

## **Efficacy over six years of sulphonylurea plus insulin therapy in type 2 diabetic patients in the UKPDS**

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**Aims:** To evaluate the efficacy of an intensive glucose control policy in which a basal insulin was added to sulphonylurea therapy (chlorpropamide or glipizide) if maximal doses did not maintain fasting plasma glucose (FPG) levels < 6.0 mmol/L compared with that using insulin alone and a conventional policy, primarily with diet.

**Patients:** 834 newly diagnosed type 2 diabetic patients in 8 UKPDS centres were allocated to chlorpropamide ± insulin (C ± I, n = 169), glipizide ± insulin (G ± I, n = 170), insulin alone (I, n = 245), or conventional (C, n = 242) therapy. 59% were male, 79% white Caucasian, 5% Afro-Caribbean, 16% Indian Asian. Mean (SD) age was 52 (9) years, BMI 28.8 (5.8) kg/m<sup>2</sup>, blood pressure 133 (20)/81 (10) mm Hg and median (IQR) FPG 8.3 (7.2 to 10.1) mmol/L, HbA<sub>1c</sub> 6.9 (6.1 to 8.0)%.

**Results:** At 6 years glycaemic control was improved with intensive policies, HbA<sub>1c</sub> (%): C ± I 7.0 (6.2 to 8.4), G ± I (7.3 (6.4 to 8.6), I 7.6 (6.5 to 8.7) versus C 8.3 (7.2 to 9.3)% and FPG (mmol/L): C ± I 7.7 (6.3 to 9.7), G ± I (7.8 (6.7 to 10.2), I 7.6 (6.4 to 10.1) versus C 9.7 (7.9 to 12.1). There were no significant differences between the intensive policies for FPG, HbA<sub>1c</sub>, weight or major hypoglycaemic episodes (C ± I 2.3%, G ± I 1.1% I 3.3% p.a.). By 6 years similar numbers of patients allocated to C ± I and G ± I had required additional insulin (32% vs 36%) with a further 9% and 15% respectively needing insulin therapy alone. Significantly more patients achieved HbA<sub>1c</sub> values < 7% at 6 years with C ± I (48%) or G ± I (46%) than with I (34%, p = 0.036). Median (IQR) insulin doses did not differ between the two sulphonylurea based therapies but tended to be lower than for insulin alone with C ± I 12 (7 to 26), G ± I 17 (14 to 36), I 27 (17 to 28).

**Conclusion:** Significantly more patients were able to achieve HbA<sub>1c</sub> values < 7.0% at six years with a policy adding basal insulin to maximal sulphonylurea therapy when FPG levels were >6.0 mmol/L than with an insulin alone policy, without increased major hypoglycaemia risk or weight gain.