Sulphonylurea failure in type 2 diabetes: treatment with a basal insulin supplement.

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Many diabetic patients continue to have hyperglycaemia on maximal sulphonylurea therapy. Five different therapeutic options, with the prime aim of achieving normal fasting plasma glucose concentrations, have been compared in 15 asymptomatic, sulphonylurea-treated type 2 diabetic patients in a randomized crossover study of 8-week periods. In 24 h metabolic profiles the overnight mean (+/- 1SD) basal plasma glucose level on sulphonylurea therapy was 8.9 +/- 4.2 mmol/l. This was slightly improved with added metformin therapy (7.3 +/- 4.3 mmol/l, p = 0.013), but reduced to normal by added ultralente insulin (5.2 +/- 3.2 mmol/l, p less than 0.001), ultralente insulin alone (5.1 +/- 1.6 mmol/l, p = 0.005) or by ultralente and soluble insulin (4.7 +/- 1.4 mmol/l, p = 0.003). The mean glycosylated haemoglobin concentration was reduced significantly only by the treatments which included insulin. None of the patients had severe or incapacitating hypoglycaemia and only when on additional soluble insulin did patients show a significant gain in weight. Combining sulphonylurea therapy with ultralente insulin did not significantly improve overall glucose control over treatment with ultralente alone, although the insulin dose required to restore fasting normoglycaemia was significantly lower (median (interquartile range), 25 (12-41) versus 40 (27-80) U/day, p = 0.001). In type 2 diabetic patients who continue to have fasting hyperglycaemia on maximal sulphonylurea therapy, fasting normoglycaemia can be achieved easily, without minimal changes in diet or lifestyle, by means of a basal insulin supplement.