
Blood glucose and schizophrenia: a systematic review of prospective randomized clinical trials

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CRD summary

This review assessed the impact of antipsychotic treatment for schizophrenia on glucose parameters. The authors concluded that there was insufficient evidence to reach conclusions about patients who received such treatment in the longer term. This conclusion accurately reflected the results of the review, but poor reporting and lack of a validity assessment meant its reliability is unclear.

Authors' objectives

To assess the impact of antipsychotic medication on glucose parameters in schizophrenic patients.

Searching

EMBASE, HealthSTAR, MEDLINE/Pre-MEDLINE and PsycINFO were searched. Search terms were reported. Conference abstracts from five relevant associations were searched between January 2000 and April 2006. Websites including the US Food and Drug Administration, internet journals and journals not linked through Index Medicus were searched, as were other internet sources of antipsychotic trials.

Study selection

Randomised controlled trials (RCTs) of different antipsychotics in schizophrenic patients were eligible for inclusion in the review if they reported glucose parameters such that longitudinal comparisons were possible. Studies in which patients had existing known diagnoses of significant glucose abnormalities at entry were excluded from the review. Most patients in the included studies were treated with aripiprazole, olanzapine, clozapine, ziprasidone or placebo. Most studies reported either fasting or non-fasting glucose levels. Study duration ranged from six weeks to two years. In most cases trials assessed direct comparisons between antipsychotics; in some instances aripiprazole was compared to placebo.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality

The authors did not report that they assessed validity.

Data extraction

Data were extracted on all available glucose parameters and on insulin levels. The authors stated neither how the data extraction was performed nor how many reviewers performed the data extraction.

Methods of synthesis

The studies were combined in a narrative synthesis that discussed trials in which significant effects were observed. Differences between the studies were apparent from the evidence tables.

Results of the review

Twenty-two RCTs (n=6,329) were included in the review. There were some discrepancies between the text and tables.

One RCT compared olanzapine and ziprasidone and found the olanzapine group had significantly greater increases in HbA1c (p<0.05). A second RCT showed a significantly higher level of fasting glucose in the olanzapine group compared with haloperidol, clozapine or risperidone (p<0.02). A third trial found no significant inter-group difference, but a significant decline in HbA1c in the haloperidol and not the quetiapine group.

No other significant differences between any of the antipsychotic treatment groups were reported by any RCT for any

glucose parameter.

Authors' conclusions

There were insufficient data to reach conclusions about patients who received longer-term treatment with atypical antipsychotics.

CRD commentary

The review question and the inclusion criteria were clear if broad with respect to participants and interventions. The authors searched a number of relevant databases and other sources, reducing the risk of publication bias or the exclusion of relevant studies. The use of methods designed to reduce reviewer bias and error in the review process was not reported. The authors did not assess study validity, making it difficult to assess the evidence on which the conclusions were based. The decision to adopt a narrative synthesis was appropriate given the clinical heterogeneity of the included studies. Given the lack of validity assessment and poor reporting of the review process, the reliability of the authors' conclusions is unclear.

Implications of the review for practice and research

Practice: The authors did not state any implications for practice.

Research: The authors stated that atypical antipsychotics in clinical development should be assessed for their longer term impact on glucose metabolism compared to existing atypical antipsychotics.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.