Corticosteroid and antiviral therapy for Bell's palsy: a network meta-analysis
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CRD summary
The review concluded that treating Bell's palsy with antiviral treatment plus corticosteroid may lead to slightly higher recovery rates compared with treating with prednisone alone (without reaching statistical significance) and that prednisolone remains the best evidence-based treatment. Though studies may have been missed, the authors' conclusions reflect the evidence available and appear likely to be reliable.

Authors' objectives
To conduct a network meta-analysis for assessing the efficacy of steroids, antiviral treatment or both combined for treating adult Bell's palsy.

Searching
MEDLINE (to August 2010) and EMBASE (to September 2010) were searched for studies in English; search terms and full search strategies were reported. Reference lists of retrieved papers were also searched for additional papers.

Study selection
Randomised controlled trials (RCTs) that treated adults (aged 18 years and over) with steroids, antiviral treatment or both combined were eligible for inclusion. The primary outcome was complete recovery rate at three and six months.

The antiviral treatments used were acyclovir or valacyclovir. Prednisolone was used in all studies and placebo was the most common comparator. Mean ages ranged from 40 to 50 years and the percentage of female patients ranged from 45% to 59%. A variety of tools were used to assess complete recovery.

One reviewer assessed study eligibility, which was checked by a second reviewer.

Assessment of study quality
Two reviewers independently assessed study quality using a modified Jadad scale which assessed the following criteria: randomisation technique, allocation concealment, blinding, intention-to-treat and patient attrition. Each criterion was graded 0, 1 or 2 (which reflected the methods description as either inappropriate, partially appropriate or appropriate).

Data extraction
Data were extracted in order to calculate odds ratios (OR) for complete recovery, which was defined as a score of 2 or below on the House-Brackmann Facial Recovery Scale, 8 or above on the Facial Palsy Recovery Index, above 36 on the Yanagihara score and 100 on the Sunnybrook scale. Authors were contacted for further information when necessary.

Two reviewers independently extracted data, with disagreements resolved by discussion.

Methods of synthesis
For pairwise meta-analyses, data were pooled and presented with 95% confidence intervals (CI) using a random-effects model when heterogeneity was present (assessed using Q and I²). Meta-regression was used to investigate the effect of age, gender and study quality. Funnel plots were used to detect possible publication bias.

A mixed-effects hierarchical model was used for the network meta-analysis; treatments were included as fixed-effect and studies were included as random-effects. Likelihood estimates were used to estimate model parameters, with goodness of fit assessed using the Hosmer-Lemeshow X² test. The number needed to treat was also calculated.

Results of the review
Six studies (1,805 patients) were included. The median quality assessment score was 8 (range 2 to 12). Follow-up periods ranged from three to 12 months.

In the network meta-analysis, there were no significant differences for resolution at three months for acyclovir plus...
prednisolone (OR 1.24, 95% CI, 0.79 to 1.94) and for valacyclovir plus prednisolone (OR 1.02, 95% CI, 0.73 to 1.42) when compared with prednisolone alone. Acyclovir (OR 0.44, 95% CI, 0.28 to 0.68) or valacyclovir (OR 0.60, 95% CI, 0.42 to 0.87) alone had significantly lower efficacy than prednisolone alone and neither was significantly different from placebo. Prednisolone-based treatment resulted in a two-fold increase in the chance of recovery at three months (OR 1.94, 95% CI, 1.55 to 2.42) compared with non-prednisolone-based treatment. The effects were generally similar at later follow-ups and when compared with the pairwise analyses (full results reported in the paper).

Authors' conclusions
Treating Bell's palsy with antiviral treatment plus corticosteroid may lead to slightly higher recovery rates compared with treating with prednisone alone but this does not reach statistical significance; prednisolone remains the best evidence-based treatment.

CRD commentary
The review addressed a clear question and was supported by appropriate inclusion criteria. Only two electronic databases were searched for studies in English, so it was possible that relevant studies were missed or language bias may have affected the results. Suitable methods were used to reduce the risk of reviewer error and bias throughout the review. Study quality was assessed and was used in to interpret the results of the review.

The system for combining item scores was not explained and details of the items fulfilled for individual studies were not presented. Appropriate methods were used to pool data, and to assess and investigate heterogeneity. Though studies may have been missed, the authors' conclusions reflected the evidence available and appeared to be reliable.

Implications of the review for practice and research
Practice: The authors stated that prednisolone remains the best evidence-based treatment.

Research: The authors stated that an analysis of individual patient data would be able to further assess the impact of study quality and patient variables.

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