

### Evaluation of Influencing Factors in Sarcoidosis Stages I and II Clinical Course

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**Introduction:** Sarcoidosis radiological stages I and II are usually self-limiting and spontaneous remission occurs frequently. However a small number of patients remain unchanged and some can even progress.

**Aim:** Evaluation of clinical, functional, radiological and BAL features and their influence in disease regression of sarcoidosis patients with radiological stage I and II. **Material and Methods:** 84 patients (34 stage I and 50 stage II) were included with mean age of 33±10 years and 64% were females. Chronic disease was defined as presence of symptoms or functional impairment and abnormal radiological findings for longer than 2 years. Factors associated with disease regression were studied in bivariate and multivariate logistic regression analysis.

**Results:** Erythema nodosum was observed in 34% patients, 46% had constitutional symptoms, 40% dyspnea, 36% cough and 12% were asymptomatic; 54% had normal lung function tests, 35% an obstructive pattern and 11% a restrictive pattern; 69% had extrathoracic manifestations with skin, hepatic and peripheral nodes as the most frequent involved areas. Disease regression was found in 55 (65.4%) patients and 29 (34.5%) had a chronic course. In bivariate analysis presence of erythema nodosum ( $p=0.010$ ) and asthenia ( $p=0.03$ ) were significantly associated with disease regression. Radiologic stage II, ( $p<0.001$ ) extrathoracic involvement ( $p=0.046$ ) and older age ( $p=0.001$ ) were significantly associated with disease chronicity. Radiologic stage and age were the only factors independently associated with disease regression in multivariate logistic regression analysis.

**Conclusions:** Older age and a higher lung involvement seem to be the most influencing factors in sarcoidosis stage I and II clinical course of this group of patients.

**Key-words:** sarcoidosis; stages I and II; disease regression.

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### Antifungal Treatment Effect on Markers of Sarcoidosis

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**Background:** Fungi have been suspected as causative agents in sarcoidosis [1]. A previous intervention study demonstrated an improvement in the clinical condition among 15 out of 18 patients with a long term history of sarcoidosis [2].

**Aim of the study:** To further evaluate the clinical effects of antifungal treatment in patients with sarcoidosis.

**Material and methods:** Patients with newly diagnosed sarcoidosis ( $n=40$ ) were treated with corticosteroids according to established procedures. Half of the group received antifungal treatment during the first six months and the other half during the following six months. Two markers of sarcoidosis activity were measured; serum angiotensin converting enzyme (SACE) and chitotriosidase (CTOase) and used as an indicator of the treatment effect.

**Results:** A preliminary evaluation demonstrated that SACE levels decreased during the first 6 months after corticosteroid treatment. The decrease was larger among patients also treated with antifungal medication, compared to those treated with corticosteroids only (48.4% vs 24.1%,  $p=0.064$ ). A similar trend was found for CTOase values. During the second period, those patients that received corticosteroids only did not show any further improvement whereas patients that received antifungal medication, although limited in number, showed a tendency to further improvement.

**Conclusion:** The results confirm an earlier report that antifungal treatment might increase the efficiency of treatment of patients with sarcoidosis.

#### References

1. duBois RM, Goh N, McGrath D, Cullinan P. Is there a role for microorganisms in the pathogenesis of sarcoidosis? *J Int Med* 2003; 253:4-17.2. Terceļj M, Rott T, Rylander R. Antifungal treatment in sarcoidosis – a pilot intervention study. *Resp Med* 2007; 101:774-778.

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### Utility of Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration Biopsy (EBUS-TBNA) in the Diagnosis of Sarcoidosis

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**[Rationale]** Although pathological diagnosis of sarcoidosis is usually made by transbronchial lung biopsy (TBLB), positive rate of TBLB is not satisfactory, especially in stage I patients. Since almost of patients with sarcoidosis have hilar and mediastinal lymphadenopathy, an approach to lymph nodes is expected to have good diagnostic yields. Transbronchial needle aspiration biopsy (TBNA) without ultrasound guide needs skillfulness of the operator. On the other hand, TBNA under the real-time endobronchial ultrasound (EBUS-TBNA) is easy to perform. In the present study, we examined the utility of EBUS-TBNA and TBLB in the pathological diagnosis of sarcoidosis.

**[Subjects and Methods]** Both TBLB and EBUS-TBNA were performed in 53 patients with suspected sarcoidosis (stage I: 25 cases, stage II: 28 cases).

**[Results]** TBNA and TBLB demonstrated noncaseating epithelioid cell granulomas in 44 (83.0%) and 38 (71.7%) of total patients, respectively. In stage I patients, positive rates of TBNA and TBLB were 80.0% and 60.0%, respectively. In stage II patients, positive rates of TBNA and TBLB were 85.7% and 89.3%, respectively. The combination of TBNA and TBLB increased the diagnostic yield to 96.2% in total patients, 92.0% in stage I patients, and 100% in stage II patients.

**[Conclusion]** Approach to hilar and mediastinal lymph nodes by EBUS-TBNA is easy and useful for pathological diagnosis of sarcoidosis, especially in stage I patients.

