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EFFICACY OF ONCE DAILY HUMALOG MIX50 AT DINNER COMPARED TO ONCE DAILY NPH INSULIN: A CROSSOVER STUDY

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INTRODUCTION

Insulin therapy is often delayed because of fear of hypoglycaemia and multiple injections to achieve target blood glucose. The aim of this study was to compare the rate of hypoglycaemia and metabolic control achieved on once-daily Humalog Mix50 with daily NPH insulin.

METHODOLOGY

This was a single-center crossover open-label study involving 49 patients with uncontrolled type 2 diabetes. The patients were given either NPH insulin at bedtime or Humalog Mix50 at dinner, then switched at the end of three months with titration for two weeks to continue the regimen for the next three months. The insulin dose was titrated by flexible evidence-based guidelines upon the discretion of the treating physician.

RESULTS

The mean age was 60.4 ± 10.5 years with female predominance (55.1%). Mean baseline HbA1c was $9.24 \pm 1.52\%$. Humalog Mix50 resulted in lower overall average self-monitored blood glucose (SMBG) (8.55 ± 0.51 mmol/L versus 9.01 ± 0.52 mmol/L, $p < 0.001$) and lower average last week SMBG (8.26 ± 0.98 versus 8.89 ± 1.13 mmol/L, $p = 0.006$) compared to NPH insulin. When individual 7-point SMBG values were compared, the significance was seen in post-dinner, 0200H and pre-breakfast values. There was no significant difference in HbA1c at the end of 12 weeks ($8.64 \pm 1.46\%$ versus $8.75 \pm 1.33\%$, $p = 0.626$). There were no severe hypoglycaemic events with Mix50. Both Mix50 and NPH had similar proportions of patients with mild and moderate hypoglycaemic events. There was a significant but small weight gain with Mix50 compared to NPH (1.2 ± 5.71 kg vs 0.51 ± 1.2 kg, $p = 0.022$). Mean stable insulin dose was similar with both treatments (22.2 ± 6.1 units Mix 50 versus 20.5 ± 6.4 units NPH, $p = 0.146$).

CONCLUSION

Humalog Mix50 once daily at dinner lowers blood glucose better compared to NPH, with similar hypoglycaemic events.