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Sudden infant death syndrome

Sir,

Once again the sudden infant death syndrome has attracted media attention and consequent widespread public speculation as to its cause. However, despite intensive and ongoing research the physician is left with few clear guidelines either for himself or to impart to others.

Sudden infant death syndrome is an unexplained event even after autopsy, with an incidence of about two per 1000 live births. It usually occurs during sleep and is the commonest cause of death in the postneonatal period (from 28 to 364 days of life). The risk is greatest for infants aged between one and four months, for those with a low birth weight, and during the colder seasons.¹ Although the usual age range given is two weeks to two years, a similar syndrome is sometimes seen in older children and adults.

The following facts about sudden infant death syndrome are known: around half the cases of sudden infant death syndrome have some evidence of antecedent respiratory infection; the only consistent post-mortem findings are mild pulmonary congestion and intra-thoracic pinpoint haemorrhages; recent work has shown a high incidence of microscopic changes in the laryngeal area;² post-mortem biochemical evidence suggests that death is usually preceded by a relatively long period of tissue hypoxia;³ proof that some infants have a period of apnoea before irreversible changes occur is lacking, but conventional movement-sensitive monitors will not detect upper airways obstruction where ventilatory efforts continue despite lack of airflow;⁴ infant positioning and bedding have now been shown to be important determinants of risk, with the prone position and excess

heavy coverings proving undesirable;⁵ in the near-miss type scenario, sudden stimulation of the baby often appears to initiate recovery.

We believe that the available evidence points strongly to upper airways obstruction as the most likely aetiology for sudden infant death syndrome, probably in the form of laryngospasm precipitated by reflux or inflammatory secretions. Hypoxic or reflex bradycardia may then lead to asystole, especially in the presence of an immature autonomic nervous system. It is perhaps surprising that the prone position is not to be recommended but side positioning is a safe alternative which is theoretically, if not empirically, better than supine. The role of the baby's coverings is not clear but it may be that restrictive bedding splints the airway in an undesirable position. Obstructive apnoea is a difficult phenomenon to investigate or prevent but pulse oximetry would appear to be the monitoring and research tool of choice in the future.

Thus at present, the following simple advice, designed to protect the upper airway, would appear to be the best on offer: infants should be positioned on their side while they are unattended or sleeping; infants should not have a pillow; bedding should be loosely applied and should not be too warm or restrictive; parents should check the baby fairly frequently to make sure that it is comfortable and not too warm; the infant should be kept in the parents' room at night. This advice is doubly applicable in the presence of respiratory infection, catarrh or vomiting.

We recommend the above in our own departments and feel that it is applicable to all those who deal with a wide variety of young children, whether in general practice or departments of paediatric or accident and emergency medicine. We

realize that it is based on an unproven aetiology but the truth remains elusive and the search for it may delay thoughtful intervention.

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Management of needlestick injuries

Sir,

From our experience in teaching and postgraduate assessment in general practice, it is apparent that many doctors do not have a suitable management protocol for needlestick injuries. This subject was addressed as part of the *Practitioner* education programme (postgraduate education allowance accredited distance learning programme) held in May 1991.

In addition to individual feedback, all course participants were sent a suggested management protocol. The core of this model is suitable for adaptation for individual practices, or indeed hospitals and other medical institutions.

- Immediately following the needlestick injury the site should be washed thoroughly with soap and water. Exposed mucous membranes should be irrigated copiously with water. Free bleeding may be encouraged but the site should not be sucked.

- The health care worker should be referred promptly to the practice doctor designated to deal with such injuries. This doctor should possess current information about post-exposure prophylaxis in relation to hepatitis B and human immunodeficiency virus (HIV) infection. If necessary the worker may be referred on to the doctor designated within the health authority to manage such injuries. The name and telephone number of this doctor should be available in all practices.

- The doctor responsible for managing the injury must interview the source patient (or the general practitioner responsible for his or her care), to determine the presence of risk factors for HIV or hepatitis B. If there are no risk factors the health care worker should be reassured.

- If risk factors are present, the source patient must be counselled and consent sought for screening for HIV and hepatitis B. Blood samples already obtained must not be tested without the consent of the source patient. If consent is withheld or the source patient cannot be identified, then the injury must be managed as if the blood were infected with HIV and/or hepatitis B.

