

Vascular Leakage as a Predictive Factor of Outcome of Photodynamic Therapy with Visudyne®

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PURPOSE

Currently, there are several new therapeutic strategies for exudative AMD being studied, and the main target has been to occlude neovascularization and to obtain an antiangiogenic and antipermeability effect. Our purpose was to study the influence of vascular leakage on the angiographic outcome of Photodynamic Therapy with Visudyne®.

METHODS

We conducted an interventional case series with patients presenting exudative AMD, with predominantly classic vascular membrane. All patients were given PDT treatment with Visudyne. Angiography and fundus photography were done before and 30 days after treatment. Neovascular complex was identified in both examinations, and leakage area was measured at 20 and 120 seconds with IMAGEnet software. Endpoint outcome for this study was considered leakage variation 30 days after PDT treatment. The examiner was not aware of the patients' visual acuity or treatment outcome. Student t-test for paired samples was used for statistical analysis.

RESULTS

54 patients were included in this study and there were no differences in demographic characteristics. Median of pre-treatment leakage was 30.2%. For statistical purposes, we divided patients in two groups based on median of leakages and we classified them as low leakage and high leakage lesions. Before treatment, the low leakage group had a leakage area at 20- of 5.7 ± 3.6 and 120- of 6.3 ± 3.7 and after 30 days it was 3.7 ± 2.8 at 20` and 4.7 ± 3.1 at 120` ($p < 0,001$). The high leakage group, however, presented 2.6 ± 2.4 at 20- and 5.2 ± 4.9 at 120- before treatment and 2.1 ± 2.7 at 20` and 4.0 ± 3.9 ($P = 0,4$).

CONCLUSION

PDT remains one of the few approved drugs for AMD, and our goal today must be indication of this treatment based on the best evidence. Our data suggest that lesions with low leakage variation over the course of time of angiography may result in a better outcome when treated with PDT than membranes presenting a high leakage rate. Randomized controlled trials are needed to confirm this hypothesis.