by Stefan Ambs in the same issue examines the clinical significance of this large study and discusses the limitations of subtype classification for prognostication and targeted therapy in the management of breast cancer.

More information: Blows FM, Driver KE, Schmidt MK, Broeks A, van Leeuwen FE, et al. (2010) Subtyping of Breast Cancer by Immunohistochemistry to Investigate a Relationship between Subtype and Short and Long Term Survival: A Collaborative Analysis of Data for 10,159 Cases from 12 Studies. PLoS Med 7(5): e1000279.doi:10.1371/journal.pmed.1000279

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