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### Co-Existing Skin and Respiratory Symptoms among Four Occupational Groups

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**Introduction:** Co-existing occupational skin and lung disease has rarely been studied despite several case reports in the literature. We report on the prevalence and risk factors for co-existing skin and respiratory symptoms in four occupational populations.

**Methods:** Previously collected questionnaire data from studies of occupational skin or respiratory disease was utilized. Subjects were employed in embalming, cabinet making, soda ash processing or softwood planing. Data from equivalent questionnaire items was pooled and univariate analyses were completed.

**Results:** Ninety-six percent of all subjects ( $n=245$ ) were male. On average subjects were 36.4 years old (sd 12.7) and had been at their current place of employment for 9.3yrs (sd 9.1). Seventy percent of subjects ( $n=172$ ) reported ever smoking. Mean lung function was approximately normal, 94.1%pred. FEV1 (sd 12.7) and 96.1%pred. FVC (sd 11.6). Skin rash was more common among embalmers ( $p=0.0001$ ) compared with other occupational groups. Overall, 46% of subjects reported at least one respiratory symptom; this did not differ significantly between occupational groups. Subjects were grouped in four symptom group: no symptoms, skin symptoms only, respiratory symptoms only and both skin and respiratory symptoms. Thirty-three subjects (13%) reported both skin and respiratory symptoms. Symptom groups did not differ significantly in terms of age, lung function, smoking status, atopy or years working. However, subjects reporting both skin and respiratory symptoms were more likely to work in embalming ( $p=0.002$ ) and be female ( $p=0.002$ ).

**Conclusions:** Among workers in four different occupational environments the prevalence of co-existing skin and respiratory symptoms was 13%. These subjects were more likely to work in embalming and be female. More research into the factors associated with co-existing skin and respiratory symptom is needed.

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### Self-Reported Hand Symptoms — A Role in Monitoring Health Care Workers for Latex Sensitization?

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**RATIONALE:** Health care workers (HCW) can develop allergies and occupational asthma from proteins in latex gloves. Hand symptoms reported on questionnaires may be useful indicators of latex sensitization.

**METHODS:** Questionnaires were completed by 804 HCW at two hospitals, recording the type and frequency of glove use and hand symptoms during latex glove use (itching, redness, rash without hives, hives without rash, hives with rash, cracking, and blisters). Health outcomes included latex sensitization indicated by positive skin prick test (SPT+) to standardized latex antigens (clone 600) and glove-related respiratory or systemic symptoms. HCW were grouped by number of hand symptoms reported: 0, 1-2, or >2. Group comparisons of glove use and health outcomes were made using Mantel-Haenszel chi-square. Using SPT+ to define latex sensitization and >2 hand symptoms as the clinical index test, the diagnostic values of sensitivity, specificity, positive likelihood ratio (LR+), and negative predictive value (NPV) were computed using 2x2 tables.

**RESULTS:** Increasing latex glove use was strongly related to increasing reports of hand symptoms. Hand symptoms were highly associated with glove-related respiratory and systemic symptoms. SPT+ was seen in 5% of HCW and increased with the number of hand symptoms (0=1.6%, 1-2=3.4%, 3-7=19.0%). Participants reporting >2 hand symptoms were 11 times more likely to show SPT+ compared to those with ≤2 hand symptoms. The sensitivity, specificity, LR+, and NPV were 65.0%, 85.5%, 4.5, and 97.9%, respectively.

**CONCLUSIONS:** Hand symptoms due to latex gloves are closely associated with latex sensitization, and may be useful in monitoring the health of HCW who use gloves.

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### Investigating the Relationship between Occupational Cutaneous Symptoms, Exposures and Respiratory Symptoms among Professional Indoor Cleaners

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**Background:** Cleaners have been reported to be at increased risk both for work-related cutaneous symptoms and respiratory symptoms.

**Aims:** To compare professional indoor cleaners to other building workers (OBW) in the prevalence of occupational cutaneous symptoms and to determine associations with exposures and with respiratory symptoms among cleaners.

**Methods:** A cross-sectional questionnaire was completed by indoor professional cleaners and other building workers (OBW) to compare rash and respiratory symptoms between these groups and to examine workplace factors such as training, protective equipment, and tasks.

**Results:** The prevalence of rash was increased in the cleaners compared to the OBWs. For male cleaners, 20.8% (86/413) had a rash in the past 12 months compared to only 11.3% (13/115) of OBW ( $P=0.02$ ). The rashes experienced by the cleaners were more likely to be blistering, and to be on their hands and worse at work. Cleaners washed their hands significantly more than OBWs. Cleaners with a rash were less likely to have received workplace training regarding their skin and were more likely to find the safety training hard to understand. Importantly, cleaners with a rash were significantly more likely to have work-related asthma symptoms than cleaners without a rash ( $p<0.0001$ ).

**Conclusions:** The findings of this study demonstrate a strong link between work-related symptoms of asthma and dermatitis in the cleaning population. The findings further highlight the importance of effective preventative measures in this population which can include using safer products, safety training, and use of protective equipment.

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