The COMPACT-Study*: Pioglitazone vs. Insulin for the Treatment of Patients with Type 2 Diabetes Mellitus – A Medical and Pharmacoeconomic Analysis

Background: Pioglitazone, a thiazolidinedione, is a member of oral antidiabetic agents targeted to treat insulin resistance, the major underlying cause of type 2 diabetes mellitus. Insulin resistance is believed to be the "gold standard" for achieving optimal glycemic control. The COMPACT-Study aimed to compare both treatment options with regard to metabolic control and cost effectiveness in a real-life setting.

Method: COMPACT is a prospective, multi-center, controlled, non-randomized observational study where patient selection, allocation to treatment, and dose were left to the physicians’ discretion. Standard quality assurance included plausibility checks, regular monitoring, and a central laboratory. The primary variable was change in HbA1c compared to baseline (Δ HbA1c), where a decrease of blood glucose as well as in an improvement of the leading pathophysiological characteristics of type 2 diabetes, insulin resistance and decreased beta cell function are revealed to be the most cost-effective (Δ HbA1c/1,000 costs) in the pioglitazone group and is expected to complete in 2005.

RESULTS

Effectiveness analysis (ITI)

Pioglitazone proved to be inferior to INS treatment regarding the following objectives:

- Change in HbA1C compared to baseline: PIO, -0.65 %points (95% CI: -0.31; -0.56) vs. INS, 38.4 %
- Change in fasting plasma glucose: PIO, 24.5 mg/dL (95% CI: -11.4; -35.6) vs. INS, 38.1%
- Costs per 0.5 %points reduction in HbA1c ≥ 0.5 %points in the insulin group.

Economic perspective

- Cost-effectiveness analysis: Change of HbA1c per 1,000 costs.
- Costs per reduction in HbA1c ≥ 0.5 %points
- Paper’s perspective

CONCLUSION / DISCUSSION

- Pioglitazone proved to be inferior to INS treatment in terms of metabolic control as well as cost-effectiveness.
- In addition, significantly more patients in the PIO arm showed an HbA1c decrease of ≥ 0.6 % compared to INS using the ADA criteria for treatment response.
- The results of the COMPACT-Study® are crucial for target therapies to specific patient profiles in order to achieve the best clinical outcomes with the lowest amount of resources spent.
- The greatest proportion of treatment costs was allocated to the management of microvascular complications. Therefore, in light to focus Therapeutic Interventions on primary and secondary prevention of these complications. Therefore, in light to focus Therapeutic Interventions on primary and secondary prevention of these complications. Therefore, in light to focus Therapeutic Interventions on primary and secondary prevention of these complications. Therefore, in light to focus Therapeutic Interventions on primary and secondary prevention of these complications.