

Matters arising

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Could Parkinson's disease follow intra-uterine influenza? A speculative hypothesis

Sir: We read with interest the speculative hypothesis advanced by Mattock *et al.*,¹ proposing an intrauterine influenza infection as the possible aetiology of Parkinson's disease.

We feel that this hypothesis, although intriguing and obviously requiring further substantiation, appears to be basically flawed by already existing data from the various twin studies in Parkinson's disease.²⁻⁵ These studies designed to examine concordance for Parkinson's disease in mono and dizygotic twins have demonstrated that the concordance rate for monozygotic twins is extremely low. This evidence confirmed by several studies indicates that genetic factors do not play a prominent role in the development of Parkinson's disease.

The data from these studies can also be used as an argument against the intrauterine infection hypothesis of Parkinson's disease since it seems very unlikely that an intrauterine infection would affect only one of two twins sharing the same environment. Although congenital malformations have been reported in one of two monozygotic twins,³ the incidence of a viral infection affecting only a single twin, we reason, must be very low.

We can look, for example, at congenital cytomegalovirus infection in twins. CMV is the commonest cause of congenital infection in man with an incidence ranging from 0.5-2% of all live births.⁶ Of these infected infants, 10% will suffer from mental retardation.⁷ Twins with CMV infection are des-

cribed to usually have concordant clinical or laboratory evidence of disease.⁸ There are no reports of monozygotic twins where only one of two CMV infected twins is symptomatic or where only one twin of the set is actually infected.⁸ The latter situation, although possible, is the least common and these cases reported are either dizygotic twins or situations suggestive of dizygotic twins (two placentas).⁸

In the case of herpes simplex virus, perinatal infection with HSV will also affect both twins in a clear majority of cases.⁹

Toxoplasmosis, a non-viral but also haematogenously spread intrauterine infection, similarly has a distinct difference in clinical patterns of infection between monozygotic and dizygotic twins.¹⁰ In monozygotic twins the clinical pattern of involvement tends to be similar in both twins. In dizygotic twins, discrepancies in clinical findings are more frequent and marked. However, only in a minority of dizygotic twins is one of the twins exclusively infected.

If an intrauterine influenza infection predisposed an individual to develop Parkinson's disease, then it would appear, based on the pattern of viral and nonviral intrauterine infections, that monozygotic twins (and perhaps even dizygotic twins) should have a high rate of concordance for Parkinson's disease. Since the concordance rate for Parkinson's disease is only 2-5% in monozygotic twins,³ the hypothesis of Mattock *et al.*¹ seems to be an error and there may be some other reason for the relationship they described between year of birth and crude mortality data for influenza.

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Book reviews

Neurobiology of Amino Acids, Peptides and Trophic Factors. Edited by James A Ferrendelli, Robert C Collins, Eugene M Johnson. (Pp 272; £44.95.) Dordrecht: Martinus Nijhoff, 1988.

Advances in neurobiology over the past decade have radically altered our concepts of how the nervous system works. Previously undiscovered neurotransmitters or neuromodulators, such as the excitatory amino acids and neuropeptides have been recognised. The plasticity of the nervous system also has been realised as has the potential for trophic factors to prevent

neuronal cell death and to induce regeneration. These are now key areas fundamental to the development of therapy for nervous system disorders in the future.

This book represents the proceedings of a meeting held in the Autumn of 1986. It was the third symposium in a series exploring communication between the CNS and other body systems so as to monitor frontiers of research into neuronal and hormonal regulatory interactions and their application to medicine. The content is a combination of contributions on the roles of excitatory amino acids, trophic factors and neuropeptides.

I found the mixture of topics made it difficult to define a central theme for the volume. Indeed, the chapters themselves in

the various sections vary from good overviews of a selected area to highly specific research contributions. Indeed, with notable exceptions such as the chapters by Olney, Meldrum, Johnson and Bloom, most appeared to miss the basic concept of the meeting. This is not a criticism of any individual contribution since most chapters were themselves excellent in their own way. It is a criticism of the manner in which the volume has been conceived. Most disturbing are the series of short communications at the end of the volume. Here the reader is presented with 13 contributions of two to five pages in length, none of which can possibly convey a clear insight of the topic to the reader. I also dislike the 31 pages given over to the preface, contents, list of participants and dedication.

Representing more than 10% of the total volume I would rather have a smaller and less expensive book.

In conclusion a volume without an obvious theme but which contains excellent individual contributions. It is certainly not one for which I would pay £45 and I suspect there are few that will be willing to spend precious funds on a work of this kind.

