

## Reducing risks in the sudden infant death syndrome

### *Current interventions and socioeconomic factors need monitoring*

Epidemiological studies have recently suggested new risk factors that may play important parts in the sudden infant death syndrome. These include sleeping prone and over-insulation of the infant. On the basis of retrospectively acquired evidence<sup>1</sup> the government of New Zealand initiated a programme of education for parents, recommending that the prone sleeping position should be avoided and that mothers should not smoke and encouraging breast feeding. A similar education programme for parents, omitting advice on breast feeding and including suggestions to avoid overheating, was initiated in Avon after a retrospective case-control study that suggested a nearly ninefold relative risk for sudden infant death from sleeping prone.<sup>2</sup> The Department of Health has now extended Avon's campaign nationally.

How strong is the evidence for these recommendations? Relations between antenatal maternal smoking, postnatal parental smoking, and the sudden infant death syndrome have been consistently identified. The link with maternal smoking persists after confounding variables have been controlled for and is dose responsive.<sup>3</sup> Cigarette packages already carry government warnings of the harmful effects of smoking on the fetus; they should be explicit about smoking's relation with the sudden infant death syndrome.

Evidence is accumulating that overinsulation is an important risk factor for the syndrome,<sup>2,4,6</sup> and a paper in this week's journal gives further support to this (p 277).<sup>7</sup> Undoubtedly some parents are unaware that hyperthermia may develop during an illness when body temperature rises in an infant who is not yet old enough to remove clothing. Despite recent evidence showing that well infants can efficiently control their temperature despite overwrapping,<sup>8</sup> advising parents not to overwrap their babies seems reasonable.

The question of sleeping position is more difficult. So far 14 retrospective studies have considered the topic<sup>9</sup>; 11 reported that sleeping prone was significantly more common in infants dying of the sudden infant death syndrome than in controls. Letters to this journal, however, have suggested a potential problem from recall bias in these studies<sup>10-12</sup>; this is particularly likely when traditional advice had recommended the prone position. A much needed prospective study has now been reported.<sup>13</sup> This, however, suffers from two problems. Firstly, it was not population based but dealt with a cohort at increased risk of the sudden infant death syndrome because of a combination of epidemiological risk factors. Secondly, prospective data on sleeping position were available only on 19 of the 29 infants who died. After correction for confound-

ing variables the relative risk for infants sleeping prone at 1 month was 3.92 (confidence interval 1.37 to 11.24).<sup>13</sup>

New Zealand and Avon have reported fewer deaths from the sudden infant death syndrome after their parental education programmes were introduced (p 282) (E A Mitchell *et al*, paper to the European Society for the Study and Prevention of Infant Death, Rouen, 5-7 June 1991).<sup>14</sup> These data provoke several questions. Firstly, the initial rates of the sudden infant death syndrome were abnormally high in both centres: Will the apparent reduction in mortality be transferable to other populations? Secondly, the rate of the sudden infant death syndrome in Scotland, where changes in infant care were not specifically recommended, has fallen by over 40% in two years: from 2.24/1000 (1989) to 1.30/1000 (1991).<sup>15</sup> This begs the question of whether the fall in mortality in Avon and New Zealand is directly related to the intervention and whether it will follow intervention in other places. Finally, is it possible to separate out the contribution of a fall in prone sleeping to the reduction in the rate of the sudden infant death syndrome from changes in the other risk factors (smoking, breast feeding, and thermal control)?

Ideally, a randomised controlled trial should be performed to determine the importance of sleeping position, which could also identify any particular hazards of the prone position. Without such a trial, which would probably be considered to be unethical (as it was in New Zealand), the relative contribution of sleeping position to the syndrome may remain unresolved. Whatever happens, the intervention programme initiated by the British government needs careful monitoring. Modifying infants' sleeping position seems straightforward, but parents may not find it so easy. Some babies like to lie prone. Parents who cannot persuade their baby to sleep supine or on his or her side must not be made to feel that they are failing their baby.

Other factors may reduce risk, but these have received much less attention recently. The possible benefits of having health visitors devote more attention to infants at increased risk of the syndrome, based on an epidemiological score initiated in Sheffield in the late 1970s,<sup>16</sup> are largely forgotten. Unfortunately, a controlled trial of this intervention was stopped before a significant reduction in the sudden infant death syndrome was documented. Morley and colleagues have devised a system for the early detection by parents and health care workers of serious illnesses in infants,<sup>17</sup> which may help to reduce the incidence of the syndrome. The findings in epidemiological and pathological studies of an association

between infection and the sudden infant death syndrome suggest another possibility for intervention. Thus preventing pertussis by improving the uptake of immunisation and avoiding infection in infants under 6 months of age could have benefits.<sup>18 19</sup>

In countries that seek to optimise the environment of babies and mothers before and after birth infant mortality from all causes (including the sudden infant death syndrome) is low.<sup>20 21</sup> Infant mortality (both from all causes and from the sudden infant death syndrome) is high in socioeconomically deprived families.<sup>22</sup> The implications of this are obvious, although the financial costs of reversing the effects of deprivation would be high.

Although apnoea monitors have been promoted by several organisations, they miss most life threatening episodes of hypoxaemia.<sup>23</sup> British paediatricians reported 64 deaths occurring in the home despite infants being on such monitors

(personal observations). A transcutaneous monitor, which is 100% sensitive in detecting hypoxaemic episodes, is now available for infants at high risk of sudden death.<sup>23</sup>

Several strategies that might reduce the incidence of the sudden infant death syndrome are therefore available. We believe that further evidence of the potential benefits of improving the socioeconomic environment of the baby before and after birth should be sought urgently. The effectiveness of a recently mounted campaign to modify babies' sleeping position and thermal environment and parents' smoking habits remains to be determined.

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## Relabelling blood

### Read new labels carefully

From 1 April black and white labels will replace the coloured labels used to identify blood groups in the United Kingdom. This represents a step towards the goal of uniformity of labelling blood worldwide, sought by the committee on automation and data processing of the International Society of Blood Transfusion. Because countries could not agree an international colour code the committee recommended the adoption of black and white labels.

The United Kingdom now joins Canada, (civilian) Germany, the Netherlands, Norway, and the United States in having black and white labels. Elsewhere a wide range of conflicting colours persists. Group O blood is labelled green in Belgium, blue in Denmark, and red in France. A yellow label denotes group A in Italy, group B in France, and group AB in Denmark.

Why change? The deployment of multinational forces in the Gulf war highlighted the potential for confusion during emergencies. When stressed, people tend to choose blood from a refrigerator by the colour of the label rather than by what it says. There is also a civilian interest in achieving uniformity as transporting red cells across national boundaries may become more common with the European single market.

Blood group labels on packs containing red cells and other products (for example, platelets) are overstick labels—that is, they are attached to the right hand side of the manufacturer's pack label when the blood group of the donor is known. In the United Kingdom a minimum requirement was that there should be a standard position for the information given on the

