Meta-analysis: griseofulvin efficacy in the treatment of tinea capitis

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CRD summary
The aim of this review was to determine the average efficacy rate for griseofulvin in the treatment of tinea capitis (scalp ringworm). The authors concluded that griseofulvin had consistently high efficacy over the previous decade. The review had several limitations and the authors' conclusions may not be reliable.

Authors' objectives
To determine the average efficacy rate for griseofulvin in the treatment of tinea capitis (TC).

Searching
PubMed was searched from inception to December 2006 for English language articles only. Search terms were reported. The bibliographies of relevant studies were also searched.

Study selection
Studies of people with mycologically confirmed TC treated with griseofulvin that reported mycological cure as an outcome were included. The minimum length of follow-up was 12 to 16 weeks after commencement of treatment. Studies had to report whether the causative organism at baseline was Trichophyton and/or Microsporum to be eligible. The primary outcome was “effective cure” defined as a negative culture and preferably also a negative potassium hydroxide (KOH) test and few remaining visual signs of infection. The included studies also reported partial success, complete cure and clinical cure. The included studies used a wide range of doses of griseofulvin (10mg/kg/d to 20 mg/kg/d where reported in this way) and treatment lasted from six to 12 weeks. The length of follow-up ranged from six to 24 weeks. The included studies were published from 1995 to 2005.

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 state that they assessed validity.

Data extraction
The number of participants classified as a treatment success following treatment with griseofulvin was extracted based on the primary study definition of success and the proportion of patients with treatment success calculated. The authors stated neither how the data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
The proportion of patients in each study classified as effective cure at four to six weeks post treatment were pooled in a meta-analysis using a method adapted for single group analysis that produces an average weighted by sample size. Studies were added sequentially to the meta-analysis by year of publication (earliest first).

Results of the review
Seven studies of unstated design met the inclusion criteria (n=438). The sample size ranged from 17 to 230 participants. The average number of effective cures, using data from all seven studies, was 73.4 per cent (standard error (SE) 7%). When broken down by causative organism the mean efficacy in Trichophyton was 67.9 per cent (SE 9%), based on 396 patients (five studies) and in Microsporum was 88.1 per cent (SE 5%), based on 42 patients (two studies). The cure rate was relatively consistent by year of publication. (We have made the assumption that the authors reported SE, though this is not stated explicitly in the paper.)

Authors' conclusions
Griseofulvin efficacy remained consistently high over the decade of study. It showed good efficacy with Trichophyton
and Microsporum species.

**CRD commentary**
This review had a number of significant limitations that mean the authors' conclusions should be treated with caution. A key limitation of the review was that the authors set out to establish an average efficacy rate for griseofulvin. As a result, the review did not include data comparing the treatment to either placebo or another active treatment. A very limited range of sources were searched and only studies in English language were included. Therefore, there was a fairly high risk that relevant studies were missed. In addition, appropriate methods were not used to minimise error and bias in the selection of studies and data extraction. Details were not provided on either the design or quality of the included studies. The authors stated that the meta-analysis was of "effective cure" at four to six weeks post-treatment, but effective cure was not reported for all studies and not all studies had a four to six week follow-up. It is, therefore, unclear which data from the studies was entered into the meta-analysis.

**Implications of the review for practice and research**
Practice: The authors did not state any implications for practice

Research: The authors stated that further research is required to investigate the impact of strain susceptibility on treatment efficacy.

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