

receptors patients should have some other form of local treatment, either wide local excision under local anaesthesia or radiotherapy, or both.

For locally inoperable disease combined radiotherapy and tamoxifen is probably the best treatment. In metastatic disease, knowing the oestrogen receptor status is useful because tamoxifen is unlikely to be effective in tumours that are negative for the receptors. In such patients palliative chemotherapy may provide worthwhile responses without appreciable toxicity.^{22 23}

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Managing infants who cry persistently

Support services need to be developed while promising leads are pursued

During the first postnatal year persistent crying by apparently healthy babies is a common source of distress among families and referral to health services and has been linked to child abuse.¹ Three treatments exist: drugs, diet, and changing parental behaviour. Another approach is to help parents cope with the crying rather than to treat it.

Of the various drugs that have been tried, only dicyclomine hydrochloride has consistently proved effective, reducing crying in most cases.^{2,3} Its manufacturers, however, discourage its use in infants because of reports of adverse reactions and death. A high response to placebo is characteristic of drug studies.⁴

The belief that pain related to digestion (colic) causes crying has produced many reports but little evidence. Gastrointestinal symptoms may also result from rather than cause persistent crying. The possibility that intolerance of cows' milk causes crying in a subgroup of infants has, however, received support from two controlled studies,^{5,6} although the clinical importance of these findings is not yet clear. Such intolerance seems rare, occurring in about one in 30 infants overall, compared with the one in five referred for persistent crying or colic.^{1,6,7} It may occur in both bottle fed infants and breast fed infants (through maternal ingestion of cows' milk).

There is no way of distinguishing the intolerant infants from others who cry persistently. Moreover, although crying improves after treatment, it continues intermittently and at a higher level than normal.⁵ Forsyth recommends that if changes in the formula are contemplated parents should be counselled that the intolerance is probably short lived, so that their baby won't necessarily be "allergic" in the longer term.⁵ Both published studies replaced cows' milk with a hydrolysed casein formula; Lothe and Lindberg caution against using alternatives based on soya.⁶

With regard to parental behaviour, it seems unlikely that

most parents of crying babies differ substantially from other parents in their approach to care. For example, maternal experience—a powerful predictor of maternal confidence and behaviour—seems irrelevant: firstborn infants do not cry more.¹ Similarly, leaving babies to grizzle and settle is common and not a good predictor of later crying levels.⁸ In some cases, however, extremes of parental behaviour or failure to read individual infants' needs may be responsible.

Although studies of behavioural intervention have shown that rhythmic stimulation and movement soothe crying, whether these prevent or reduce persistent crying in the longer term is not known. In a controlled study Hunziker and Barr found that carrying infants for an extra two hours a day from the third postnatal week greatly reduced crying, particularly in the evenings at around 6 weeks of age.⁹ A recent attempt partially to replicate this study in the community, however, was unsuccessful (I St James-Roberts and R G Barr, unpublished findings). Barr and colleagues also found that such carrying was ineffective in treating infants referred for excessive crying.¹⁰

Rather than modifying carrying, Taubman designed a six point treatment to increase the amount of responsive care and stimulation provided by parents. This proved better than reducing stimulation¹¹ or eliminating cows' milk or soya milk.¹² By contrast, McKenzie found that admission to hospital and "reduced" stimulation lessened crying in a subgroup of referred infants.¹³ As this approach seemed designed to make stimulation more sensitive and contingent rather than to withdraw it, the inconsistency with Taubman's approval may be more apparent than real. Unfortunately, neither researcher provided evidence that the interventions were implemented—the changes in parental behaviour are therefore unknown.

