

What is already known about costs and cost-effectiveness of prevention of type 2 diabetes in women with gestational diabetes?

Alternative title: A systematic review on costs and cost-effectiveness of screening and prevention of type 2 diabetes in women with prior gestational diabetes: exploring uncharted territory

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Objectives. Women with a history of gestational diabetes mellitus (GDM) are at increased risk to develop type 2 diabetes mellitus (T2DM), compared to women with normoglycemic values during pregnancy. The aim of this systematic review was to assess costs and cost-effectiveness of screening and prevention programs of T2DM in women with prior GDM.

Methods. PubMed, EMBASE, EconLit, Web of Science and the Cochrane Library were searched using a comprehensive, systematic approach (last search: 2017 July 4). Inclusion criteria were: (1) women with (prior) GDM; (2) post-partum screening or prevention of T2DM; and (3) full or partial health-economic evaluations. The methodological quality was assessed by two reviewers using the Consensus Health Economic Criteria checklist.

Results. Starting from 1597 records, four model-based studies were included: two cost-effectiveness analyses and two cost analyses. Time horizons varied from 10 to 25 years; discount rates were 5% or not reported. The methodological quality was rather poor. Regarding screening, one study compared nine possible screening strategies stating that one oral glucose tolerance test (OGTT) per three years leads to the lowest cost per case detected (388 US \$; reference year (RF) 2005). Regarding prevention, three studies each evaluated one strategy (one intensive and two counseling prevention programs), suggesting that prevention could be cost-effective (1200 or 2400 Australian \$ per life year gained; estimated RF 1996) or cost-saving (31.9 million US \$ net savings; RF 1990). In the third study about prevention, costs per case were reported (€ 12.1 for the prevention program and € 1097.9 for costs of T2DM; RF 2003); however, no further cost- of cost effectiveness analyses were reported.

Discussion. The findings of this systematic review suggested that one OGTT per three years leads to the lowest cost per case detected, and that prevention could be cost-effective or cost-saving. However, there is a large literature gap regarding costs and cost-effectiveness of screening and prevention programs of T2DM in women with prior GDM. Only four studies were found, of which some were outdated and all were showing large methodological shortcomings. Determinants of cost-effectiveness could not be identified. Future health-economic research is needed, and several articles are now available that could provide substantiated input for a decision-analytic model. Hence, we recommend a model-based health-economic evaluation that evaluates several strategies including the option “no screening or prevention”.