Effectiveness of infliximab in refractory FDG PET-positive sarcoidosis

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Abstract

Inconclusive evidence for the efficacy of infliximab in sarcoidosis hinders the global use of this potentially beneficial drug. To study infliximab efficacy in a clinical setting, we performed a prospective open-label trial in patients refractory to conventional treatment.

Patients (n=56) received eight infusions of 5 $mg \cdot kg^{-1}$ infliximab. Pulmonary function, disease activity measured by ^{18}F-fluorodeoxyglucose (FDG) by positron emission tomography (PET) and quality of life were part of the clinical work-up. Infliximab levels were measured before every infusion.

After 26 weeks of infliximab treatment, mean improvement in forced vital capacity (FVC) was 6.6% predicted (p=0.0007), whereas in the 6 months before start of treatment, lung function decreased. Maximum standardised uptake value (SUV_{max}) of pulmonary parenchyma on ^{18}F-FDG PET decreased by 3.93 (p<0.0001). High SUV_{max} of pulmonary parenchyma at baseline predicted FVC improvement (R=0.62, p=0.0004). An overall beneficial response was seen in 79% of patients and a partial response was seen in 17% of patients. No correlation between infliximab trough level (mean 18.0 $\mu g \cdot mL^{-1}$) and initial response was found.

In conclusion, infliximab causes significant improvement in FVC in refractory ^{18}F-FDG PET positive sarcoidosis. Especially in pulmonary disease, high ^{18}F-FDG PET SUV_{max} values at treatment initiation predict clinically relevant lung function improvement. These results suggest that inclusion of ^{18}F-FDG PET is useful in therapeutic decision-making in complex sarcoidosis.