
Antipsychotic-induced weight gain in chronic and first-episode psychotic disorders: a systematic critical reappraisal

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CRD summary

The authors concluded that antipsychotic-induced weight gain was 3-fold to 4-fold greater in young patients with first-episode psychosis, in both long-term and short-term medications, compared to patients with chronic psychotic disorders. The review process was limited by methodological flaws in the areas of study selection and quality assessment; therefore the authors' conclusions may not be reliable.

Authors' objectives

To estimate the effects of three antipsychotics (olanzapine, risperidone or haloperidol) on weight gain in patients with chronic and first-episode psychotic disorders.

Searching

The following databases were searched from inception to July 2007: MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials. Search terms were reported. The reference lists of retrieved publications were also screened. Only studies published in peer-reviewed English language journals were considered.

Study selection

Randomised controlled trials (RCTs) which compared antipsychotics (olanzapine, risperidone or haloperidol) with either placebo or an active comparator, with reported data regarding weight change (body mass index (BMI); change or percentage of weight gain) in patients aged 16 to 65 years with psychotic disorders (defined using recognised criteria) were eligible for inclusion. Trials that addressed adjunctive interventions to prevent antipsychotic-induced weight gain were excluded, as were trials having follow-up shorter than 3 weeks, reporting combined data from different trials or evaluating different switching techniques. Trials which included patients with a co-morbid psychiatric diagnosis requiring additional pharmacological treatment were also excluded. The outcomes reported in the review included mean weight gain and proportion of participants increasing their body weight by $\geq 7\%$.

Thirty-nine trials had short-term (<9 months) follow-up and twelve trials had long-term (≥ 9 months) follow-up.

One reviewer assessed studies for inclusion.

Assessment of study quality

The authors did not state that they assessed validity.

Data extraction

Data on the point estimates (mean weight gain, proportion of participants increasing their body weight by $\geq 7\%$ and baseline BMI) were extracted.

Two reviewers independently extracted the data from studies but it was unclear how disagreements were resolved.

Methods of synthesis

The trials were combined in a narrative synthesis. Trials were grouped according to the phase of the illness (chronic versus first-episode) and the duration of the trial (short-term versus long-term).

Results of the review

Fifty-one RCTs (n=14,769) were included in the review.

Weight gain in patients with chronic psychotic disorders

Short-term trials (33 RCTs; follow-up 6-28 weeks): olanzapine-induced weight gain was estimated to range from 1.80 to 5.40 kg; risperidone-induced weight gain was estimated to range from 1.0 to 2.30 kg; and haloperidol-induced weight gain was estimated to range from 0.01 to 1.40 kg.

Long-term trials (eight RCTs; follow-up 12-18 months): olanzapine-induced weight gain was estimated to range from 2.0 to 6.2 kg; risperidone-induced weight gain was estimated to range from 0.4 to 3.9 kg; and haloperidol-induced weight gain was estimated to range from -0.70 to 0.4 kg.

Weight gain in patients with first-episode psychosis

Short-term trials (six RCTs; follow-up 10-12 weeks): olanzapine-induced weight gain was estimated to range from 7.1 to 9.2 kg; risperidone-induced weight gain was estimated to range from 4.0 to 5.6 kg; and haloperidol-induced weight gain was estimated to range from 2.6 to 3.8 kg.

Long-term trials (four RCTs; follow-up 1-2 years): olanzapine-induced weight gain was estimated to range from 10.2 to 15.4 kg; risperidone-induced weight gain was estimated to range from 6.6 to 8.9 kg; and haloperidol-induced weight gain was estimated to range from 4.0 to 9.7 kg.

Subgroup analyses assessing the effects of antipsychotics on the proportion of patients increasing their body weight by $\geq 7\%$ were also reported.

Authors' conclusions

Antipsychotic-induced weight gain was 3-fold to 4-fold greater in young patients with first-episode psychosis in both long-term and short-term medications, compared to patients with chronic psychotic disorders.

CRD commentary

The inclusion criteria of the review were clear. Several relevant databases were searched. The decision to restrict the review to published studies reported in English may have increased the chances of both publication and language biases. Steps were taken to minimise bias by having more than one reviewer independently undertake the data extraction, but only one reviewer performed the study selection. Adequate details of the primary studies were provided. However, a formal validity assessment was not carried out. The authors did not assess the level of clinical heterogeneity between the included studies. It was difficult to assess whether the decision to adopt a narrative synthesis was appropriate. Furthermore, the absence of two reviewers at the study selection phase and a lack of study quality assessment represent substantial limitations for evaluating the reliability of the review. The authors' conclusions reflected the evidence presented; however, without further details on study quality and given the other methodological concerns, it is difficult to judge their reliability.

Implications of the review for practice and research

Practice: The authors stated that there is a need for the implementation of adjunctive interventions to prevent antipsychotic-induced weight gain for young patients with first-episode psychotic disorders when antipsychotic medication is commenced.

Research: The authors did not state any implications for further research.

Funding

Marques de Valdecilla Research Institute (FMV-IFIMAV), Marques de Valdecilla Public Foundation.

Bibliographic details

Alvarez-Jimenez M, Gonzalez-Blanch C, Crespo-Facorro B, Hetrick S, Rodriguez-Sanchez J M, Perez-Iglesias R, Vazquez-Barquero J L. Antipsychotic-induced weight gain in chronic and first-episode psychotic disorders: a systematic critical reappraisal. *CNS Drugs* 2008; 22(7): 547-562

PubMedID

18547125

Indexing Status

Subject indexing assigned by NLM

MeSH

Antipsychotic Agents /adverse effects; Humans; Psychotic Disorders /classification /drug therapy; Weight Gain /drug effects

AccessionNumber

12008106076

Date bibliographic record published

02/03/2009

Date abstract record published

29/04/2009

Record Status

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.