occupational hygienist (field consultant group, Health and Safety Executive, Edinburgh), showed levels of mercury in the air to be between three to eight times the recommended limit. Advice was given about improving working practices in the three premises where raised concentrations of mercury in urine were found and in one where inadequate protection was provided, although no work had been done on sphygmomanometers for almost two months.

Comment

The urinary mercury concentrations in these workers indicated appreciable absorption. Our experience shows that the upper 95th percentile for dental workers is 10 nmol/mmol creatinine (20 µg/g) and for industrial workers 70 nmol/mmol (140 µg/g). Concentrations in excess of 120 nmol/mmol (240 µg/g) are considered to be potentially dangerous.⁴

Sphygmomanometer workers handle fairly small amounts of mercury; there are 64-85 g in one instrument. Their exposure, however, is more direct than that of many other workers, and they are much less aware of the risks. The working conditions in the premises fall short of those recommended,⁵ and two premises were so bad that the factory inspectorate prohibited work until the deficiencies had been remedied. At all the premises the workers' urinary mercury concentrations fell once the advice of the factory inspectorate had been acted on.

At a cautious estimate there are probably 10 000 sphygmomanometers in Scotland. Unless they are serviced in a controlled working environment then those doing this work may be at risk. The hazard could be abolished if digital or aneroid sphygmomanometers were used instead.

I thank my colleagues in the Health and Safety Executive in Scotland for visiting workplaces, the Health and Safety Executive Occupational and Medicine Laboratories for making the urinary mercury measurements, and Dr W Gray for permission to report on patients under his care.

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The peak flow whistle: a simple device for monitoring peak flow in children

We undertook a study to evaluate a cheap and simple device for estimating peak flow in children, the peak flow whistle.

Subjects, methods, and results

The peak flow whistle is a small cardboard cylinder with nine graduated holes along its side with a shorter outer cylinder that can be slid up and down to occlude some of the holes (Alternate Resources Ltd). A mouthpiece is fitted into one end and a whistle to the other. The air flow required to sound the whistle is proportional to the number of holes that are open, and the whistle can be sounded by either blowing or sucking through the mouthpiece. With one hole open a minimum flow of 60 l/min is required to sound the whistle, with two holes open the flow must be greater than 120 l/min, and so on. The whistle can therefore be used to define a range of peak flow. The sensitivity was expanded by occluding half a hole to provide intermediate readings.

The device was evaluated by comparing its readings with those obtained with a Wright peak flow meter. Altogether 101 children (65 boys, 36 girls) aged 3-12 were instructed to blow three times into a standard Wright peak flow meter and three times through the whistle. The peak flow meter was used first so that the whistle could be preset to a point where the child would be likely to sound it. The values obtained with the whistle and the peak flow meter were compared in 54 of the children, who produced a consistent peak flow—that is, less than 10% variation in peak flow measured with the peak flow meter.

The midpoint of the whistle's highest range of readings and the highest readings obtained with the Wright peak flow meter were compared by analysing the difference in peak flow and the average peak flow obtained with the two devices.¹ The figure shows that the maximum peak flow recorded with the whistle was on average 30 l/min less than that observed with the peak flow meter and the

variation about the mean was stable over a wide range of peak expiratory flow rates. The mean (SD) peak expiratory flow rate recorded with the peak flow meter for each subgroup of children making the whistle sound at different holes was: one hole, 105 (26) l/min (four children); two holes, 155 (26) l/min (four); three holes, 230 (20) l/min (13); four holes, 301 (29) l/min (20); five holes, 344 (27) l/min (eight); six holes, 375 (28) l/min (five).

Difference in peak flow measured with Wright peak flow meter and peak flow whistle plotted against average peak flow measured with the two devices in 54 children.

Comment

Subjective perception of asthma varies, and many patients with asthma cannot detect deterioration in their lung function; thus measurement of peak flow is desirable because it is an objective method of monitoring control of asthma.² This is particularly important when patients are given home nebulisers for the administration of B₂ agonists.³ Minimum peak flow values can also be used to indicate when medical advice or admission to hospital should be sought. Despite this only a small proportion of patients with asthma have had their lung function measured.⁴

Our results show that the peak flow whistle performs similarly to the Wright peak flow meter. The mean readings obtained with the peak flow meter for each whistle hole were within 5-30 l/min of the midpoint of nominal values for the adjacent holes. The whistle underestimated by 30 l/min on average the value that was obtained with the peak flow meter. We found that in contrast to a similar device used in the past, the whistle can produce a clear whistle at least up to 420 l/min.⁵ Additionally, getting the child to suck rather than blow through the device was useful in instructing him in the use of dry powder inhalers.

The peak flow whistle is a cheap, effective device. Its low cost (less than one seventh of that of conventional mini peak flow meters) should enable self-monitoring of patients with asthma to be greatly extended.

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Correction

Psychological impact of adjuvant chemotherapy in the first two years after mastectomy

We regret that an error occurred in this paper by Dr A V M Hughson and others (15 November, p 1268). The footnotes of tables III and IV should have read: "Fisher's exact test on combined data from groups who received chemotherapy and combined treatment because of small expected frequencies," and not, as appeared in the journal, "groups who received radiotherapy and combined treatment."