

Effects of four different *Ginkgo biloba* extract-doses on retinal blood flow of healthy volunteers

S. Wolf¹, A. Suter², F. H. Degenring², F. Jung³, M. Weber²

¹Clinic and Policlinic for Ophthalmology, Leipzig, Germany

²Medical Department, Bioforce AG, 9325 Roggwil, Switzerland,

³Dresden's Institute of Heart- and Circulation- Research, Dresden, Germany

Objective

The influence of different *Ginkgo bioba* extracts on the perfusion of the retina and the optic nerve head was tested in an open, randomised, cross-over pilot study with 8 healthy volunteers using Laser Doppler flowmetry.

Material and Methods

Test medication

Dry extract of *Ginkgo biloba* leaves almost with a content of ginkgolic acids < 5 ppm, developed by Bioforce AG, Switzerland and Monograph-conformed standard extract

Dosage 1: 90 mg (0.73 mg Ginkgolides, 0.56 mg Bilobalide)

Dosage 2: 270 mg (2.19 mg Ginkgolides, 1.68 mg Bilobalide)

Dosage 3: 854 mg (6.93 mg Ginkgolides, 5.27 mg Bilobalide)

Dosage 4: 120 mg (6.93 mg Ginkgolides, 4.11 mg Bilobalide), standard extract

Volunteers

Three male and five female healthy volunteers, age between 23 and 52 years

Kind of application

Oral intake of each test medication as single dose by a cross over-design with at least 2 days of interval between every application.

Measurement

Laser Doppler flowmetry provides a non-invasive method to measure the perfusion of the retina and the optic nerve head at discrete locations. It provides a noninvasive method for two-dimensional mapping of the retinal microcirculation.

Calculated variables for efficacy

Dimension irrespective differences of the capillary blood flow and the volumes of moved blood cells before and 60 mm after the intake of the test medication

Results

The results have shown a consistent correlation of the dosage to the retinal blood flow and blood volume. The effect of the Bioforce extract was comparable to a *Ginkgo* extract which was fully conform commission E Monograph (positive control). The differences were not significantly different, which may be explained by the heterogeneous population sample and or the not known optimal measuring point after intake of the medication.

Conclusions

A newly developed *Ginkgo* extract exhibits increase of retinal blood flow and blood volume in a dose dependent manner. However, due to methodological inconveniences statistically significant differences could no be shown in this pilot study. In further studies a greater number of volunteers and further time points of measurement must be included.