Insulin suspension isophane: nocturnal glucose control

Administering insulin suspension isophane [NPH insulin] at bedtime, instead of at dinner, reduces the risk of nocturnal hypoglycaemia in patients with type 1 diabetes mellitus, report researchers from Italy.[1]

In this study, 22 such patients, who were undergoing long-term intensive insulin therapy, received dinnertime insulin and insulin suspension isophane at bedtime (split-treatment), and mixed treatment with insulin and insulin suspension isophane at dinner, for 4 months each in a crossover fashion.

Dinnertime insulin plus bedtime insulin suspension isophane was associated with a significantly lower frequency of nocturnal hypoglycaemic episodes than mixed dinnertime insulin plus insulin suspension isophane (0.1 *vs* 0.28 episodes per patient per day). In addition, administration of the split-treatment regimen, compared with the mixed-treatment regimen, decreased the proportion of glycosylated haemoglobin, and mean daily, fasting and before-lunch plasma glucose levels, by a significantly greater extent. The researchers conclude that '*whenever possible, patients with type-1-diabetes should be given the split insulin regimen in the evening*'.

In an accompanying editorial, Drs Andrew Norris and Lori Laffel, from Harvard Medical School, Boston, US, caution that the conclusion reached in the above-mentioned study is overly strong.[2] They note concerns regarding the limited sample size of the study, the narrow age range of the participants and the fact that patient groups at the highest risk for hypoglycemia were excluded. They conclude that '*evidence now suggests that for a selected group of persons with type 1 diabetes mellitus, an extra shot at bedtime should be considered, although newer insulin analogues may yield additional approaches and benefits in the near future.*'

1. FANELLI CG, et al. Administration of neutral protamine hagedorn insulin at bedtime versus with dinner in type 1 diabetes mellitus to avoid nocturnal hypoglycemia and improve control: a randomized controlled trial. Annals of Internal Medicine 136: 504-514, 2 Apr 2002.
2. Norris AW, et al. Avoiding nocturnal hypoglycemia: consideration of an extra injection at bedtime. Annals of Internal Medicine 136: 547-549, 2 Apr 2002.

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