ORIGINAL ARTICLE

Resource Consumption and Costs of Treatment in Patients with Type 1 Diabetes under Intensified Conventional Therapy under German Real-Life Conditions

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Abstract

Introduction:

The aim of this study was to compare, from the perspective of the statutory health insurance, resource consumption and the associated adjusted treatment costs of intensified conventional therapy (ICT) with long-acting insulins in patients with type 1 diabetes mellitus (T1DM).

Methods:

We identified patients with T1DM who started ICT with either insulin glargine or neutral protamine Hagedorn (NPH) insulin between July 2000 and February 2008 using a representative German database (IMS® Disease Analyzer). The variables age, gender, insurance status, diabetes duration, hemoglobin A1c level, body mass index, and geographic region and specialization of practice were collected. Resource consumption was evaluated over a time period of 12 months and included the quantities of applied basal and bolus insulin, blood glucose test strips, lancets and needles, physician visits (general practitioner, specialist), hospitalization, and antihypoglycemic therapy (intravenous glucose/glucagon).

Results:

A total of 2297 patients with T1DM were included; 1079 received ICT with insulin glargine and 1218 with NPH insulin. After adjustment, annual cost savings in favor of insulin glargine amounted to €423.94 compared with NPH insulin ($p = .3019$).

Discussion:

The adjusted results show that an ICT with insulin glargine results in lower annual costs than ICT with NPH insulin (this difference was not statistically significant). However, in the context of glucose-lowering effect and a lower hypoglycemia rate, insulin glargine is preferred to NPH insulin for patients with T1DM undergoing ICT.

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Abbreviations: (ATC) anatomical therapeutic chemical, (BMI) body mass index, (CUA) cost–utility analysis, (HbA1c) hemoglobin A1c, (ICT) intensified conventional therapy, (NPH) neutral protamine Hagedorn, (QALY) quality-adjusted life year, (T1DM) type 1 diabetes mellitus

Keywords: basal insulin, cost comparison, insulin glargine, neutral protamine Hagedorn insulin, resource consumption, type 1 diabetes mellitus

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