

Hypericin-enhanced Argon Laser Photocoagulation for Subfoveal Choroidal Neovascular Membrane in Age-related Macular Degeneration

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PURPOSE

We previously showed that hypericin, the most powerful natural photoactive pigment can induce development of photothrombosis in the choriocapillaries when activated with argon-green laser at light fluences causing subthreshold burn. Efficacy of orally-administered hypericin was shown in treatment of CNM. This study aims to evaluate safety and efficacy of intravenously administered hypericin-enhanced argon laser photocoagulation (H-ALP) in subfoveal CNM in AMD.

METHODS

After 10 minutes infusion of intravenous hypericin (Hiperforat®: 31.9ug/ml hypericin and 10.6ug/ml pseudohypericin in 1ml) in 4.25ug/kg dose mixed in total volume of 20ml of 5% dextrose solution, argon-green laser (Coherent-Novus™) with a spot size of 1000 microm and a fluence of 24 joule/cm² was applied in 16 eyes of 15 patients at 30th minute. Hypericin maintenance therapy (Saint John's Wort®, 3 tablets a day) was done for the following 3 months. H-ALP with maintenance therapy was repeated if recurrence or persistence of CNM was noted. Anatomical (complete closure of CNM) and functional success (3 or more line of visual improvement).

RESULTS

In 24 (19-36) months follow-up, 2 (1-4) sessions of HALP resulted in anatomical success in 6 eyes (85.7%) with subfoveal classical CNM and 7 eyes (77.7%) with subfoveal occult CNM; functional success in 1 eye (14.3%) with subfoveal classical CNM and functional failure (decrease in 3 or more Snellen lines) in 1 eye (11.1%) with subfoveal occult CNM. In 1 (11.1%) eye with subfoveal occult CNM, RPE rupture developed 2 months after H-ALP. No noticeable adverse effect from H-ALP applications or intolerance to drug was noted.

CONCLUSION

H-ALP is novel and cheap treatment option for subfoveal CNM secondary to AMD. Its photodynamic potential seems to be pronounced if it is equipped with more suitable delivery systems. Antiproliferative and antidepressive action of hypericin might provide a relief in maintenance therapy of AMD patients. Further studies are required to put this treatment modality into ophthalmic practice.