SWORD '95: Surveillance of work-related and occupational respiratory disease in the UK

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An estimated 2,741 new cases of occupational respiratory diseases were reported by chest and occupational physicians in 1995. Total cases reported by 'core' chest physicians and occupational physicians have risen but cases reported by 'sample' physicians have fallen by 32%, reducing the estimated total overall by approximately 16% from 1994. Steps are being taken to reverse this downward trend. Occupational asthma remains the single most frequently reported disease of which more than two thirds of cases were attributed to sensitization. Non-malignant pleural disease was the next most frequently reported, with pleural plaques predominating in 71% of cases. In a study of a selected sample of 158 cases of non-malignant pleural disease, 81 (51%) were seen for medico-legal reasons; of the remainder 13% had signs or symptoms ascribed to the disease.

Key words: Epidemiology; occupational respiratory disease; pleural disease; surveillance.

INTRODUCTION

The SWORD surveillance scheme has now entered its eighth year, and since 1993 results have been published annually. The project aims to estimate the incidence of work-related respiratory diseases, to report the occupations and suspected agents and to carry out further studies in collaboration with participants. This report summarizes data for 1995.

Participation

A sampling system for chest physicians was introduced in 1992. Of 31 chest physicians in the 'core' group who report monthly, an average of 80% did so. Of the remaining 322 physicians allocated at random to report in only one of 12 monthly samples, 51% returned cards. Of 73 occupational physicians reporting every month, an average of 72% responded, compared to 71% of 76 reporting quarterly and 49% of 208 reporting biannually.

Changes to reporting card

From 1 July 1995 changes were made to the asthma and non-malignant pleural disease categories. Asthma was split into two sub-groups: asthma ascribed by the reporting physicians to sensitization, and asthma ascribed to respiratory irritation (including reactive airways dysfunction syndrome, or RADS). Non-malignant pleural disease was also sub-divided according to whether plaques or diffuse disease were thought to predominate.

Data summary

By the end of March 1996, SWORD was informed of 1,498 new cases of occupational respiratory disease first identified in 1995, giving an estimated total of 2,741 cases by application of the sampling fraction (Table 1).

The numbers of cases reported by occupational physicians and 'core' chest physicians were higher than in 1994, but those from chest physicians in the 'sample' were substantially less, leading to a large fall in the estimated totals (from 3,267 in 1994). This fall in reporting by 'sample' physicians has been partly reversed in the first months of this year by more active encouragement of participants.

The distribution of reported diseases was similar to
Table 1. Summary of cases reported to SWORD in 1995, with estimated totals

<table>
<thead>
<tr>
<th>Group</th>
<th>Occupational physicians</th>
<th>Chest physicians</th>
<th>Total</th>
<th>Male (%)</th>
<th>Mean age (yrs)</th>
<th>Estimated total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>'Core'</td>
<td>'Sample'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allergic alveolitis</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>9</td>
<td>78</td>
<td>43</td>
</tr>
<tr>
<td>Asthma</td>
<td>204</td>
<td>251</td>
<td>33</td>
<td>488</td>
<td>65</td>
<td>851</td>
</tr>
<tr>
<td>Bronchitis/emphysema</td>
<td>2</td>
<td>24</td>
<td>2</td>
<td>28</td>
<td>96</td>
<td>60</td>
</tr>
<tr>
<td>Infectious disease</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>63</td>
<td>50</td>
</tr>
<tr>
<td>Inhalation accidents</td>
<td>135</td>
<td>50</td>
<td>14</td>
<td>199</td>
<td>81</td>
<td>353</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>2</td>
<td>24</td>
<td>3</td>
<td>29</td>
<td>97</td>
<td>67</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>31</td>
<td>96</td>
<td>30</td>
<td>157</td>
<td>93</td>
<td>63</td>
</tr>
<tr>
<td>Non-malignant pleural disease</td>
<td>9</td>
<td>293</td>
<td>24</td>
<td>326</td>
<td>96</td>
<td>62</td>
</tr>
<tr>
<td>Pneumoconiosis</td>
<td>10</td>
<td>114</td>
<td>4</td>
<td>128</td>
<td>94</td>
<td>63</td>
</tr>
<tr>
<td>Other&lt;sup&gt;d&lt;/sup&gt;</td>
<td>100</td>
<td>881</td>
<td>113</td>
<td>1,498</td>
<td>80</td>
<td>51</td>
</tr>
<tr>
<td>All reports</td>
<td>504</td>
<td>881</td>
<td>113</td>
<td>1,498</td>
<td>80</td>
<td>51</td>
</tr>
</tbody>
</table>

<sup>a</sup> Based on 1,480 cases for which sex was specified.

