

primary studies - published RCT

Interleukin-1 alpha, soluble interleukin-2 receptor, and IgG concentrations in cystic fibrosis treated with prednisolone.

Code: PM8067791

Year: 1994 **Date:** 1994

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Study design (if review, criteria of inclusion for studies)

Double-blinded. Randomised.

Participants

CF diagnosed by raised sweat sodium (>70 mmol/l) and established respiratory disease (FEV1

Interventions

Soluble prednisolone 2 mg/kg/ daily for 14 days and then 1 mg/kg/ day on alternate days for 10 weeks (maximum dose 40 mg) or identical inert placebo tablets.

Outcome measures

Specific side effects (raised blood pressure, high blood sodium, low blood potassium, fluid retention and glucose intolerance) were looked for at each visit. The following were measured at baseline, 14 days and 12 weeks: FEV1, FVC, Serum interleukin- 1- alpha, interleukin- 2R, IgG.

Main results

The cytokines interleukin-1 and interleukin-2 participate in the inflammatory response, and may contribute to hypergammaglobulinaemia G and the development of lung injury in cystic fibrosis. Anti-inflammatory treatment with corticosteroids may attenuate this response. The effect of a 12 week course of oral prednisolone on spirometry and serum concentrations of interleukin-1 alpha (IL-1 alpha), soluble interleukin-2 receptor (sIL-2R), and IgG was investigated in 24 children with cystic fibrosis. Prednisolone was administered, in a double blind and placebo controlled manner, at an initial dose of 2 mg/kg daily for 14 days and tapered to 1 mg/kg on alternate days for 10 weeks. The treated group (n = 12) experienced an increase in forced expiratory volume in one second and forced vital capacity at 14 days, however, these changes were smaller at 12 weeks. In the treated group, change in pulmonary function was associated with decreased serum IgG and cytokine concentrations. Prednisolone suppresses serum concentrations of these cytokines, which may participate in the inflammatory response, the excessive synthesis of IgG, and airflow obstruction observed in cystic fibrosis patients.

<http://dx.doi.org/10.1136/adc.71.1.35>

See also

Arch Dis Child. 1994 Jul;71(1):35-9.

Keywords

Adolescent; Adult; Child; Immunization; Immunoglobulin G; pharmacological_intervention; Prednisolone; Steroids; Tablets; Immunoglobulins; Anti-Inflammatory Agents;