The benefits of steroids versus steroids plus antivirals for treatment of Bell's palsy: a meta-analysis

Quant E C, Jeste S S, Muni R H, Cape A V, Bhussar M K, Peleg A Y

CRD summary
This review evaluated whether steroid treatment plus antivirals provided a greater degree of facial muscle recovery than steroids alone in patients with Bell's palsy. The authors concluded that combined treatment provided no additional benefit in achieving at least partial facial muscle recovery. This was a generally well-conducted review, and the authors' conclusion is likely to be reliable.

Authors' objectives
To evaluate whether the use of steroid treatment plus antivirals provides a greater degree of facial muscle recovery than steroids alone, in patients with Bell's palsy.

Searching
PubMed, EMBASE, Web of Science, and the Cochrane Central Register of Controlled Trials were searched from 1984 to January 2009 to identify relevant studies for inclusion in the review. Search terms were reported. Reference lists of systematic reviews were also searched to locate additional studies, and there were no language restrictions.

Study selection
Randomised controlled trials (RCTs) with at least one month of follow up after the initiation of treatment, and comparing steroids with combined steroid and antiviral therapy, in patients with Bell's palsy, were eligible for inclusion in the review. Studies of children or pregnant women were excluded, as were those comparing steroids with antivirals alone. The proportion of patients with at least partial facial muscle recovery, assessed using a recognised grading system (such as House-Brackmann, Yanagihara, or the facial paralysis recovery index), was the eligible outcome of interest. The severity of facial muscle paralysis at baseline differed between the included studies, as did the definitions of complete and partial facial muscle recovery. The included steroid was oral prednisone or prednisolone; the included antivirals were acyclovir, valacyclovir, and famcyclovir. A variety of dosing regimens were reported. The authors neither stated how papers were selected from the review, nor how many reviewers performed the selection.

Assessment of study quality
Trial quality was assessed using the Jadad score which evaluates the randomisation process, blinding, and the description of withdrawals or dropouts. Scores were allocated from one (lowest quality) to five (highest quality). Where Jadad scores were equal, the highest ranking was awarded to the larger sample size.

Two independent reviewers assessed trial quality.

Data extraction
Two independent reviewers extracted the data in order to calculate the odds ratios (ORs) and 95% confidence intervals (CIs). Intention-to-treat data were extracted, where possible. Authors were contacted for missing data, where necessary. Disagreements were resolved by a third reviewer.

Methods of synthesis
A random-effects meta-analysis was used to calculate pooled ORs and 95% CIs. Publication bias was assessed using a funnel plot and explored with a trim and fill analysis. Heterogeneity was assessed using the I² statistic, and the following sources of potential variation were explored: trial quality, time between symptom onset and treatment (three days or less and over three days), length of follow up (three months or less and over three months), and antiviral type. Sensitivity analysis was performed to assess the inclusion of patients lost to follow up (using a fixed-effect model), and to account for potentially missing studies.

Results of the review
Six RCTs (1,145 patients) were included in the meta-analysis. Two trials had a Jadad score of five; one scored four; two scored three, and one scored one. The length of follow up ranged from four months to over 12 months.

A substantial proportion of patients (89.7%) achieved at least partial facial muscle recovery following treatment with steroids or combined therapy. Although combination therapy was favourable, pooled analysis showed that there was no statistically significant difference in the extent of facial muscle recovery when this treatment was compared with steroids alone (odds ratio 1.50; 95% CI: 0.83 to 2.69). This result was unaltered in sensitivity analysis including patients lost to follow up.

Heterogeneity was present ($I^2=47.1\%$), and an exploration of variables revealed that lower quality studies provided the majority of evidence in favour of combination therapy, but this was not statistically significant. There were no other significant influences in the exploration of heterogeneity. Publication bias was observed, and the effect of combination therapy was reduced when the trim and fill method was applied.

**Authors' conclusions**
Combined treatment using steroids and antivirals compared with steroids alone provided no additional benefit in achieving at least partial facial muscle recovery in patients with Bell's palsy.

**CRD commentary**
This review addressed a clear question, and this was supported by potentially reproducible inclusion criteria. The search strategy included various relevant sources, and attempts were made to minimise any language bias. There was no apparent attempt to locate unpublished material. Publication bias was found to be present, and this was explored by appropriate methods. A relevant validity assessment tool was used to assess the trial quality. Attempts were made in the processes of data extraction and quality assessment to minimise reviewer errors and bias, but it is not clear how the trials were selected beyond the search stage of the review. Adequate study details were provided, and the chosen method of synthesis appears to have been appropriate in the presence of heterogeneity. Variation across the included trials was explored in subgroup analyses and the results of these were used to help interpret the final result. This was a generally well-conducted review, and the authors' conclusion is likely to be reliable.

**Implications of the review for practice and research**

**Practice:** The authors stated that the routine addition of antivirals to steroids in treating Bell's palsy was not currently supported.

**Research:** The authors stated that prospective double-blind studies using modern diagnostic methods (such as polymerase chain reaction for the detection of Herpes virus reactivation) were needed. Trials should use the newer antivirals available (such as valacyclovir or famcyclovir) and assess patients with more severe facial paralysis at baseline.

**Funding**
American National Cancer Institute (K12CA090354); American Academy of Neurology; Canadian National Institute for the Blind; University of Queensland.

**Bibliographic details**

**PubMedID**
19736282

**DOI**
10.1136/bmj.b3354

**Original Paper URL**
Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Antiviral Agents /therapeutic use; Bell Palsy /drug therapy; Drug Therapy, Combination; Humans; Randomized Controlled Trials as Topic; Steroids /therapeutic use; Treatment Outcome

AccessionNumber
12009108215

Date bibliographic record published
23/09/2009

Date abstract record published
30/09/2009

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.