

## CLINICAL NOTES

### MEPHENTERMINE SULPHATE AS A HYPERTENSIVE AGENT IN GENERAL PRACTICE

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In general practice one is occasionally faced with the problem of acute hypotension which must be reversed before irreparable damage is done to vital organs. The most common cause of severe sudden hypotension, unassociated with haemorrhage, is coronary thrombosis. A drug which can speedily restore the normal blood pressure is, therefore, invaluable and comes within the lifesaving class. Such a drug is mephentermine sulphate (Mephine), which can be given safely by both intravenous and intramuscular injection. This drug raises the blood pressure in two ways, firstly by increasing the force of the heart's action, and secondly by causing peripheral vasoconstriction which in turn benefits the coronary circulation and that of other essential structures. There is evidence also that it reduces the excitability of the heart and thus the chance of cardiac arrhythmias developing. Although it is related pharmacologically to amphetamine it has very little cerebral stimulant effect. The usual dose is 15 or 30mg. either intravenously or intramuscularly and repeated as frequently as the condition of the blood pressure warrants.

The use of mephentermine in hospital has been well described (Garai and Shirley Smith, 1958) but the following two patients seen recently in general practice and admitted to the general practitioner unit of the local hospital illustrate well the dramatic usefulness of the drug outside hospital.

**Case 1.** A 69-year-old male bus company cleaner was found at home in a deep coma at midday after taking 75 mg. of dipipanone hydrochloride (an analogue of morphine) and three grains of amylobarbitone sodium the previous evening in an attempt to relieve his sciatic pain. On examination his respirations were slow and shallow with periods of apnoea, he was pale and cold, his limbs were toneless, his peripheral reflexes absent and his pupils were pinpoint. The systolic blood pressure was only 60 mm.Hg. An intravenous injection of nalorphine hydrobromide 10 mg. improved the rate and depth of respirations to almost normal within a minute. This was followed by 15 mg. of mephentermine given intravenously which immediately raised the blood pressure to 120/60 mm.Hg. Within ten minutes it fell to 100/60 mm.Hg. and further intramuscular injections of 5 mg. nalorphine and 15 mg. of mephentermine were given before transfer to hospital. During the next 15 hours in hospital the systolic blood pressure fell four times below 100 mm.Hg. but always showed an immediate response to 30 mg. mephentermine given intramuscularly. The patient made an excellent recovery and his blood pressure remained thereafter about 120/80 mm.Hg. Special investigations, including an electrocardiogram, revealed

no significant abnormality and six months afterwards the patient is again enjoying his employment.

**Case 2.** A 67-year-old male factory worker was seen at home profoundly shocked after an acute coronary infarct, later confirmed by an electrocardiogram. He was cyanosed and had ice-cold extremities, his pulse was irregular, about 30/minute and the blood pressure unrecordable. Mephentermine 15 mg. was injected intramuscularly and provoked an immediate rise of blood pressure to 60 mm.Hg. This was followed by injections of morphia 15 mg. and heparin 10,000 units. Two further injections of mephentermine 15 mg. were given at 5 minute intervals and his blood pressure rose to 80 mm.Hg. systolic and then to 120/80 mm.Hg. Shortly afterwards oxygen therapy was started and his general condition improved and he was considered fit for transfer to hospital. During the first 24 hours after admission to hospital he had six episodes of hypotension (varying from 65 to 105 mm.Hg. systolic) and was given mephentermine intramuscularly on each occasion with excellent effect. Thereafter his blood pressure remained about 130/80 mm.Hg. until his discharge. The pulse returned to normal sinus rhythm within the first 12 hours in hospital. He made an excellent recovery and at no time developed signs of congestive cardiac failure. Two months after the incident he is contemplating a return to work.

For the observer there was no doubt that on both these occasions mephentermine brought about a dramatic improvement in the patients' condition whilst still at home and helped to make them fit for transport to hospital.

These two cases are reported to draw attention to the great value of mephentermine in treating acute hypotension outside hospital. It should be emphasized, however, that in hypotension produced by haemorrhage, the use of mephentermine is naturally completely secondary to the restoration of the normal circulatory volume. Because of its efficient action and safety it is felt that mephentermine should always be at hand to treat sudden hypotension. Cases of coronary thrombosis are distressingly common and anything that can be done to reduce the mortality is welcome. Therefore, I would make a plea for all general practitioners to become acquainted with mephentermine and to include it amongst the emergency drugs in the doctor's bag.

### Summary

Mephentermine Sulphate (Mephine) is a valuable hypertensive drug for raising the blood pressure, particularly after coronary thrombosis.

Two cases from general practice are reported which demonstrate its prompt action.

The quick action, safety, and ease of administration should commend its use to general practitioners.

### REFERENCE

Garai, O. and Shirley Smith, K. (1958), *Brit. med. J.*, **1**, 247.