Intramuscular olanzapine: a critical-meta-analytic overview of some recent issues

CRD summary
The authors compared the effects of intramuscular olanzapine with other drugs used in agitated psychotic disorders and Alzheimer's disease. They concluded that intramuscular olanzapine was superior to the comparator treatments with regard to the outcomes assessed. However, poor reporting of all aspects of the review means that the reliability of the conclusions is unclear, and they should be interpreted with caution.

Authors' objectives
To compare some of the effects of intramuscular (IM) olanzapine with other drugs used in agitated psychotic disorders and Alzheimer's disease.

Searching
MEDLINE, Excerpta Medica and PsycLIT were searched until 2006 for studies in English; some search terms were reported.

Study selection
Specific interventions included in the review
Placebo-controlled studies of IM olanzapine versus haloperidol, benzodiazepines and placebo were eligible for inclusion. Studies with additional arms were also included. Details of doses were not given.

Participants included in the review
The authors did not state inclusion criteria relating specifically to the participants, but it appears that those included in the review were diagnosed with schizophrenia, bipolar disease and Alzheimer's disease.

Outcomes assessed in the review
Inclusion criteria for the outcomes were not specifically stated. The outcomes included in the review were: lack of effect by 2 hours, early departure from study, requiring further IM injection, requiring further benzodiazepine, any adverse event, extrapyramidal side-effects (EPS) requiring anticholinergic medicine, dystonia, extrapyramidal syndrome and treatment emergent akathisia.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Study quality appears to have been scored by a checklist of the following aspects: the presence of patients observed with and without IM olanzapine, randomisation, blinding and the numbers of patients per treatment group. The authors did not state how the validity assessment was performed.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The data they extracted included trial design, diagnosis and outcomes. Odds ratios (ORs) and risk ratios were calculated for each outcome.
Methods of synthesis

How were the studies combined?
The ORs for each outcome were pooled in a random-effects meta-analysis.

How were differences between studies investigated?
The authors stated that differences between the studies were investigated, but they did not provide details of the methods used or the results obtained.

Results of the review

Four RCTs were included in the review. The total number of participants was unclear.

No numerical outcome data were presented, but graphical presentation of pooled ORs indicated that the following outcomes significantly favoured IM olanzapine over placebo and other treatment groups: lack of effect by 2 hours, leaving the study early, requirement of a further IM injection, dystonia and extrapyramidal syndrome.

The results for requirement of further benzodiazepines, any adverse events, EPS requiring anticholinergic medications, and treatment emergent akathisia did not appear to be statistically significant.

Authors’ conclusions

IM olanzapine is superior to the comparator treatments with regard to all the outcome measures investigated.

CRD commentary

The research question was well defined but, although the inclusion criteria were clear with regard to study design and intervention, there were no criteria relating to patient characteristics or outcomes. This might have resulted in subjective decisions regarding inclusion. The authors searched three relevant databases, but the search only included papers in English, which might have introduced language bias. In addition, the authors did not report making attempts to identify unpublished studies, which may also have increased the possibility that some relevant studies were not included in the review. The authors did not specify how they made inclusion decisions, how they extracted the data or how they performed the validity assessment, so it is not known whether they took steps to minimise bias or error in the review process. Study validity was assessed by a checklist, developed by the authors, which did not differentiate between the studies included.

The authors stated that they tested between-study variance, but neither the methods employed nor the results obtained were reported. Also, there was insufficient information about the individual studies to assess the appropriateness of combining them in a meta-analysis. Since the results were not reported in full, it is difficult to assess whether they support the authors’ conclusions. Poor reporting of review methodology, the included studies and review results mean that these conclusions might not be reliable and should be interpreted with caution.

Implications of the review for practice and research

Practice: The authors stated that caregivers should follow carefully how and when to use IM olanzapine.

Research: The authors stated that more studies are needed to further clarify issues regarding safety and efficacy of IM olanzapine, and that future studies should also focus on investigating how the drug interacts with other medications.

Funding

Eli Lilly Italia; AstraZeneca.

Bibliographic details


**Indexing Status**
Subject indexing assigned by CRD

**MeSH**
Acute Disease; Alzheimer Disease /drug therapy; Antipsychotic Agents /administration & dosage /therapeutic use; Benzodiazepines /administration & dosage /adverse effects /therapeutic use; Dementia /complications /psychology; Dose-Response Relationship, Drug; Injections, Intramuscular /methods; Psychomotor Agitation /drug therapy; Serotonin Uptake Inhibitors /administration & dosage /adverse effects /therapeutic use; Treatment Outcome

**AccessionNumber**
12007007122

**Date bibliographic record published**
31/01/2008

**Date abstract record published**
31/01/2008

**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.