When parental care falls within normal limits the alterna-

tive to treating crying is to mobilise services to help parents to cope. The need for such support is highlighted both by the lack of reliable treatments and by evidence that referred infants do in fact cry for long periods (I St James-Roberts *et al*, unpublished observations) and continue to have behavioural problems at 3 years of age.¹⁴

Considering the impact of crying on families and the cost of referral to the health services, the lack of standard tested methods of surveillance and support is striking. Potential goals for such services include providing parents with information about the normal range of crying and its development, counselling them about their feelings of frustration and inadequacy, and helping to prevent their relationship with their infants from deteriorating. Diaries and questionnaires for measuring crying are available together with normative information and may provide reassurance and a framework for planning.^{15 16} Studies establishing the most cost effective means of delivering such services are an obvious priority.

If viable treatments are to be achieved improvements in measurement and the design of research are needed. In particular, parental measure of "crying problems," though important, need to be distinguished from measures of crying, since the two only loosely correspond.^{14 16} Standardised parental diaries are sufficiently accurate measures of crying for most purposes.^{5 10 15} Where parents cannot keep such diaries or the intensity of crying needs distinguishing from its insolubility audio or video recording is appropriate.¹⁶ Day to day variabilities in crying are substantial, making it difficult to decide whether a genuine improvement has occurred. Barr has calculated that six days of diary data provide an optimum measure.¹⁷

Guidelines have been drawn up for the design and control of studies of dietary intervention^{5 7} but not for studies of parental behaviour. These should include measures of the

target parental behaviour before and after treatment and control groups so that relations between parental behaviour and crying can be established. Lastly, as the pattern of crying varies with age (describing an inverted U) and is increasingly subject to learning as infants develop,¹⁸ the age of the infants being studied needs to be taken into account.

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Nocturnal asthma

What happens to the airways at night?

Waking at night struggling for breath, wheezing, and coughing can be a terrifying experience. To have doctors write off these scaring episodes as unimportant has annoyed generations of people suffering from asthma. But now we are realising that the patients were right after all.

Nocturnal asthma is both common and serious. Mortality from asthma rises at night. A survey of general practitioners has shown that nocturnal wheeze or cough wakes three quarters of asthmatic patients occasionally; two fifths wake every night.¹ Nocturnal wheezing often impairs daytime cognitive performance.² Unless we specifically ask every asthmatic patient about nocturnal symptoms we will miss this important cause of impaired quality of life.

Why should nocturnal symptoms be so common? Like most biological variables normal lung function has a circadian rhythm, with peaks at 1600 and troughs at about 0400. In people with asthma the fluctuations are much more pronounced: peak expiratory flow may vary by about 50%, compared with 8% in unaffected people.³

Several factors trigger bronchoconstriction at night.^{4 5} Sleep seems to synchronise the circadian rhythm: in shift workers peak expiratory flow varies with the time of sleeping rather than time of day. Techniques that enable continuous monitoring of airway resistance during sleep show that sleep increases airway resistance, partly by reducing the hyper-

inflation seen in asthmatic patients.⁶ This effect hardly varies according to the stage of sleep, but snoring may exacerbate the problem.⁷ Nasal continuous positive airways pressure is effective in patients with obstructive sleep apnoea and asthma.⁸ Lying down may exacerbate wheezing slightly; an adverse effect from gastro-oesophageal reflux is less certain.⁹

More severe daytime disease is associated with more nocturnal bronchoconstriction. Airways become more twitchy at night, with higher reactivity to inhaled bronchoconstrictors and aerosol allergens. Although the late asthmatic response is enhanced at night,¹⁰ allergens in bedding are not the cause. Hypoxia increases bronchial reactivity slightly, and lower body temperature during sleep may cause bronchoconstriction. Although airway mucus is cleared more slowly at night, its importance in nocturnal asthma is uncertain.

All these factors exacerbate nocturnal wheezing slightly on their own; we are only just beginning to understand how their interactions may contribute substantially to the problem. (So far no factors improving nocturnal asthma have been identified.)

How do these factors trigger bronchoconstriction? The autonomic nervous system, hormones, and inflammation are possible candidates. The autonomic nerves responsible for bronchial smooth muscle tone are mainly under parasympa-