

RISK FACTORS

FOXP3⁺ T_{REG} cell distribution predicts transformation in follicular lymphoma

The distribution of forkhead box protein 3 (FOXP3)⁺ T-regulatory (T_{REG}) cells predicts survival and transformation risk in follicular lymphoma, according to a new study. “No biological predictors of risk of transformation existed in the literature,” says investigator Randy Gascoyne from the BC Cancer Research Centre, Canada.

Follicular lymphoma has a highly variable clinical progression and can transform into an aggressive and potentially fatal lymphoma. Immunosuppressive T_{REG} cells have been shown to affect antitumor responses and previous studies on the association of T_{REG} cells with survival in follicular lymphoma have provided contradictory results. “Virtually all these studies have been hindered by including patients treated with different therapies,” adds Gascoyne.

Farinha *et al.* used a cohort of 105 patients with follicular lymphoma from a previous phase II clinical trial in

which all patients had received the same treatment. The researchers constructed tissue microarrays using diagnostic biopsies from the patients, stained for T_{REG} cell markers (CD4, CD25 and FOXP3) and quantified the number and distribution of T_{REG} cells in the samples. They found that the pattern, but not the number, of FOXP3⁺ T_{REG} cells in or around the neoplastic follicles was associated with survival in follicular lymphoma and had a significant impact on overall survival, progression-free survival, and crucially, risk of transformation.

Gascoyne plans to validate these results for follicular lymphoma using in patients who have received chemotherapy and rituximab.

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Original article Farinha, P. *et al.* The architectural pattern of FOXP3-positive T cells in follicular lymphoma is an independent predictor of survival and histological transformation. *Blood* 115, 289–295 (2010)