

Combined immunosuppression & radiotherapy in thyroid eye disease (CIRTED) trial: A multi-centre, double-masked, factorial randomised controlled trial

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Background

Thyroid eye disease is an inflammatory orbital condition which causes visual dysfunction and psychological morbidity. Current evidence is conflicting on the benefit of radiotherapy and antiproliferative immunosuppression *in addition* to systemic corticosteroid treatment. In particular, little is known about clinical outcomes more than 24 weeks after initiating these interventions.

Methods

CIRTED investigated the efficacy of orbital radiotherapy (RT) and azathioprine (AZA) versus placebo in combination with a standard 24-week tapering course of oral prednisolone in patients with active TED in a 2:2 factorial design. A composite outcome measure of treatment success was used with a primary end-point at 48 weeks.

Findings

126 subjects were randomized and primary outcome data were available in 103 (82%). Sixty-six (52%) withdrew from their treatment allocation beyond the period of radiotherapy/sham-radiotherapy but before the primary end point (61% in AZA, 40% in RT). Withdrawal due to abnormal blood tests or side-effects was more frequent with AZA ($OR_{(adj)} = 5.90$ (95%CI 2.06, 16.9) $p=0.001$). In an intention-to-treat analysis, the adjusted odds ratio for improvement was 2.54 (95%CI 0.98, 6.60, $p=0.06$) for AZA and 0.93 (95%CI 0.38, 2.26) $p=0.87$ for RT. For those completing therapy improvement was more frequent on AZA ($OR_{(adj)} = 7.01$ (95%CI 1.70, 28.8) $p=0.007$) than RT ($OR_{(adj)} = 1.49$ (95%CI 0.45, 4.9) $p=0.50$)

Interpretation

In patients receiving a 24-week course of oral prednisolone, no additional treatment benefit was seen with RT. Completion rates of AZA treatment were low, however those completing treatment derived substantial benefit at 48 weeks.