Correspondence

Evaluation of the chelating action of methicillin in prolonged experimental metallic mercury poisoning

Sir,—Dr Twardowska-Sauchka (1986;43:611–4) advocates the trial of methicillin in the treatment of chronic mercury poisoning, arguing that this antibiotic may prove to be more effective and less toxic than other chelating agents, particularly penicillamine. Clinicians would be wise first to consider whether her results justify her case either for methicillin or for the use of chelating agents generally in chronic forms of mercury poisoning.

The total observed mercury loss brought about by methicillin (or D-penicillamine) in Twardowska-Sauchka's rabbits was less than twice that achieved by the controls, and the difference in response to the drugs pronounced only during the first three days. This is a fairly typical pattern, and I believe that no chelating agent has ever been shown to maintain for long a high rate of mercury loss in urine, doubtless because at tolerable doses none is able to detach much mercury from tissue ligands. The nature of the mercury compound absorbed, duration of exposure, and target organ(s) all have a bearing on the response to particular chelating agents, both on the pathogenicity and the excretion of mercury, these last being independent variables.¹ Browning commented 25 years ago on the conflicting testimony about chelation treatment for mercury poisoning,² and although current editions of general medical textbooks still refer to this treatment as if it worked, Lauwerys and Berlin, judging by their respective contributions to the ILO Encyclopaedia,³ seem to believe it does not; at least in chronic poisoning. Short term treatment of patients recently exposed seems reasonable, but even this does not necessarily prevent serious injury.⁴

As for the toxic properties of chelating drugs I believe that Twardowska-Sauchka overemphasises the risks of long term D-penicillamine treatment (regularly prescribed for many rheumatoid patients; and for life in Wilson's disease). N-acetyl penicillamine has been given for a year or so to patients with cystinuria⁵ but is not generally available. It remains to be seen whether methicillin is safer than either in long term use. The dose of methicillin (100 mg/kg/day) given by Twardowska-Sauchka exceeds the maximum presently given therapeutically and might be expected to give rise to some problems if continued for more than a short time.⁶ Indeed, might the observed modest leak of mercury into the urine be the

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result of an effect other than a putative chelating action?

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References

- 1 Swensson A, Ulfvarson U. Experiments with different antidotes in acute poisoning by different mercury compounds. *Internationale Archiv für Gewerbepathologie und Gewerbehygiene* 1967;24:12–50.
- 2 Browning E. *Toxicity of industrial metals*. London: Butterworths, 1961.
- 3 Lauwerys R, Berlin M. Mercury. In: Parmeggiani L, ed. *Encyclopaedia of occupational health and safety*. Geneva: International Labour Office, 1983:1332–8.
- 4 Lilis R, Miller A, Lerman Y. Acute mercury poisoning with severe chronic pulmonary manifestations. *Chest* 1985;88:306–9.
- 5 Crawhall JC, Watts RWE. Cystinuria. *Am J Med* 1968;45:736–40.
- 6 Kucers A, Bennett N McK. *The use of antibiotics*. 3rd ed. London: Heinemann, 1979.

Solvents and the brain: explanation of the discrepancy between the number of toxic encephalopathy reported (and compensated) in Denmark and other countries

Sir,—In a recent editorial (1986;43:73–4) on damage to the central nervous system in solvent workers you write as follows “Thus it is not at all clear why there is such a discrepancy between the number of cases reported (and compensated) in Denmark and other countries.”

The explanation for this discrepancy is the fact that the diagnosis of cerebral damage in solvent workers in Denmark has no scientific basis but is arbitrary, based on a personal judgment by the neuropsychologist and physician who make the diagnosis. The results that solvent workers obtain in neuropsychological tests have not been and are not compared with the results of relevant controls. This unscientific procedure for diagnosing has caused hundreds of false positive diagnoses of chronic cerebral damage.

The evidence that these hundreds of false positive diagnoses really are false positives has been published in a WHO report.¹ In an article in the report, written by the neuropsychological section of the department of neurology at the University Hospital of Copenhagen (Rigshospitalet), it is stated that, after having established the relevant control data for the neuropsychological tests, the department has admitted that most of the solvent workers who had been diagnosed as having toxic encephalopathy after exposure to solvents before the control data were

available had in fact performed in the normal range in the neuropsychological tests. Now that control data are to hand, the neuropsychologists at the University Hospital of Copenhagen rarely diagnose intellectual impairment in solvent exposed patients without known or suspected alternative aetiologies.

Unfortunately, the neuropsychological department of the University Hospital of Copenhagen is the only department in Denmark which uses relevant control data for the neuropsychological tests. Therefore it is to be expected that the false positive diagnosis of cerebral damage in solvent workers will still prevail in

Demark in the future.

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Reference

- 1 World Health Organisation. *Environmental health 3. Neuro-behavioural methods in occupational and environmental health*. Copenhagen: WHO, 1985:91-6.

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