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The relationship between tumour budding, the tumour microenvironment and survival in patients with invasive ductal breast cancer

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Purpose: Tumour budding has previously been reported to predict survival in several solid organ tumours including breast; however, whether this is independent of other aspects of the tumour microenvironment is unknown. In the present study, the relationship between tumour budding, the tumour microenvironment and survival was examined in patients with invasive ductal breast cancer.

Material & Methods: Patients presenting between 1995 and 1998 were studied (n=474). Tumour budding was measured utilizing routine pathological slides at the invasive margin and its association with cancer specific survival (CSS) and clinicopathological characteristics examined.

Results: Tumour budding was associated with CSS (hazard ratio (HR) 2.08, 95% confidence interval (CI) 1.38–3.19, P=0.001), independent of PR status, involved lymph node, necrosis, lymph (LVI) and blood (BVI) vessel invasion, and tumour stroma percentage (TSP). Further, tumour budding was independently associated with reduced CSS in node-negative disease (HR 3.06, 95% CI 1.41–6.67, P = 0.005), and those who have low TSP (HR 2.39, 95% CI 1.34–4.25, P=0.003) and high grade local inflammatory infiltrative (HR 2.67, 95% CI 1.27–5.57, P=0.009). Tumour budding was associated with several adverse pathological characteristics, including lymph node involvement, LVI, increased TSP and weaker local inflammatory infiltrative.

Conclusions: The tumour budding was a significant predictor of survival in patients with invasive ductal breast cancer, independent of adverse pathological characteristics and components of tumour microenvironment. The present study further confirms the clinical utility of both tumour and host-based factors of tumour microenvironment.

Biography

Fadia J A Gujam has completed her MSc in Surgical Oncology with merit degree at the age of 32 years from University of Glasgow and now is at the end line of her PhD research (An investigation of breast cancer microenvironment) at the same institution. She has worked at the Institute of Cancer Research, Glasgow. She has published three papers in reputed journals.

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