A number of epidemiological investigations have identified asthma prevalence in cleaners around 1.5–2.0 times those of reference populations. There are around 700,000 cleaners in the UK, asthma prevalence is around 8%, and that suggests a high burden of work-related disease. However, a clinical diagnosis of occupational asthma in cleaners is established relatively rarely. We have investigated the hypothesis that this discrepancy occurs because cleaner’s asthma is a form of low dose irritant asthma that is visible to epidemiologists but does not have the typical clinical features of occupational asthma. A questionnaire was sent to 1400 cleaners working in local hospitals and universities. 14% had a previous diagnosis of asthma, and in 32% of these the asthma started after they began work as a cleaner. Investigations for possible occupational asthma comprised paired measurements of airway responsiveness at and away from work (n = 13), serial PEF analysed using OASYS-2 (n = 13) and a structured clinical history (n = 10). 5 subjects had a greater than 3 fold improvement in PD20 away from work, and 2 subjects had OASYS score > 2.5 indicating a probable occupational effect. 1 subject had both. The clinical histories were sent to 9 physicians with an interest in occupational asthma who were asked to score them for the likelihood of occupational asthma on a scale 0 to100% with and without the OASYS scores and the airway responsiveness measurements. Before seeing the investigation results, 7 of the 90 individual scores (9 physicians x 10 subjects) were above 50% indicating that the diagnosis of occupational asthma was thought likely. After seeing the investigation results, 29 of the 90 scores were above 50%. The mean probability score based on the history alone did not exceed 50% for any cleaner but was above 50% for 2 cleaners when the investigations were taken into account. These findings support the view that cleaner’s asthma has features that make it difficult to identify from the clinical history.

**Introduction**

Airborne irritants and allergens in the workplace can induce and trigger occupational asthma (OA). OA due to sensitisation is associated with an accelerated rate of decline in FEV₁ (100 ml/yr) compared with healthy controls (25 ml/yr), which improves on removal from exposure. We sought to describe the rate of FEV₁ decline in patients with irritant-induced OA before and after their removal from exposure.

**Methods**

Cases of irritant-induced OA reported between 1991 and 2011 were identified from the SHIELD database (a voluntary reporting scheme for OA) and their demographic characteristics and serial FEV₁ measurements were gathered. Generalised estimating equations with an exchangeable correlation structure were used to calculate an average rate of FEV₁ decline for all patients before and after removal from exposure.

**Results**

A total of 526 FEV₁ readings (179 prior to removal, 347 post removal) were gathered from 52 patients. 30 patients had FEV₁ data both before and after removal; 5 patients had FEV₁ data only before removal, and 17 patients had FEV₁ data only after removal; demographics were not significantly different between the groups. FEV₁ decline prior to removal of the irritant was 44 ml/year (95% CI: 32–58) and FEV₁ decline after removal was 49 ml/year (95% CI: 36–62). There was no significant difference between the intercepts of the two lines, implying no improvement in FEV₁ after removal from exposure.

**Conclusion**

In this cohort, irritant-induced OA was associated with an accelerated decline in FEV₁, which persisted after removal from the irritant. These results might be attributed to differences in the underlying pathology of sensitisation and irritant-induced OA, differences in patient behaviour, or differences in treatments offered to the two groups.