Introduction

• Insulin detemir was developed as a long-acting, soluble insulin analog to provide constant basal levels of circulating insulin with a smooth and predictable action profile.
• The protracted effect of insulin detemir is mediated by a combination of increased self-association and albumin binding via the covalently-attached fatty acid residue.
• Type 1 and Type 2 diabetes. The efficacy and safety of insulin detemir (IDet) was recently compared with NPH insulin (NPH) in a number of phase III trials in people with Type 1 (IDet: n=1336, NPH: n=814) and Type 2 (IDet: n=536, NPH:n=526) diabetes, treated between 16 and 24 weeks, on a basal-bolus regimen.
• Insulin detemir offers improved glycemic control compared with NPH in people with diabetes.

Trial design and subjects

• This was a meta-analysis of pooled data from 6 multinational, open labeled, parallel group phase 3 trials in subjects with Type 1 or Type 2 diabetes.6
• Subjects were randomized either 1:1 or 2:1 to receive insulin detemir or NPH insulin in a basal-bolus regimen for 4 to 6 months.
• Subjects were individually titrated according to standard blood glucose targets.

Results

• Glycemic control as measured by HbA1c and FPG(lab) was significantly lower with insulin detemir compared with NPH insulin (Table 2 and Figure 1).
• Improvement in glycemic control were achieved without an increase in the risk of nocturnal or 24-hrs hypoglycemia.7
• Body weight was significantly lower at the end of treatment with insulin detemir compared with NPH insulin (Table 2 and Figure 2).

Conclusions

• Insulin detemir provides better glycaemic control, as measured by HbA1c and FPG(lab), compared with NPH insulin in people with diabetes.
• Fasting blood glucose was more reliable, occurring in a narrower range from day-to-day with insulin detemir than with NPH insulin.
• Advantages in glycaemic control with insulin detemir were achieved with little or no change in body weight, whereas subjects on NPH insulin experienced substantial weight gain with inferior control.

References