UKPDS 50: risk factors for incidence and progression of retinopathy in Type II diabetes over 6 years from diagnosis.

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AIMS/HYPOTHESIS: To determine risk factors related to the incidence and progression of diabetic retinopathy over 6 years from diagnosis of Type II (non-insulin-dependent) diabetes mellitus. METHODS: This report describes 1919 patients from within the United Kingdom Prospective Diabetes Study (UKPDS), with retinal photographs taken at diagnosis and 6 years later and with complete data available. Photographs were centrally graded for lesions of diabetic retinopathy using the modified Early Treatment of Diabetic Retinopathy Study Final scale. Risk factors were assessed after 3 months diet from the time of diagnosis of diabetes. Patients were seen every 3 months in a hospital setting. Biochemical measurements were done by a central laboratory. End points of vitreous haemorrhage and photocagulation were confirmed by independent adjudication of systematically collected clinical data. The main outcome measures were incidence and progression of retinopathy defined as a two-step Early Treatment of Diabetic Retinopathy Study (ETDRS) final scale change. RESULTS: Of the 1919 patients, 1216 (63 %) had no retinopathy at diagnosis. By 6 years, 22 % of these had developed retinopathy, that is microaneurysms in both eyes or worse. In the 703 (37 %) patients with retinopathy at diagnosis, 29 % progressed by two scale steps or more. Development of retinopathy (incidence) was strongly associated with baseline glycaemia, glycaemic exposure over 6 years, higher blood pressure and with not smoking. In those who already had retinopathy, progression was associated with older age, male sex, hyperglycaemia (as evidenced by a higher HbA1c) and with not smoking. CONCLUSION/INTERPRETATION: The findings re-emphasise the need for good glycaemic control and assiduous treatment of hypertension if diabetic retinopathy is to be minimised.