<sup>b</sup> Based on 1,433 cases for which age or date of birth were specified.

<sup>c</sup> Taking account of sampling fraction.

<sup>d</sup> Includes byssinosis and building-related illness, previously reported separately.

previous years, though the long-term decline in the proportion of cases of pneumoconiosis continued (from 14% in the early years of the scheme to only 6% in 1995). Asbestos accounted for 72% of cases of pneumoconiosis, coal for 10% and silica for 8%. Figure 1 shows the fall in the number of pneumoconiosis reports attributed to the latter two agents since SWORD began, while the number for asbestos has remained stable.

Asthma accounted for 31% of all reports. Of the 244 cases of occupational asthma reported in the second half of the year, 174 (71%) were reported as due to sensitization and 45 (19%) to irritation; the remaining 25 were not specified. Perhaps surprisingly, 23% of the second group were attributed to agents which were prescribed sensitisers<sup>3</sup> (compared to 62% of the first). Women made up to 54% of cases thought due to sensitization, compared to 36% and 35% of unspecified and irritant cases respectively. Latex has been increasingly recognized as a cause of asthma, the number of reports increasing to 18 cases in 1995 from 10 in 1994 and three in 1993.

Exposure to laboratory animals was invoked as the cause of 45 cases of asthma and 34 cases of rhinitis in 1995. Women made up a higher percentage of cases of asthma (62%) than rhinitis (47%) without evidence of a difference in age. Figure 2 shows that among technicians, particularly animal technicians, the proportion of asthma was greater than that of rhinitis; the opposite was true among scientific/medical investigators. Other studies have shown that animal

Figure 1. Number of reports of pneumoconiosis (1989–1995) showing attributed agent

Figure 2. Asthma and rhinitis attributed to laboratory animals: by occupation
technicians are exposed to higher levels of animal allergen than scientists. This suggests that as levels of exposure increase, the proportion of cases of asthma rises relative to rhinitis.

There were 163 cases of non-malignant pleural disease reported in the first 6 months, of which 114 (70%) were specified as predominantly pleural plaques and 46 (28%) as predominantly pleural thickening; three were unspecified. Only 4% of cases were female and in all pleural plaques predominated.

'Case of the Month'

Case reports which are particularly interesting or educational are solicited from participants and accompany our monthly reports. Of the eight published in 1995, five were of asthma including two associated with newly suspected agents:

A nurse had developed dermatitis and bronchospasm eight years previously, believed to be due to the powder on latex gloves. During a first aid competition, she applied latex solution to her skin and soon developed swelling of the face and lips and bronchospasm. In a second report, a mother and her two daughters developed moderately severe asthma following treatment of their house for woodworm with benzene hexachloride, during which time the family did not move out of their home, and suffered from cough and rhinitis.

The three other cases illustrated the difficulties of investigating patients whose employment is curtailed, that even low exposures may cause difficulties for research workers once sensitized and that the unsuspected presence of isocyanates in compounds may cause a deterioration in sensitized workers.

A non-smoker developed obstructive airways disease with symptoms related to his work cleaning narrow bore tubes where he was exposed to a mist of graphite oil and steel fragments.

Two inhalation accidents resulting in toxic symptoms were reported, one involving two nurses spraying a wound in an enclosed space and one of two workers draining a tank of old permethrin (an insecticide) which was probably contaminated.

Follow-up studies

Inhalation accidents. A previous study of 623 patients reported to SWORD following inhalation accidents observed that 50 developed asthma-like symptoms lasting for a month or more. In a further study, the reporting physicians were asked to state whether these were new cases of asthma resulting from the inhalation accident: of 47 cases with data available, 34 were confirmed as such. Almost all of the diagnoses were supported by respiratory function tests, and only half the cases had recovered after four years.

Non-malignant pleural disease. This has been the second most frequently reported category since 1993. However, little is known about the circumstances in which these cases are detected or the extent to which any illness is associated with them. Cases reported by 'core' chest physicians in a 6-month period between June 1995 and November 1995, and those reported by other physicians in a 12-month period (July 1994 to June 1995) were selected for inquiry.

Of the 112 reports returned by 'core' physicians, two thirds were seen for medicolegal reasons. After exclusion of these cases with symptoms which were relatively severe, a larger proportion of cases reported by 'core' physicians than those reported by 'sample' physicians had signs or symptoms attributed to the disease. 'Core' physicians, who made the diagnosis more often using CT scan than 'sample' physicians, found more evidence of pleural plaques, calcification and parenchymal disease. Patients reported by the 'sample' had been more often referred by a general practitioner.

ACKNOWLEDGMENTS

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