OBJECTIVE: A cost-effectiveness analysis was conducted to compare the long-term clinical and economic benefits of nateglinide, a new oral antidiabetic drug (OAD), plus metformin with metformin plus other OAD and with metformin alone in patients with type 2 diabetes whose glycemia is not controlled with metformin monotherapy.

METHODS: The health status of a cohort of 10,000 type 2 diabetic patients at risk of developing microvascular and macrovascular complications was simulated by a Markov model, tracking patient evolution over 30 years in one year periods. The risk of microvascular complications was based on published longitudinal studies. A Weibull model predicted the incidence of macrovascular complications depending on the level of glycemic control (measured both in terms of HbA1c level and postprandial glucose) and other patient characteristics. Costs of complications were assessed as event costs covering the acute and first-year management of the complication and state costs, which occur in years after the event. The primary outcome measure was the cost per Life Year Saved (LYS). The analysis was conducted from a health-care-payer perspective. Costs were discounted by 5% per year.

RESULTS: Type 2 diabetic patients taking nateglinide plus metformin would live from 0.11 to 0.39 years more than patients taking metformin plus OAD or metformin alone. The total costs over the entire time horizon ranged from 18,020 Euros for metformin alone to 20,694 Euros for metformin plus nateglinide. The resulting cost-effectiveness ratios (from 6,234 to 11,360 Euros per LYS) with nateglinide are well within what is considered as cost-effective care. In the sensitivity analysis, the impact of the observed variation was moderate or in favour of nateglinide plus metformin.

CONCLUSION: Nateglinide in combination with metformin is likely to be a cost-effective investment in type 2 diabetic patients inadequately controlled with metformin alone.