Indocyanine green versus fluorescein angiography in the differential diagnosis of arteritic and nonarteritic anterior ischemic optic neuropathy

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PURPOSE: We evaluated in a prospective study the usefulness of indocyanine green (ICG) versus fluorescein angiography in the differential diagnosis between arteritic and nonarteritic anterior ischemic optic neuropathy (AION).

METHODS: Simultaneous ICG and fluorescein angiography was performed on 22 eyes with AION. Appearance of both dyes in the choroid and in the retina, laminar flow, venous filling, and complete filling of the choroid were measured independently. Massive delayed choroidal filling corresponding to occluded posterior ciliary arteries was especially assessed, as it is almost always diagnostic of arteritic AION. We considered the choroidal filling as massive delayed if it was still incomplete after the venous filling.

RESULTS: We diagnosed 5 arteritic AIONs, confirmed by biopsy, and 17 nonarteritic AIONs. In both types of angiography, 3 of 5 patients with arteritic AION showed massive delayed complete choroidal filling times (44.2, 45.8, and 70 seconds), and patients with nonarteritic AION had normal complete choroidal filling times. Dye appearance at the different angiographic times was similar for fluorescein and ICG angiography (P = 0.95-0.96).

CONCLUSION: Fluorescein angiography alone is sufficient to reveal massive delayed choroidal filling time in arteritic AION. For our purpose, ICG angiography provides no additional information.