



<b>Title</b>	<b>Efficacy of Rosiglitazone and Pioglitazone Compared to Other Anti-diabetic Agents: Systematic Review and Budget Impact Analysis</b>
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## Aim

- To evaluate the evidence that compares rosiglitazone or pioglitazone with other oral anti-diabetic agents, either as monotherapy or when added to a non-thiazolidinedione agent in the treatment of type 2 diabetes
- To perform a budget impact analysis projecting costs associated with the listing of thiazolidinediones on formularies of publicly funded drug plans in Canada.

## Conclusions and results

*Clinical Efficacy:* Eleven rosiglitazone trials and eight pioglitazone trials met the selection criteria. Most studies involved an observation period of one year or less. When used as monotherapy in adults with type 2 diabetes, both rosiglitazone and pioglitazone have an effect on HbA1c (glycosylated hemoglobin) and FPG (fasting plasma glucose) similar to the effect observed with non-thiazolidinedione comparator drugs. These findings are, however, based on a small number of comparative trials.

When added to another anti-diabetic agent, both thiazolidinediones produce a significantly greater effect on HbA1c and FPG than continuing monotherapy with the other agent, in patients with type 2 diabetes not well controlled on a single agent. Both drugs were generally well tolerated, with no serious liver adverse events reported.

*Budget Impact Analysis:* If rosiglitazone and pioglitazone were to receive formulary listing throughout Canada, it is estimated that by 2004 the net expenditure for publicly funded drug programs would increase nationally between \$11.8 and \$88.5 million per year. This estimate depends on utilization and number of patients treated.

## Recommendations

Not applicable.

## Methods

The published literature from 1990 to 2001 was searched, and information received from the manufacturers of the two drugs was reviewed. Two independent reviewers selected relevant studies and extracted data. FPG and HbA1c were considered as primary outcomes, along with secondary outcomes such as cholesterol and triglyceride levels. The budget impact analysis was undertaken from the perspective of a Canadian provincial drug plan. This analysis focused on the potential impact on macro-level costs that the introduction of pioglitazone and rosiglitazone could cause for the year 2004.

## Further research/reviews required

Longer-term studies are required to evaluate the effect of rosiglitazone and pioglitazone on the development of diabetic complications and to assess the long-term safety of these drugs.