

Branch Vein Occlusion Study (BVOS) – 1984



Objective

To assess the benefit of “scatter” laser photocoagulation in eyes at risk for neovascularization (NV) or vitreous hemorrhage (VH) and to assess the benefit of “grid” pattern photocoagulation in eyes at risk for vision loss from macular edema with BRVO

Methods

Design: Multi-center, randomized, controlled clinical trial

Four groupings of patients with branch vein occlusions:

- **Group I:** Eyes at risk for the development of NV
- **Group II:** Eyes at risk for the development of VH
- **Group X:** Eyes at high risk for the development of NV
- **Group III:** Eyes at risk for vision loss from macular edema

Main outcomes: Presence of neovascularization, Presence of vitreous hemorrhage, Visual acuity outcomes

Results

Point 1: Scatter laser photocoagulation reduced the rates of Group I patients developing neovascularization

- Of the 319 eyes in Group I (159 control group, 160 treated), fewer treated eyes (12%) developed neovascularization than control eyes (22%)

Point 2: Scatter laser photocoagulation reduced the rates of Group II patients developing vitreous hemorrhage

- Of the 82 eyes in Group II (41 control group, 41 treated), fewer treated eyes (29%) developed vitreous hemorrhage than control eyes (61%)

Point 3: Grid pattern photocoagulation improved visual acuity outcomes

- There were 139 eyes initially randomized, but only 78 eyes that were evaluated at 3 years
- Treated patients had better visual acuity on average (20/40-20/50 versus 20/70)
- 65% of treated eyes gained 2 or more lines compared to 37% of control eyes

TLDR: Argon laser photocoagulation prevents neovascularization, vitreous hemorrhage, and vision loss in eyes with branch vein occlusion