

Intravitreally Injected Anti-VEGF Drugs Exert a Biological Effect in the Fellow Eye

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PURPOSE

To determine whether the intravitreal injection of anti-VEGF drugs (Kenalog, Macugen, Avastin) exert any biological effect in the fellow eyes of patients with bilateral exudative AMD.

METHODS

Pre- and post injection (< 6 weeks) OCTs of 29 patients (37 injections) with bilateral AMD were analyzed to determine the thickness change in nine OCT zones. Fellow eyes of patients treated with PDT were used as controls. Normograms prepared from age-matched normal individuals and untreated AMD patients were used to determine the significance of thickness change for nine OCT zones. A "Standardized Volumetric Change Index" derived using the thickness and relative area of each OCT sector was used to compare the efficacy of each treatment and the concordance of changes in the fellow eye.

RESULTS

In parallel to the injected eye, comparable decreases in the macular thickness were observed in the fellow AMD eyes after intravitreal injection of Kenalog, Macugen or Avastin ($p > 0.05$). Paradoxically, the biologic effect of Macugen in the fellow eye was more prominent than in the injected eye ($p = 0.04$). Avastin resulted in the greatest thickness reduction both in the injected and fellow eye ($p = 0.02$).

CONCLUSION

Intravitreal injection of anti-VEGF drugs exerts a biologic effect in the fellow eye, possibly via systemic absorption. Thus, their use may interfere with physiological angiogenesis, i.e. coronary collateral formation and wound healing. The higher biologic efficacy of Macugen in the fellow eye suggests doses lower than the conventional intravitreal dose may be more efficacious for clinical use.