Correspondence

Apnoea monitoring at home

Sir,

The idea that sudden death in infancy might be prevented by the use in the home of apnoea alarms (to signal a pause in breathing) has received considerable publicity. The Scientific Committee of the Foundation for the Study of Infant Deaths is keeping this suggestion under constant review. In 1978 we consulted more than 30 experts; in June 1979 over 40 doctors and scientists held a 2-day conference on apnoea and unexpected infant death; we have recently supported new grant applications for clinical studies of respiration and for preliminary work aimed at determining the best method of surveillance of infants in the home. Meanwhile it has been agreed that the following statement should be issued:

In the last few years alarms called respiration or apnoea monitors have been developed to monitor a baby's breathing movements. A bell rings and a small light flashes if breathing movements cease (apnoea) for more than a chosen period, usually 20 seconds. Some monitors use a sensor placed beneath the baby's mattress, others use a small capsule attached to the baby's abdomen with sticking plaster.

(1) Breathing stops when a person dies, and if anything can be done to save a child at that moment, an apnoea alarm may make this possible. It is not, however, always possible to revive a child by the time breathing movements have stopped. There is also the danger that, even if resuscitated, serious brain damage may already have occurred.

The problem is complicated by the knowledge that some apparently normal infants have natural pauses in their breathing when asleep, and then start to breathe again spontaneously. The significance of these pauses is not understood. The alarm sounding during a temporary pause may interrupt the baby's normal sleep rhythm and it is not yet known whether this is undesirable.

(2) Limitations of the equipment: the apnoea alarms currently available for home use are designed to monitor breathing movements of the chest or abdomen, or both, and do not immediately detect a blocked airway since the muscles controlling breathing movements can go on functioning for sometime even though no air is reaching the lungs.

The monitors occasionally give false alarms. Sometimes they fail to detect shallow breathing and ring the alarm although the baby is quite all right. The alarm will also sound if the equipment becomes detached from the baby.

On the other hand, instances are known of the monitor picking up the heart beat or other baby movements and failing to detect that breathing movements have stopped.

(3) The value of using apnoea alarms to prevent unexpected infant deaths is not yet established. The extent to which a prolonged apnoeic spell is the

underlying cause of death in an otherwise healthy infant is not yet known. Only a small proportion of babies who have died unexpectedly have had a proved history of apnoeic spells. There is therefore insufficient evidence to recommend the widespread use of apnoea alarms for normal babies to prevent cot deaths.

(4) There are however certain groups of babies for whom, as part of their management and for a variety of reasons, paediatricians may wish to recommend an apnoea monitor for use at home. These may include (a) preterm babies who sometimes seem especially susceptible to prolonged apnoea and whose breathing may still be irregular, when otherwise clinically well; (b) babies who have been found apnoeic (not breathing) and cyanotic (looking blue), sometimes called 'near miss' cot deaths. There are of course many different reasons for these so-called 'near miss' events—such as pneumonia, seizure, disturbed body chemistry, and regurgitation as well as breathholding attacks, airways obstruction, and other breathing disorders for which careful examination should be made; (c) some subsequent siblings (brothers and sisters) of cot death babies who may be at slightly increased risk whose parents need some kind of extra support.

(5) Paediatricians and physiologists researching this field recommend that if a baby is to have a monitor for use at home the parents must first discuss their baby's needs and their own with a paediatrician who is able (i) to examine the baby and choose the most suitable kind of monitor, (ii) to train the parents in resuscitation methods (mouth-to-nose-and-mouth or bag and mask) to enable them to cope should the baby be found apnoeic and cyanotic, and also (iii) to arrange for a support system, available 24 hours a day, seven days a week in the event of the equipment breaking down and needing immediate replacement, or other crisis which may include temporary admission to hospital.

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