

Diabetic Retinopathy Clinical Research Network Protocol I (DRCR I) - 2010



Objective

To investigate the safety and efficacy of laser alone versus in conjunction with either intravitreal ranibizumab or triamcinolone for the treatment of diabetic macular edema (DME)

Methods

Design: Multicenter RCT

Sample Size: 854 eyes (52 sites)

Treatment Groups:

- 293 to sham injection + prompt laser
- 187 to ranibizumab + prompt laser
- 188 to ranibizumab + deferred laser (≥ 24 weeks)
- 186 to triamcinolone + prompt laser

Outcome Measures:

- Best-corrected visual acuity at 1 year
- Central subfield thickness at 1 year
- Safety of treatment at 1 year

Results

Point 1: Ranibizumab + prompt or deferred laser led to a significant increase in visual acuity letter score from baseline vs. laser alone

- Ranibizumab + prompt laser ($+9 \pm 11$ [mean change \pm SD], $p < 0.001$) and ranibizumab + deferred laser ($+9 \pm 12$, $p < 0.001$)
- No significant change seen with IV triamcinolone + laser ($+4 \pm 13$, $p = 0.31$)
- Both ranibizumab groups showed substantial improvement of ≥ 10 letters (50% prompt, 47% deferred) vs. laser alone (28%) at 1 year

Point 2: Both ranibizumab groups and triamcinolone + laser treatment demonstrated a greater decrease in mean central subfield thickness vs. laser alone at 1 year

- Eyes receiving intravitreal treatment were less likely to show progression of diabetic retinopathy, have a vitreous hemorrhage, or receive panretinal photocoagulation

Point 3: Ranibizumab and triamcinolone were not associated with increased systemic side effects or mortality

- Uncommon ocular side effects with ranibizumab included tractional retinal detachment and injection-related endophthalmitis
- Triamcinolone was associated with increased risk of elevated IOP and cataract development

TLDR: Intravitreal ranibizumab was safe and effective at improving visual acuity and decreasing central subfield thickness for patients with diabetic macular edema.