LETTERS TO THE EDITOR

Cough - but is it asthma?

EDITOR,—Although the scientific content of Sheila McKenzie's recent review is impressive,1 I do not agree with her conclusions. There is a group of children that one often sees in clinic, usually preschool children who have cough, a persistent nocturnal cough that may wake them three or four times a night. Although there may be a personal history of eczema and a family history of atopy in general, there is often nothing to suggest personal wheeze. In view of this, it is often difficult to demonstrate airways lability scientifically. Dr McKenzie's approach seems to offer these children and their parents little except tea and sympathy. In my experience the success of such practice is something like the absence of a placebo effect. The scientific purists it certainly pleases the parents.

Clearly more research is required to elucidate this problem. I feel that in the absence of wheeze, however, that tests based on bronchial hyper-reactivity are not likely to be useful. Histological evidence of airways inflammation from direct bronchoscopy would be interesting but currently there is so little known about the early changes in childhood asthma that such an approach at present would not produce useful results. A double blind randomised trial of the use of inhaled steroids in this situation would be one way forward and the measurement of breath nitric oxide may help clarify the degree of cough inflammation would also be one interesting approach for the future.2

C UPTON
Norfolk and Norwich Hospital,
Brunswick Road,
Norwich, Norfolk NR1 3SR

Dr McKenzie comments:

Antibiotics used to be prescribed for cough and sometimes still are. Parents often claim their benefit, as Dr Upton's parents do for steroids. Anecdotally, it is not a substitute for a good clinical trial.

Parents, of course, are pleased to be given a prescription and doctors are often delighted to write one, but sometimes parents are better pleased with an explanation. There is no proof that any medication is better than no medication for cough. I have to admit that my own practice on a two week trial of \( \beta \) agonists is far from satisfactory.

I agree with Dr Upton that treatment of cough with inhaled steroids needs proper evaluation. There is not much at present to support their empirical use. My main concern is that too many children could be labelled asthmatic because their cough improves while they are taking steroids. This could be purely coincidental or it could be that steroids affect the cough by a mechanism different from that in asthma. I suspect the understanding and treatment of cough in children is likely to be one of the growth industries of the next decade.

Ethnicity and the sudden infant death syndrome: important clues from anthropology

EDITOR,—Davies and Gantley question a number of entrenched views on infant care practices.1 The welcome fall in sudden infant death syndrome (SIDS) has accompanied the reduction in the prone sleeping position of infants in several countries after 'risk reduction' campaigns suggests that apparently small changes in infant care practices may have profound effects upon infant well being and survival.

At birth the human infant is the least neurologically mature primate, with the longest and most intense postnatal dependence upon the infant's mother. Infant mortality is separated from their mothers for brief periods experience adverse physiological consequences, including increased adrenocorticotrophic hormone concentrations, reduced body temperature, cardiac arrhythmias, and compromise of the immune system.2

In the home environment, mothers are able to achieve a thermonuclear environment for their sleeping infants with remarkable accuracy.3 Studies of mothers and their 3 month old infants sleeping either in separate rooms or in the same bed (‘co-sleeping’) within a sleep laboratory on successive nights have shown the complexity of the infant interactions during sleep.4 Co-sleeping mothers and infants continually induce mutual small arousals, the infants breast feed more frequently than when sleeping separately, and mothers actively monitor and regulate their infant's thermal environment. The infants' inspired air commonly contains 0·5-1·1% carbon dioxide from the mother when co-sleeping. Co-sleeping babies spend less time in the deeper stages of sleep. Co-sleeping mothers almost always place their infants next to them in a supine position, close to their nipples, so that the infants can feed. The supine position is the only one in which infant manipulation, control, and breast feeding is facilitated.5

Infant sleep, breathing, arousal, and thermoregulation all evolved in the context of continuous parental contact, and no evidence has been produced on the benefits of solitary sleeping arrangements.

Western values favour early autonomy and individualism and researchers inadvertently may have overemphasised the infant's physiological independence from its caregivers, confusing the infant's preparedness to adapt with actual adaptation.6 Anthropological studies of parents and infants provide the basis for postulating that for some, possibly small subclass of potentially vulnerable infants, mother-infant contact throughout the night may be protective. Human evolution studies that have synthesised data on human behaviour, and studies of mother-infant interactions can give important insight into normal human development.


Leucocyte adhesion deficiency syndromes

EDITOR,—El Habbal and S Strobel recently gave an interesting overview of what is known about the leukocyte adhesion deficiency (LAD) syndrome and the molecular basis of adhesive events that occur in the immune response.1 I would like to point out some details that need clarification. The authors state the adhesion molecules can be subdivided into three superfamilies: the integrins, the selectins, and the members of the immunoglobulin superfamily. The tables of the review listing the various components, their tissue distribution, and the supposed ligands contain a number of errors which might be misleading for the understanding of the regulation of adhesive interactions.

