Correspondence

Fulminating encephalopathy and Shigella flexneri infection

Sir,

There was a disappointing lack of epidemiological information in the paper by Sandyk and Brennan. It would for example have been interesting to know whether the 3 children reported with fulminating encephalopathy associated with Shigella flexneri infection had acquired the organism from the same source and whether the type 2a strain is unusual in Johannesburg.

A dysenteric encephalopathy in which there is sudden onset of altered consciousness and convulsions, often without signs of colitis initially, has been described among Japanese children. The condition is called Ekiri (Eki means epidemic, ri means diarrhoea) and it used to be a common cause of death in 2-5 year olds in Japan, although it has disappeared in recent years.

Sandyk and Brennan comment that in their patients, organs other than the brain and bowel appeared normal at autopsy. In Ekiri, however, the pathological findings are similar to those described in Reye's Syndrome (RS), with microvesicular fatty infiltration of the liver. Furthermore, Japanese workers describe an experimental model of RS using Shigella flexneri endotoxin in rabbits.

Enteroinvasive Escherichia coli are microbiologically almost indistinguishable from shigellas and cause identical diarrhoeal disease, although neurological complications have not been described. It is interesting to speculate on the possible role in the aetiology of encephalopathies of unknown cause, of neurotoxins elaborated by some gut organisms perhaps as yet unidentified or currently considered non-pathogenic.

References


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Dr Sandyk and Dr Brennan comment:

The dysenteric encephalopathy described in our 3 cases had been acquired simultaneously in different areas of Johannesburg. All subjects were white and all were admitted to hospital in the same week. Although the type 2a strain appears to be uncommon in the area of Johannesburg, a similar dysenteric encephalopathy was observed in 1976 in Johannesburg. We were, however, unable to find any documentation of these cases.

The shigella encephalopathy described in our cases may have some clinical and pathological resemblance to Reye's syndrome (both characterised by cerebral oedema and lack of cellular infiltration). However, whereas in the latter disorder the primary brunt of the process is believed to be upon the liver (the encephalopathy being mainly secondary to hepatic insufficiency) in our cases there was no pathological and biochemical evidence for hepatic failure or other important metabolic derangement. This would suggest that the dysenteric encephalopathy resulted from a direct neurotoxic effect elaborated by the shigella organism. Whether other neurotoxins perhaps elaborated by some other yet unidentified organisms may have contributed to the fulminating encephalopathy remains speculative.

Birthweight of Asian babies in Birmingham

Sir,

I read the paper by Clarson et al. from the Sorrento Hospital in Birmingham with both interest and a sense of disappointment. I agree entirely with the authors’ conclusions that (a) no such entity as an ‘Asian’ standard exists and (b) the details of the subethnic structure of an immigrant population need careful assessment. I was dismayed however to find that their 1978 study lumped ‘Pakistani’ and ‘Bangladeshi’ mothers together and compared them to ‘Indian’ mothers. Political considerations aside, this is not acceptable since the ethnic differences between ‘Pakistani’ mothers and ‘Bangladeshi’ mothers are significant. As presently constituted, ‘Pakistani’ mothers should include Panjabi, Sindhi, Baluchi, and Pathan mothers, who would have more in common genetically and otherwise with their Panjabi (Indian) counterparts across the border. Similarly, ‘Bangladeshi’ mothers would have more in common (genetically and otherwise) with their counterparts from West Bengal (India).

The size and complexity of the Indian subcontinent needs to be emphasized, and a simple reference to an atlas would indicate that the Indian subcontinent should be compared to the whole of western Europe in terms of both geography and population. Religious differences and eating taboos also complicate the picture. Furthermore, in the case of the ‘Asian’ populations studied what proportion of the mothers in both ‘Pakistani’ and ‘Indian’ groups were ‘East African Asians’? Were all mothers of the Islamic faith characterised as ‘Pakistanis’ and all Hindus/Sikhs classified as ‘Indian’?

I believe the secular changes in birthweight outlined by Clarson et al. are of great interest, but that more attention should have been paid to the ethnic and cultural details. This would mean that a much larger series would have to be collected and studied, but the importance of the study would justify this.

