

Review: verteporfin plus photodynamic therapy reduces loss of vision in age related macular degeneration

Wormald R, Evans J, Smeeth L, et al. Photodynamic therapy for neovascular age-related macular degeneration. *Cochrane Database Syst Rev* 2003;(3):CD002030 (latest version 25 Feb 2003).

Clinical impact ratings GP/FP/Primary care ★★★★★

Q In patients with neovascular age related macular degeneration (AMD), what is the effect of photodynamic therapy?

METHODS

	Data sources: Cochrane Central Register of Controlled Trials, Medline, EMBASE/Excerpta Medica (to January 2003), Science Citation Index; reference lists; and contact with experts.
	Study selection and assessment: randomised controlled trials that compared photodynamic therapy with placebo, no treatment, or another treatment in people with neovascular AMD.
	Outcome: prevention of visual loss.

MAIN RESULTS

2 studies (948 participants) were included. Both studies compared verteporfin, 6 mg/m² (intravenous infusion of 30 ml/10 min), plus photodynamic therapy with placebo plus photodynamic therapy. Data were pooled using a fixed effects model. At 24 months, fewer people in the verteporfin group than in the placebo group lost ≥ 3 lines or ≥ 6 lines of vision (table). More people treated with verteporfin than with placebo reported visual disturbances, problems with the injection site, infusion related back pain, and photosensitivity reactions (table). Allergic reactions were similar in both groups.

CONCLUSION

In people with neovascular age related macular degeneration, the addition of verteporfin to photodynamic therapy reduced visual loss.

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Commentary

AMD is the leading cause of legal blindness in the US among people over the age of 65 years; the risk of developing the disease increases with age.^{1,2} Limited treatment options are available for this disorder. The Age-Related Eye Disease Study—an NIH sponsored, multicentre, placebo controlled trial—examined the beneficial effects of high dose zinc and vitamin antioxidants on the progression of AMD.³ Prophylactic laser treatment of patients with high risk large drusen is also being evaluated. Laser photocoagulation treatment of choroidal neovascularisation (CNV) secondary to AMD has shown some benefit for patients, but disease recurrence rates are high within 3 years.^{1,2}

The studies in the review by Wormald *et al* involved elderly patients (mean age 75 y) with either “classic” CNV or occult CNV and significant recent worsening of vision and found improvement in visual acuity with photodynamic therapy. Photodynamic therapy offers the advantage of a treatment targeted specifically at the proliferating neovascularisation while avoiding collateral injury. Currently, not all patients with wet AMD are candidates for this therapy, and it is recommended for eyes with predominantly classic subfoveal CNV. Verteporfin is contraindicated for patients with porphyria.

Other treatments under investigation for AMD include vitreoretinal microsurgical techniques, medical therapy targeting growth factors, and experimental drugs. Visual rehabilitation programmes remain beneficial.

Blindness is not an inevitable outcome of AMD. As new treatments become available, early detection may allow for maximal preservation of vision.

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1 Gottlieb JL. Age-related macular degeneration. *JAMA* 2002;**288**:2233–6.

2 Mitra RA, Singerman LJ. Recent advances in the management of age-related macular degeneration. *Optom Vis Sci* 2002;**79**:218–24.

3 Sackett CS, Schenning S. The age-related eye disease study: the results of the clinical trial. *Insight* 2002;**27**:5–7.

Verteporfin v placebo before dynamic phototherapy for neovascular age related macular degeneration*

Outcomes	Weighted event rates			NNT (CI)
	Verteporfin	Placebo	RRR (95% CI)	
≥ 3 lines of vision lost at 24 months	50%	64%	23% (13 to 31)	8 (5 to 13)
≥ 6 lines of vision lost at 24 months	22%	36%	38% (24 to 50)	8 (5 to 13)
			RRI (CI)	NNH (CI)
Visual disturbances	29%	18%	61% (24 to 109)	10 (6 to 17)
Problem with injection site	13%	5.6%	134% (43 to 282)	15 (10 to 25)
Infusion related back pain	2.0%	0%	721% (9 to 6060)	50 (25 to 100)
Photosensitivity reactions	2.3%	0.3%	431% (0 to 2717)	50 (25 to 100)

*Abbreviations defined in glossary; weighted events, RRR, RRI, NNH, and CI calculated from data in article.