Members of the integrin family of adhesion molecules are heterodimers which are formed by the association of an α chain with a β chain. Neither VLA-4 (α4β1) nor the β6 integrins are identical with LPAM-1, the lymphocyte Peyer's patch adhesion molecule-1. The LPAM-1 (α4β7) shares the α4 chain with VLA-4, however, the β chain is different (β7 versus β1 or β6) and therefore LPAM-1 belongs to the β7 integrins. This is critical for the regulation of lymphocyte homing because LPAM-1 specifically mediates the binding of lymphocytes to the mucosa associated lymphoid tissue of the gut. LPAM-1 is expressed on T cells as well as on B lymphocytes and is implicated in the binding of lymphocytes to CD44 on T cells. In contrast, the ligand is not CD28 (here the β7 integrin has been mixed up with B7, one of the most important costimulatory molecules expressed on B lymphocytes and binding to CD80 and CTLA-4 on T cells). In contrast, the ligands so far identified for LPAM-1 are: MadCAM-1, VCAM-1, and the extracellular matrix protein fibronectin. VLA-4, however, is identified with LPAM-1 and MadCAM-1. The authors of Peyer's patch adhesion molecule-2, which has been erroneously listed as being VLA-2.
We thank and intend to discuss the 'compositional' data published, and single reports, however interesting in their own right, were not included.

†ICAM-3, a member of the immunoglobulin superfamily and constitutively expressed on lymphocytes and intradermal Langerhans cells, should be added to the list of counter-receptors of LFA-1 since it has been cloned already in 1992.

CD21, TAPA-1, Leu-13, and CD19 form a complex on the surface of B lymphocytes that upon crosslinking transmit signals into the cell but has not been identified to function as a ligand for β4 integrins in adhesive interactions.

A recently described novel LAD syndrome termed LAD type 2 deserves being mentioned. This complex syndrome is characterised by recurrent bacterial infections with high neutrophil counts, mental retardation, short stature, and the Bombay blood phenotype. The analysis at the molecular level revealed the lack of expression of Sialyl-Lewis X (sialylated form of CD15), the carbohydrate ligand of the leucocyte adhesion molecules E-selectin and P-selectin, on haemopoetic cells. Due to this defect neutrophils are no longer capable of adhering to endothelial cells using the E- and P-selectin pathway which initiates the transmigration of immunocompetent cells through the blood vessel. The underlying mechanism leading to the deficiency of Sialyl-Lewis X probably is a general defect in the fucosylation of glyco-proteins and carbohydrates. The disturbance of the fucose metabolism would also explain the Bombay blood phenotype and may lead to the understanding of the other components of the syndrome as, for example, the mental retardation.

NORBERT WAGNER
Institute for Genetics, Division of Immunology, University of Cologne, W-5093 Cologne, Federal Republic of Germany

Migation of fine bore Silastic catheter to pulmonary artery

EDITOR,—We wish to report a serious compiliation that arose during insertion of a long line, which was to be used to administer intravenous antibiotics to a 12 year old boy with cystic fibrosis. A fine bore Silastic neonatal catheter (Epicanuto-Cava-Catheter model No 1284, Vygon) was used. This model has a detachable Silastic indwelling catheter which is inserted through a supplied 19 gauge needle. The proximal end of the catheter contains a short metal rod which is anchored into the distal end of the external supply line to prevent migration once sited. After repositioning of the left basilic vein the catheter, unattached to the supply line, was threaded through the needle. The catheter was almost fully advanced so that the distal end might lie in a satisfactory position within the great veins. The needle was then removed from the vein and disengaged from the catheter by threading in the LAD model. At this point the catheter was in final vision and when the needle was fully removed, the proximal end was still not visible. Chest radiography revealed the metal proximal tip of the catheter to be lying in the right pulmonary artery. The catheter itself was radiolucent. We presume that dynamic venous flow and negative intrathoracic pressure caused aspiration of the whole catheter and its return into circulation. Subsequently, the patient underwent general anaesthetic and cardiac catheterisation. The catheter was successfully removed intact using a snare wire during a difficult and lengthy procedure.

We have used this type of line successfully for a number of years. The manufacturers inform us that this complication has occurred once before worldwide. They also stated that adherence to the instructions included with the line, updated in April 1992, should prevent this complication. The instructions state that, after advancing the catheter through the needle to the desired position, ‘the catheter should then be fixed in its final position by applying slight pressure beneath the needle tip and the needle is then withdrawn’. However, there is no warning in the instruction leaflet of the potential complication reported here. We therefore gather that this will be highlighted in future.

The use of short and long indwelling venous catheters is known to carry a small risk of embolism to the heart and great vessels and has in the past led to both serious morbidity and mortality due to thrombus formation, infection, and perforation. For these reasons, attempted removal of embolised catheters or fragments is recommended. This has been achieved by cardiectomy or cardiac catheterisation. Embolism has been more commonly reported with use of the ‘catheter in needle’ cannula where during insertion the needle shears off the distal part of the catheter. This complication has led to widespread use of ‘needle in catheter’ forms of cannulas, although these are not free from risk of fracture and embolism. Embolism due to disconnection of the catheter from the supply line also has been described and most catheters now in use have undetectable external hubs to prevent this problem. The catheter used in this report is one of the above safety features. For such lines to be used safely, it is necessary to ensure that throughout insertion the line is at all times both visible and held externally.