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Meta-analysis of the benefits of inhaled insulin in young diabetic patients above 12 years of age

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Diabetes mellitus is a major cause of death and disability. Individuals have had to deal with painful injections; inhaled insulin may be beneficial for glycaemic control. The primary objective of this study was, to assess the benefits of inhaled insulin for glycaemic control in insulin-dependent and insulin-resistant patients older than 12 years.

ADA website, Cochrane databases, and Medline were searched for randomised clinic trials published in English between 2000 and 2003. Relevant studies were identified and selected for our review and meta-analysis. Data extractions were assessed by two reviewers.

Seven randomised control trials were included, involving 1689 participants in total. Four studies included patients with type 1 diabetes and three those with type 2 diabetes. All were open label, comparing inhaled insulin to subcutaneous insulin for the duration of ≥ 12 weeks. There was no difference in the proportion of participants achieving $HbA1C \geq 7\%$. The estimated average relative risk was equal to 0.1420 (95% CI: -0.0313 to +0.3154). The results suggest that the benefits in the treatment group is on average 14.2% less than the risk that in the control group. The null hypothesis that the average true effect is equal zero is only marginally rejected ($z=1.606$, $p=0.108$), i.e. at about 10% significance level. Statistically, the differences in results were not quite significant, i.e. they lead toward the same conclusion.

Therefore, we concluded that there is evidence that Inhaled insulin may offer similar benefits for glycaemic control compared to subcutaneous insulin for patient's ≥ 12 years-old of age. Further studies are suggested regarding its benefits in diabetes-related acute and chronic events and its effectiveness alone.

Biography

Dr Alain is an academic researcher, graduated from African, European and American prestigious universities, trained from old and sophisticated setting with a medical experience of more than 20 years in advanced medical fields; including: internal medicine, Diabetology, Paediatric and Clinical Research. He is a member of International Society of Pediatric and Adolescent Diabetes (ISPAD) and Danish Academic of Diabetes and he has published more than 10 articles on the management of diabetes.

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