

Hypertension and the eye

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This feature in *SA Family Practice* emphasises the importance of ophthalmoscopy in general practice. Identifying target organ damage in a hypertensive patient is of cardinal importance. It immediately warrants anti-hypertensive therapy in those with even Stage I (mild) hypertension. A clinical workshop and clinical atlas will further enable the general practitioner to master the technique and diagnosis.
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Systemic arterial hypertension increases cardiovascular risk by causing end-organ damage that includes **Retinopathy**.⁽¹⁾ Hypertensive retinopathy thus represents target-organ damage.

Uncontrolled hypertension may have other effects on the eye:

- (i) It may worsen the retinopathy of Diabetes Mellitus. In the UKPDS 50 study it was demonstrated that the incidence of diabetic retinopathy was strongly associated with higher blood pressure. In the UKPDS-studies, retardation in the progression of diabetic retinopathy was demonstrated with improved control of blood pressure.

- (ii) Other possible eye complications caused by uncontrolled hypertension include:

- retinal vein occlusion;
- retinal aneurysms;
- ischaemic optic neuropathy.

Classification of hypertensive retinopathy:

The old Keith-Wagener-Barker classification of four grades (Grade I – IV) has shown a poor correlation between the severity of hypertension, variation in the onset and progression of the clinical signs.

There is a movement towards simply describing fundal appearance rather than assigning a grade, and using a simple two-grade classification of non-malignant vs malignant changes. This provides

a useful correlation between clinical features and prognosis. In the absence of clinical signs, fluorescein angiography is useful for delineation of the microvascular abnormalities.

Narrowing of fundal arteries:

Recently, by using digitized retinal photographs, early retinal arteriolar narrowing has been shown to predict the development of hypertension over six years of follow-up. The conclusion of this study suggests that arteriolar narrowing may be linked to the development of hypertension. (3)

Conclusion:

There is certainly a renewed interest in the examination of the fundus of the eye in hypertensive patients. Medical doctors, however, need much practice to master the art of funduscopy.✎

References:

1. JNC VII-report. Hypertension 2003; 42:1206-1252.
2. Chatterjel S. *et al.* Review article. Hypertension and the eye: Changing perspectives. *J. Hum Hypertension* 2002; 16:667-675.
3. Wong T.Y. *et al.* Retinal Arteriolar Diameter and Risk for Hypertension. *Ann Intern Med* 2004; 140:248-255.

Figure I: Risk factors for Retinopathy in Hypertensives (2)