P JENNER

Concepts in Pediatric Neurosurgery. Vol 9. Edited by American Society for Pediatric Neurosurgery. (Pp 236; \$141.50.) Basel: Karger, 1989.

This volume represents the proceedings of the 11th Annual Meeting of the American Society for Paediatric Neurosurgery that was

held in February 1988. Once again, the published articles and contributors are to be congratulated on the speedy appearance of a book that is well presented and carries good illustrations.

As in previous editions, a variety of subjects are covered but there are areas of definite emphasis. The book opens with five papers on hydrocephalus and then proceeds to eight papers on paediatric neuro-oncology. The current interest in avoiding radiotherapy to the developing brain is given the emphasis that one would expect and there is a good description by Robin Humphreys of Toronto of the strange behavioural state (including mutism) that can complicate an otherwise apparently successful removal of a large tumour from the fourth ventricle.

There is only one paper on a cranio-facial subject, the treatment of "Posterior Plagiocephaly" by the use of specially prepared plastic helmets. This is a condition

that is unlikely to attract medical attention in this country and the authors of the article are careful not to include any "before and after" photographs by which their work can be judged.

Bruce Storrs and David McLone give a brief but tempting account of the use of selective posterior rhizotomy in the treatment of spasticity associated with myelomeningocele. Their seven cases all presented with evidence of progressive loss of neurological function and underwent first a standard untethering procedure of the spinal cord. When after a suitable follow-up period (often accompanied by neurological improvement), lower limb spasticity remained a significant problem, all seven underwent a selective posterior rhizotomy. All experienced a significant reduction in their spasticity.

R HAYWARD

Correction

Randomised double blind controlled trial of cyclosporin in multiple sclerosis. P Rudge, JC Koetsier, J Mertin, JO Mispelblom Beyer, HK Van Walbeek, R Clifford Jones, J Harrison, K Robinson, B Mellein, T Poole, JCJM Stokvis, P Timonen *J Neurol Neurosurg Psychiatry* 1989;52:559-65.

We regret that an error arose in the setting of table 1 of this paper. The error was not the authors' fault and we apologise to them and reproduce the correct version of the table below.

Table 1 Patient data on entry to trial (mean, standard deviation and range)

	Sex		Age (years)	Age at onset (years)	Duration of disease (years)	Relapses before trial	Months since last relapse	Kurtzke disability scale	Activities of daily living
	F	M							
<i>(a)</i>									
London	27	16	33.7 SD 5.4 (23-45)	25.1 SD 5.2 (15-35)	8.6 SD 4.6 (2-18)	7.4 SD 4.2 (2-18)	8.5 SD 8.3 (1-36)	4.8* (2.0-7.5)	8.4* (7-20)
Amsterdam	16	21	38.2 SD 7.2 (23-49)	29.7 SD 7.2 (19-47)	8.5 SD 5.4 (1-20)	3.3 SD 1.4 (0-7)	28.8 SD 33.6 (0-15)	3.4* (1-6)	12.0* (1-20)
London v Amsterdam	p < 0.001		p < 0.01	p < 0.01	NS	p < 0.001	p < 0.001	p < 0.001	
<i>(b)</i>									
London	CsA	14	33.1 SD 8.0 (26-44)	25.1 SD 4.7 (15-34)	8.0 SD 4.6 (2-18)	6.2 SD 2.9 (3-15)	10.1 SD 8.6 (2-36)	4.6* (2.5-7.5)	8.4* (7-20)
	P	13	34.2 SD 5.7 (23-45)	25.0 SD 5.6 (15-35)	9.2 SD 4.5 (2-18)	8.6 SD 5.0 (2-22)	6.9 SD 7.5 (1-36)	5.0* (2.0-7.0)	8.5* (7-15)
Amsterdam	CsA v P	NS	NS	NS	NS	NS	NS	NS	NS
	CsA	7	38.2 SD 6.9 (22-48)	28.8 SD 6.3 (20-40)	9.4 SD 5.3 (1-19)	3.3 SD 1.4 (0-7)	31.0 SD 29.9 (1-108)	3.8* (1-6)	14.1* (1-30)
	P	9	38.2 SD 8.4 (23-49)	30.5 SD 7.8 (19-47)	7.7 SD 5.4 (1-20)	3.4 SD 1.3 (1-6)	26.8 SD 36.6 (0-150)	3.0* (1-5)	10.0* (2-20)
	CsA v P	NS	NS	NS	NS	NS	NS	NS	NS

*Data not a normal distribution. CsA, cyclosporin; P, placebo.



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