- If the source patient is known to be infected with hepatitis B, or risk factors are present, then post-exposure prophylaxis should be offered to the health care worker within 72 hours of the injury. Blood should be taken first so that antibody status can be determined subsequently. Workers who have been previously immunized may be given a booster dose while those who have not may commence active immunization with hepatitis B vaccine and be passively immunized with hepatitis B immunoglobulin at the same time. This situation should be discussed with the local public health laboratory. It should be ensured that the local pharmacy keeps hepatitis B vaccine and hepatitis B immunoglobulin in stock.

- If the source patient is known to be infected with HIV, or risk factors are present, the worker must be counselled and an HIV test offered in order that the current HIV status of the health worker be ascertained. Alternatively, blood may be

taken and stored for future testing. Current advice on prophylactic treatment from the Public Health Laboratory Service Communicable Disease Surveillance Centre (081-200 6868), or the Communicable Disease (Scotland) Unit (041-946 7120), should be sought and acted upon within two to three hours. Further management of this situation is properly carried out by the health worker's own general practitioner in conjunction with the local HIV specialist team. Further HIV tests at three and six months should be carried out.

- Full documentation of the circumstances of the injury is essential. Attention to confidentiality and the rights of both the source patient and the health care worker are of prime importance. Specialist colleagues should be consulted early in the management process.

As urgent decisions concerning testing and possible preventive treatment may be necessary, it is suggested that appropriate contact telephone numbers are added to the protocol, for example, the director of public health, HIV/acquired immune deficiency syndrome (AIDS) designated physician, and the HIV/AIDS clinical nurse specialist, counsellor or senior health adviser.

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Health checks in general practice: a comparison of two invitation letters

Sir,

With the advent of the new general practitioner contract, more doctors are offering health checks in general practice. For this to be successful it is imperative that effective invitation methods be identified and tested. In one method target patients are identified and written to; attendance rates in response to such invitations have been modest, ranging from 36% to 72%.^{1,2} However, letters of invitation

vary and perhaps, most importantly, patients may be sent an open invitation to contact the practice to make an appointment or they may be sent an actual appointment time. We carried out a study to compare these two types of letter.

The study was conducted in a rural practice in Norfolk, consisting of four general practitioners with a combined list size of approximately 6500 patients. A total of 872 patients (433 men, 439 women) aged between 30 and 41 years were randomly allocated to receive either an invitation letter with an appointment time or one with an open invitation to make an appointment. Of the 872 patients, 54 were removed from the study because they had left the practice, were not at their address or because their general practitioner felt it inappropriate for them to be invited.

Seventy per cent of the 399 patients given appointment times attended a health check, compared with 37% of the 419 patients sent an open invitation. It was found, therefore, that sending patients appointment times produced a substantially higher attendance rate than sending open invitations ($\chi^2 = 86.98$, 1 df, $P < 0.001$). This is in line with results found with cervical cytology³ and breast cancer screening,⁴ and may be due to the greater onus put on the patient to attend when sent an actual appointment time. The range of attendance rates obtained in the present study is similar to those reported elsewhere for health checks in general practice.^{1,2} The pattern of results was repeated when the attendance rates were calculated separately for men and women. Sixty per cent of the 193 men sent an appointment time attended for a health check compared with 30% of the 212 men sent an open invitation ($\chi^2 = 37.83$, 1 df, $P < 0.001$). Seventy nine per cent of the 206 women sent an appointment time attended for a health check compared with 45% sent an open invitation ($\chi^2 = 50.30$, 1 df, $P < 0.001$). These results also show that women were more likely to attend than men when sent a letter both with an appointment ($\chi^2 = 16.21$, 1 df, $P < 0.001$) and without an appointment ($\chi^2 = 10.00$, 1 df, $P < 0.01$). Finally, it was also found that sending appointment times produced a greater proportion of wasted appointments in relation to the number of invitations sent (14.0% versus 1.7%, $\chi^2 = 43.95$, 1 df, $P < 0.001$), thus replicating the findings of earlier studies.^{2,3}

These results have important implications for those who rely on letters of invitation to offer health checks and other preventive services in general practice. They show that, as with other invitation methods,² the sending of letters is likely