In Differentiated Thyroid Cancer, an Incomplete Structural Response to Therapy is Associated with Significantly Worse Clinical Outcomes than Only an Incomplete Thyroglobulin Response

Vaisman, Fernanda; Tala, Hernan; Grewal, Ravinder; Tuttle, R. Michael

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Resumen

Background: We previously demonstrated the clinical utility of using response to therapy variables obtained during the first 2 years of follow-up to actively modify initial risk estimates which were obtained using standard clinic-pathologic staging systems. While our proposed dynamic risk stratification system accurately reclassified patients who demonstrated an excellent response to therapy as low-risk patients, it grouped patients with either biochemical or structural evidence of disease into a single incomplete response to therapy cohort. This cohort included a wide variety of patients ranging from very minor thyroglobulin (Tg) elevations in the absence of structurally identifiable disease to widespread, progressive structural disease. Here we determined whether subdivision of the incomplete response to therapy category more precisely predicted clinical outcomes. We hypothesized that patients with an incomplete response to therapy based on persistently abnormal Tg values alone would have better clinical outcomes than patients having structurally identifiable disease.

Methods: Following total thyroidectomy and radioactive iodine (RAI) ablation, 192 adult thyroid cancer patients were retrospectively identified as having either a biochemical incomplete response (abnormal Tg without structural evidence of disease) or structural incomplete response (structurally identifiable disease with or without abnormal Tg) as the best response to initial therapy within the first 24 months after RAI ablation. Clinical outcomes evaluated included structural disease progression, biochemical disease progression, and overall survival.

Results: Sixty-three patients (33%) had a biochemical incomplete response while 129 (67%) had a structural incomplete response. Eleven to 156 months after evaluation of their responses (mean = 70 months), patients with structural incomplete response were significantly more likely to have structural evidence of disease at final follow-up (37% vs. 17%, $p = 0.0004$), structural progression (52% vs. 5%, $p < 0.001$), biochemical progression (45% vs. 11%, $p < 0.001$), and death from

disease (38% vs. 0%, $p < 0.0001$) than patients demonstrating a biochemical incomplete response. Overall survival was significantly better in patients with either a biochemical incomplete response or a loco-regional structural incomplete response than patients demonstrating a structural incomplete response with distant metastasis (Kaplan-Meier analysis, $p < 0.0001$).

Conclusions: A structural incomplete response to initial therapy is associated with significantly worse clinical outcome than a biochemical incomplete response to therapy.

Palabras clave

KeyWords Plus: RISK-GROUP; CARCINOMA; CLASSIFICATION; SYSTEM; VARIABLES