

have less expensive care, the difference was not statistically significant.

Recommendations for clinical practice. For uncomplicated acute low back pain, primary care clinicians need not encourage bed rest or back extension and lateral bending exercises. The two significant weaknesses of this study were its generalizability to patients living with our workers' compensation system and the somewhat low power to detect significant differences in, for example, patient satisfaction, but these weaknesses are relatively minor. It has been difficult to prove that any treatment regimen improves functional outcomes for patients with acute low back pain. Exercise prescriptions other than those included in this study may produce better results, and exercises and contact with physical therapists may eventually prove to be more effective in preventing recurrent low back pain, but these possibilities remain to be proved.

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QUININE AND LEG CRAMPS

TITLE: Meta-analysis of efficacy of quinine for treatment of nocturnal leg cramps in elderly people

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Clinical question. Is quinine sulfate an effective treatment for nocturnal leg cramps in elderly patients?

Background. Nocturnal leg cramps are a common complaint among older patients. Quinine sulfate is a widely used therapy, but previous trials of its efficacy have been small and have had mixed results. Because of the drug's well-known and potentially serious side effects (pancytopenia, cinchonism, and visual toxicity), a meta-analysis was undertaken to determine whether quinine has any therapeutic benefit in the treatment of leg cramps.

Study design. The authors performed a meta-analysis of randomized, double-blinded, placebo-controlled, crossover trials of general ambulatory patients. The meta-analysis was well designed, with the following strengths: (1) the literature search was thorough and included a search for unpublished results; (2) review of the methods section of each article for the above inclusion criteria was blinded; (3) data on individual patients were obtained whenever possible; and (4) appropriate statistical tests were used. Sensitivity analyses, which made several worst-case assumptions, were performed to determine whether any

identified treatment effect was the result of selection or publication biases. Publication bias refers to the greater likelihood that studies that show a benefit from treatment will be published compared with those that show no benefit. A recent article simulating the effects of publication bias and chance on the results of a meta-analysis nicely illustrates the methodology's pitfalls, and is recommended to interested readers.¹

Outcomes measured. The following outcomes were measured: reduction in the total number of leg cramps and the number of nights during which leg cramps occurred; severity of leg cramps; duration of leg cramps; and the "cramp index" (the product of duration and severity).

Results. Of 11 potentially eligible trials, 6 with a total of 107 patients met the inclusion criteria. Individual patient data were available for all but one study. Patients taking quinine had a significant reduction of 8.83 (95% confidence interval [CI], 4.16 to 13.49) in the number of nocturnal leg cramps during a 4-week period, and a significant reduction of 27.5% (95% CI, 24.4 to 30.6) in the number of nights during which leg cramps occurred (although the latter outcome was reported by only two of the trials). No change was detected in the severity of cramps, their duration, or the cramp index. A variety of sensitivity analyses did not change these results. The authors discount the possibility of publication bias because of the "genuine uncertainty about the efficacy of quinine sulfate" among physicians, which I find reasonable. Nevertheless, it would have been helpful to calculate the theoretical number of unpublished negative trials needed to negate the results of the meta-analysis.²

Recommendations for clinical practice. Quinine sulfate in a dose of 200 mg to 300 mg given orally at bedtime appears to reduce the frequency but not the severity of nocturnal leg cramps in elderly patients. Patients should be treated daily for at least 4 weeks to determine individual benefit, and the possible risks of therapy, such as pancytopenia and cinchonism, must be balanced against any benefits. Since this study does not address the duration of benefit beyond 4 weeks, patients should be reevaluated regularly.

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