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We explained why 1978 Pakistani and Bangladeshi mothers were 'lumped together' and commented that the results from the Pakistani mothers were also analysed separately but this led to no change in the conclusion drawn. Few Bangladeshis (8% of our Asian patients) attend Sorrento anyway.

We are uncertain whether Dr deSa suggests that our Pakistani patients should be divided into 4 subgroups. He will probably know that people from the Indian subcontinent who come to this country tend to retain their identity by congregating in smallish groups according to place of origin, kinship, and religion.6 5 Pakistani mothers attending Sorrento come almost exclusively from a small area of north east Pakistan—Mirpur (Azad Kashmir) and the Pakistani Punjab. The secular increase in birthweight therefore, is very unlikely to be due to a genetic change in the population. Environmental factors must play an important role.

It is too easy to claim that a larger series, presumably multicentre, would solve the problem. The numbers would be larger but standardisation would be more difficult and more importantly, geographical spread of maternal origin would probably be wider.

An explanation of the context of this study may help to clarify the position. It was one of a series describing the problems of the Asian mother and her baby at Sorrento, which reached the following conclusions. Babies of similar gestational age, born to Asian mothers at Sorrento are lighter than those of European mothers of similar height and parity.7 Many of these light babies have anthropometric and biochemical changes suggesting intrauterine marasmus (reduced skinfolds and raised plasma triglyceride in cord blood) and they are therefore unlikely to be small normals.7 In view of the secular increase in birthweight of Pakistani babies their lighter weight is unlikely to be due to genetic factors alone; environmental factors operating before and during the pregnancy play an important role (this study). One environmental influence during pregnancy is undernutrition. Food customs and observed food intakes (on average only 1700 kcal per day, which is less than many civil servant mothers eat in Pakistan) might easily lead to nutritional stress.7 Mothers of light babies have anthropometric evidence of nutritional stress—reduced deposition of fat in the second trimester,8—and in these stressed mothers (but not others) a protein energy supplement improves birthweight.9 10

References

Dr Wharton Comments:
We thank Dr deSa for his interest and also acknowledge the useful comments sent to us by other doctors. Dr deSa makes a number of points. He agrees with our conclusion of a 'need to describe an Asian population with details of their subethnic structure' but takes us to task for not subdividing the population further than we did. We accept this criticism but would point out that many obstetric and paediatric papers concerning Asian immigrants in Britain have not made any subdivision at all. We certainly did not automatically classify mothers of the Islamic faith as Pakistanis and all Hindus/Sikhs as Indian. As Dr deSa infers religion does not always indicate geographical origin. Various boundary changes have occurred and at partition the people had some time to decide on which side of the boundaries they would reside—for example a Punjabi may come from Pakistan and be Moslem, or from the Indian Punjab, where the major religion is Sikhism. While a Gujarati generally comes from Gujarat State in India and is a Hindu (Hindu is a Persian word meaning Indian) parts of Pakistan, (a predominantly Moslem area) are also called Gujarati.

Regarding our Indian patients we commented that interpretation of secular changes was difficult and that any further studies should be in a centre with more Indian births than Sorrento. However, other information is available. One third of our Asian patients come from India (compared to a national average of 46% Asian births to mothers coming from India)7 about equally divided between Sikhs from the Indian Punjab and Gujarati Hindus from Gujarat itself.

We agree with Dr deSa's reference to religious differences and eating taboos. We have commented elsewhere on the different dietary patterns of the 4 subethnic groups attending Sorrento (Pakistani Moslems, Punjabi Sikhs, Gujarati Hindus, Bangladeshi Moslems), and detailed observations of their food customs, recipes used, and nutrient analysis are in press.8 Briefly, there were the expected major differences in food practices between the different religious groups, for example Moslems not eating pork, Hindus not eating beef, but nevertheless we often found that meals eaten by Moslems from different parts of Pakistan showed as much variation as the difference between some Moslem and Sikh or Hindu meals. Using the weighed and recall method of dietary assessment we found that the pregnant Pakistani mothers consumed less food during the second trimester than the Gujarati, Hindu, and Punjabi Sikhs attending the hospital.

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References