Review: Oral but not inhaled corticosteroids improve radiographic outcomes in patients with pulmonary sarcoidosis

Paramothayan NS, Jones PW. **Corticosteroids for pulmonary sarcoidosis.** Cochrane Database Syst Rev. 2000;1: latest version 17 Oct 1999.

QUESTION

Are inhaled or oral corticosteroids efficacious for patients with pulmonary sarcoidosis?

DATA SOURCES

Published and unpublished studies in any language were identified by searching the Cochrane Airways Group interstitial lung disease/pulmonary sarcoidosis register with the terms sarcoidosis, steroid, corticosteroid, prednisolone, prednisone, beclomethasone, budesonide, and fluticasone and by searching the bibliographies of retrieved papers. Pharmaceutical companies and authors were also contacted.

STUDY SELECTION

Studies were selected if they were randomized controlled trials (RCTs) or controlled clinical trials of adults with histologic evidence of pulmonary sarcoidosis or radiographic changes and deterioration in lung function; corticosteroids were given for ≥ 2 months; the control group received placebo or no treatment; and outcomes included lung function, changes on chest radiography, and symptoms.

DATA EXTRACTION

Data were extracted on patient demographics, intervention (drug and dosage, comparison group, and treatment duration), outcomes, length of follow-up, and withdrawals or dropouts. Methodologic quality of trials was assessed using the Jadad scale.

MAIN RESULTS

{7 RCTs were included. Meta-analysis of 4 of 5 studies that compared oral steroids with a control group showed an overall benefit for corticosteroids. More patients who received oral corticosteroids had improvements on chest radiography, and fewer had deteriorations or no changes than did patients who received placebo (Table).}* Data from 2 studies that reported lung-function outcomes could not be combined; 1 found no group differences for FEV_1, forced vital capacity (FVC), and diffusing capacity (DLCO), and the other found no difference in FVC but improved DLCO with corticosteroids.

Of 2 studies that examined inhaled steroids, 1 reported no differences in radiographic results or deterioration of diffusing capacity after 6 to 8 weeks; the other found no differences in vital capacity (VC), FEV_1, and DLCO after 6 months of therapy.

CONCLUSIONS

Oral corticosteroids improve radiographic outcomes in patients with pulmonary sarcoidosis over 6 to 24 months, whereas inhaled steroids do not. Neither symptom nor lung-function benefits are evident.

*Data provided by author.

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Oral corticosteroids vs placebo in patients with pulmonary sarcoidosis at 6 to 24 months†

Radiographic outomes	Oral corticosteroids	Placebo	RBI (95% CI)	NNT (CI)
Improved	73%	50%	43% (22 to 68)	5 (4 to 8)
			RRR (95% CI)	
Deteriorated	6%	12%	69% (33 to 85)	17 (10 to 61)
Unchanged	26%	39%	37% (16 to 53)	8 (5 to 24)

†Abbreviations defined in Glossary; calculations based on data provided by author.

COMMENTARY

From their well-done systematic review, Paramothayan and Jones conclude that patients with stage 2 or 3 sarcoidosis may show an improvement on chest radiography after a course of oral steroids given for ≥ 2 months. Nevertheless, for several reasons, most clinicians do not regard abnormalities on chest radiography as a sufficient indication for corticosteroid therapy. Natural remissions or benign courses of the disease are not uncommon (1). The assessment of response to oral corticosteroids is further complicated by differences in typical features of the disease among ethnic groups. More important, the correlations between radiographic changes and clinical, physiologic, and immunologic findings are weak (2). A composite outcome (which is still to be defined and validated) comprising physiologic and clinical data would represent a more appropriate end point. In addition, the decision to use long-term systemic corticosteroids must consider the side effects. Unfortunately, neither simple clinical findings nor more sophisticated immunologic criteria provide appropriate guidance on which patients are most likely to benefit from corticosteroid therapy (3).

The meta-analysis by Paramothayan and Jones emphasizes the important and unresolved issue of whether oral corticosteroids can improve clinical outcomes in chronic pulmonary sarcoidosis.

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References

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