

## **Pulmonary hypertension**

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### **VEGF and TGF- $\beta$ 1 blood levels across different stages of pulmonary sarcoidosis**

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#### **Background:**

Vascular endothelial growth factor (VEGF) and transforming growth factor beta 1 (TGF- $\beta$ 1) are involved in the pathogenesis of sarcoidosis. However, little is known about potential correlation between these markers and the stages of pulmonary sarcoidosis or lung function.

#### **Methods:**

87 patients with pulmonary sarcoidosis in stages I+II (group I, n=67) and stage III (group II, n=20) underwent blood sampling. VEGF and TGF- $\beta$ 1 blood levels were measured by an enzyme-linked immunosorbent assay (ELISA). Decreased lung diffusing capacity was defined as 80% or less of a predicted value.

#### **Results:**

Patients in sarcoidosis stage III had significantly increased blood concentrations of VEGF compared to those in sarcoidosis stages I+II ( $107.0 \pm 60.7$  pg/ml;  $77.6 \pm 34.7$  pg/ml, respectively,  $p < 0.05$ ). VEGF blood levels were also relevantly higher in subjects on oral cortisone therapy ( $93.8 \pm 50.2$  pg/ml) versus no cortisone therapy ( $73.4 \pm 30.2$  pg/ml,  $p < 0.05$ ) and in those with reduced lung diffusing capacity ( $104.5 \pm 59.2$  pg/ml) versus normal lung diffusing capacity ( $77.5 \pm 32.1$  pg/ml,  $p < 0.05$ ). Interestingly, there were no significant differences in TGF- $\beta$ 1 blood levels between both sarcoidosis groups. Cortisone therapy or impaired lung diffusing capacity were not associated with alternations in TGF- $\beta$ 1 blood concentrations.

#### **Conclusions:**

Higher VEGF blood levels were detected in patients with more severe sarcoidosis without pulmonary fibrosis.