

SIR,—Your leading article on this topic (20 December, p. 704) was very interesting, but I feel that your figure of 24 cases of such reactions represents only a small proportion of the whole.

I have seen two patients during the past year, both middle-aged females with urinary-tract infections, who presented with acute dyspnoea and pyrexia shortly after starting a course of nitrofurantoin. The first had successfully completed a course of 100 mg. four times daily for seven days nine months previously, but to the second the drug was entirely new.

Both cases were reported to the Committee on Safety of Drugs, which source I was surprised to find omitted from your references.—I am, etc.,

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Septic Shock

SIR,—Your leading article on septic shock (3 January, p. 3) suggests that an antibiotic active against most Gram-negative bacilli should be used to initiate treatment before the causative organism is known. We disagree with this, and with your choice of kanamycin. The organisms isolated from patients with septic shock are usually, but not always, Gram-negative. We have seen streptococci and clostridia, both of which are resistant to kanamycin, as well as staphylococci, which are usually sensitive. Furthermore, *Pseudomonas aeruginosa* and *Bacteroides* are always resistant to kanamycin and some strains of *Klebsiella* may be.

We have used a mixture of gentamycin and ampicillin or cephaloridine with considerable success in treating these patients. This combination is effective against most kanamycin resistant bacteria, of which possibly the most important is *Ps. aeruginosa*. In the past two months we have seen two patients with *pseudomonas septicaemia* and shock.

The total dose of gentamycin given is usually small because, as with kanamycin, the antibiotics can be changed to give more specific treatment when the infecting organism is recovered. We recommend an initial dose of 80-120 mg. of gentamycin and regulate subsequent dosage according to the renal function. If this is impaired estimation of the serum gentamycin level will be necessary if treatment with this antibiotic is to be continued. Gentamycin can be given either by intramuscular injection or intravenous infusion over a period of 5-10 minutes. Ampicillin is given either by continuous or by intermittent intravenous infusion to a total of 8-12 g. per day. If the patient is known to be hypersensitive to penicillin, cephaloridine is substituted in a total dose of 2-4 g. per day, either by intramuscular injection or by intermittent intravenous infusion. Apart from an occasional hypersensitivity reaction, presumably to ampicillin, no toxic effects have occurred with these antibiotics. In particular we have seen no ototoxicity.

We feel that the antibiotic selected for the

immediate treatment of patients with septic shock should be bactericidal and provide the broadest possible cover. We therefore recommend gentamycin in combination with ampicillin or cephaloridine.—We are, etc.,

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SIR,—I feel that your leading article on septic shock (3 January, p. 3) places too little emphasis on the part of disseminated intravascular coagulation, to which you pay only perfunctory reference. Corrigan and others¹ in a careful study found thrombocytopenia in 60% of 36 patients with septicæmia and associated multiple coagulation defects, particularly in those with hypotension.

Though it is true that Gram-negative septicaemia in man may not present the full histological features of the Shwartzman reaction as seen in the rabbit,² yet functional evidence of defibrination is ever increasing³ and there are many isolated reports of fibrin thrombi at necropsy. Sandritter found hyaline thrombi in 70% cases septic shock and 19% cases haemorrhagic shock,⁴ and although it may not be clear at present whether disseminated intravascular coagulation is an integral part of all types of shock, as Hardaway postulates,⁵ yet of all the types of shock septic shock is the safest and surest in which to employ heparin therapy.

Furthermore, the work of Whittaker *et al.*⁶ suggests that associated catecholamine release in septic shock is another factor causing disseminated intravascular coagulation and that this is preventable by α -adrenergic blockade. With such a high mortality why indeed are you so cool about this additional aspect of rational therapy, yet extolling the virtue of isoprenaline, when in Gram-negative shock with vasoconstriction "the periphery holds the blood fast . . . instead of leading it into the veins and the anaemic heart works fruitlessly"?⁷—I am, etc.,

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- 3 Hjort, P. F., and Rapaport, S. L., *Annual Review of Medicine*, 1965, 16, 135.
- 4 Sandritter, W., *Deutsches Medizinisches Wochenschrift*, 1967, 13, 408.
- 5 Hardaway, R. M., *Syndromes of Disseminated Intravascular Coagulation*, 1966, Thomas, Springfield, Illinois.
- 6 Whittaker, A. N., McKay, D. G., and Csavossy, I., *American Journal of Pathology*, 1969, 56, 153.
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SIR,—Your leading article (3 January, p. 3) mentions that in the treatment of septic shock correction may be required for acidosis. May I stress, from personal experi-

ence of the resuscitation of a deeply unconscious child with septic shock, that estimation of base deficit and its correction by the infusion of sodium bicarbonate in suitable amounts may be life saving.—I am, etc.,

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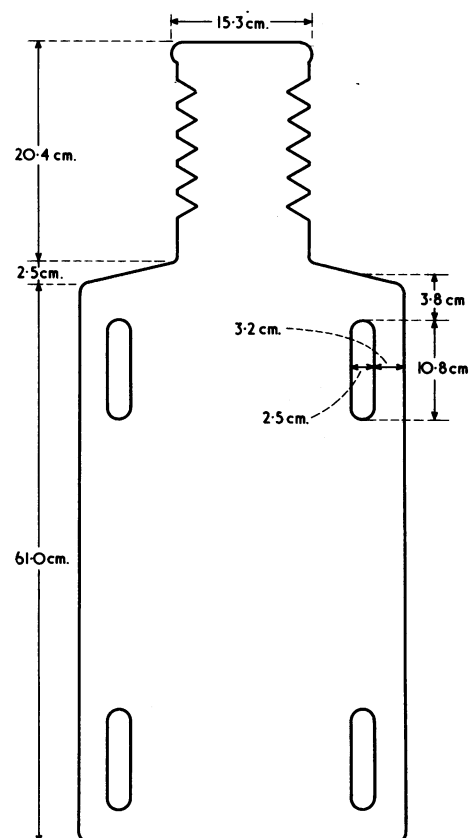
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Spinal Board for Road Casualties

SIR,—Since the publication of the series "Road Accidents and the Family Doctor," and the subsequent correspondence related to spinal injuries in particular, there have been many inquiries concerning the use of the short spinal board during extrication of the injured from wreckage and the journey to hospital.

This spinal board was originally described by Dr. J. D. Farrington¹ and ours is an adaptation of it (Fig. 1) drawn to scale. The



board is made from good quality $\frac{1}{2}$ -in. (1.25 cm.) plywood, with all the edges rounded and the board well waxed to facilitate sliding into position. The head-piece has "saw edges" to prevent head bandages slipping. Two 8-foot Britax safety straps and buckles are used to position the patient on the board. Overall width of the board is 35.6 cm.

Before the board is put into use, the patient must first be fitted with a cervical