

groups of chemicals sporadic or no positive SPTs were noted. Occupational contact urticaria (CU) caused by chemicals was diagnosed in 41 patients during the study period, 21 of them caused by acid anhydrides. More than half of the CU patients (54%) had a concomitant allergic airway disease.

**Discussion** SPTs provide a fast and safe complementary tool for diagnosing immediate allergic diseases to some chemical groups, but the results should be interpreted cautiously and related to symptoms and other clinical tests. Occupational CU caused by chemicals is often accompanied by occupational airway diseases caused by the same agent.

### 374 PREVALENCE OF ALLERGY RELATED SKIN AND RESPIRATORY DISEASES AMONG HEALTHCARE WORKERS IN CROATIA

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**Introduction** Healthcare workers are exposed to wet-work and occupational hazards such as latex, cleaning products and various medication drugs which can potentially cause allergic or irritant dermatitis and work-related rhinitis and asthma. The aim of this research was to investigate the prevalence of health issues related to the skin and respiratory tract among healthcare workers in hospital.

**Methods** Subjects of the research were 1021 healthcare workers employed in four clinical hospitals in Zagreb, Croatia, who filled the Work Ability Index Questionnaire. Questions about current skin diseases (allergic or other rash, eczema) and respiratory diseases (chronic or recurrent infections of the respiratory tract, bronchial asthma) diagnosed by the physician were extracted and analysed.

**Result** Out of 1021 healthcare workers, there were 721 nurses (47 man; 674 women) and 300 physicians (134 man; 166 women). It was found that allergic dermatitis and/or eczema was present in 15% (109/721) nurses and in 15% (46/300) physicians. Prevalence of respiratory diseases among nurses was 26% (187/721), and 28% among physicians (85/300). Coexisting skin and respiratory tract symptoms were present in 8% (77/1021) healthcare workers.

**Discussion** In this study atopic disorders and eczema were present in a significant percentage of the workers, as well as inflammation of the respiratory tract and bronchial asthma, but it couldn't be verified that symptoms are related to latex or other hazards. Individuals with a history of atopic disorders are at increased risk of latex allergy. According to ALAA, the estimated prevalence of latex allergy in healthcare workers varies between 8%–17%. Further research in healthcare with a focus on the use of gloves, job tasks, and prevocational exposure to latex is needed.

### 114 OCCUPATIONAL HAND ECZEMA AMONG CEMENT WORKERS IN NEPAL

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**Introduction** Occupational dermatitis among cement workers is a major occupational health concern and skin contact with cement has been associated with contact dermatitis, which ranges from cement burns to cumulative irritant contact dermatitis. The objective of this study was to investigate the prevalence and severity of occupational cement contact dermatitis amongst cement workers in Nepal which is the first of its kind.

**Methods** This was a cross sectional descriptive study conducted amongst the workers in construction sites and hardware shops within the Kathmandu valley. A structured questionnaire was used to collect the demographic data and work-related activities of those cement workers. A complete skin examination was conducted and skin manifestations were assessed by a dermatologist. The data collected was compiled and appropriate statistical tools were used to find out the significance of variables.

**Result** Out of the 377 workers screened 164 (43.50%) had hand contact dermatitis. There were males 148 (90.2%) and females 16 (9.8%) and the age ranged from 15–51 years (mean 27.41±7.68 years). The duration of the disease ranged from 1–360 months (median 36 months (IQR=60)). The most common site of lesion was palms (62.8%) followed by tip of the fingers in 39.0% patients and the most common morphology of the lesion was erythema seen in 59.1% followed by scaling seen in 51.8% patients.

**Discussion** Contact and irritant hand eczema amongst cement workers in Nepal has a considerable morbidity. Identification of these workers with adequate treatment, test of the suspected allergens and counselling could further help the workers. This study helped us to assess the magnitude of the problem and since it is a cross sectional survey, further research can be planned to see the allergens amongst the persons suspicious of contact dermatitis amongst the cement workers.

### 1339 MINERALOGY AND TEXTURES OF ASBESTOS: THE ROLE OF SINGLE VS AGGLOMERATED FIBRES IN TOXICOLOGICAL EXPERIMENTS

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**Introduction** Exposition to asbestos may cause adverse health effects, but a clear relationship between mineralogy and texture of fibres versus toxicity is still lacking. Toxicological studies can be properly interpreted and compared only if quantitative features of fibres are determined.

**Methods** Amphibole fibres were characterised by XRPD, FTIR, SEM-EDS and EMP-WDS. Fibres deposited from solutions of 0.1, 1, 10, 25, 50, 75 and 100 mg/L were counted using SEM images. The single vs agglomerated fibres was assessed. The viability of human lymphocytes exposed to the fibres was investigated by MTT test.

**Results** Only crystals with definite stoichiometry are present. At 0.1 and 1 mg/L the fibres are well separated, whereas between 1 and 10 mg/L they start to agglomerate. *In vitro* tests performed on fibres deposited at the same concentrations show that the cytotoxic effect rate decreases for asbestos concentration >10 mg/L.