ATARACTICS AND THE RECOVERY ROOM, WITH REFERENCE TO TRIFLUPROMAZINE, I

J. W. R. McINTYRE, F.F.A.R.C.S., D.A.

DURING THE LAST FEW YEARS numerous drugs with tranquillizing properties have been synthesized and these are referred to, collectively, as ataractics. Composing one group of these are the phenothiazine derivatives and the use of one or other of these in the anaesthetic technique has sometimes been advocated. The specific value of the tranquillization produced by these drugs has not yet been established and the occurrence of complications such as tachycardia, hypotension, jaundice, and extra-pyramidal reactions has led at least one authority to question the use in anaesthesia of any drug currently available in this class (1). These drugs have in common sedative and anti-emetic effects. Under certain circumstances it is especially desirable to avoid emergence vomiting and restlessness in the immediate post-anaesthetic period. The potential damage due to these complications may be considered under two headings. First, the patient's life may be endangered by them. Splinting of the jaw or immobilization in cast or respirator, for example, makes vomiting hazardous, and coronary arterial insufficiency is increased by mental stress (2) and hypotension. The former can be produced by the recovery of consciousness in unusual surroundings and the latter by nausea and retching (3); consequently, patients suffering from this disease who have also been subjected to surgical trauma should be protected from these complications. Secondly, the operative site may be damaged. This damage is particularly apt to occur after plastic and ophthalmic surgery or if the patient is mentally disturbed.

Trifluprομazine (Vesprin: Squibb) is a phenothiazine derivative for which potent tranquillizing and anti-emetic properties have been demonstrated, and its use as prophylactic against these complications is now described.

METHOD

Trifluprομazine was administered intravenously in increments of 1 to 4 mg. depending on the weight and physical state of the patient at intervals of 2 or 3 min. during the half-hour prior to the termination of general anaesthesia. The total dosage used depended on the effect of the premedication, anaesthetic requirements, and response to the initial dose of the drug. It varied between 0.1 and 1.0 mg./10 lb. body weight. The incidence of emergence vomiting and restlessness was observed critically in the recovery room.

RESULTS

Details of patients, dosage used, emergence vomiting and/or restlessness, and alterations in systolic blood pressure are recorded in Table I. The diastolic pressure showed a trend similar to the systolic while the pulse rate was usually un-

TABLE I

	Dosage (mg./10 lb. body weight)									
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Total number of cases	3	2	13	12	10	20	13	10	4	4
Number of cases suffering from emergence vomit or restlessness	0	2	2	1	1	3	1	1	1	1
Number of cases with hypertension or known coronary arterial disease	3	1	6	5	4	5	3	1	0	0
Mean fall in the systolic arterial pressure, (mm./Hg)	37.0	2.5	11.0	10.0	7.0	8.0	9.0	6.0	7.5	5.0
Distribution of fall in systolic blood pressure	30–40	0–5	0–30	0–20	0–20	0–30	0–30	0–20	0–10	0–10

changed or slightly increased. The muscle tone of the patients was good and no extra nursing care was required. In some cases the recovery of consciousness seemed delayed, but this was not necessarily related to dosage or blood pressure changes.

A comparative series of 35 patients undergoing major gynaecological surgery and receiving trifluprómazine, and 35 not receiving it showed a reduction in emergence vomiting and/or restlessness of 30 per cent.

Discussion

The failure of the drug to prevent emergence vomiting and restlessness in all cases could be attributed to incorrect dosage and time of injection. Intramuscular instead of intravenous administration would reduce this difficulty. However, the fact that failures occurred with high dosage suitably timed and in the absence of any other obvious reasons for these complications suggests that this is not the only reason for lack of success. Significant falls in blood pressure sometimes occurred with the lowest doses indicating that intramuscular administration in amounts certain to be effective would probably produce an unexpected hypotension in a minority of cases subsequently in the recovery room. This experience was reported by Davies (4). Consequently, slow intravenous injection seems the most desirable method of administration.

Although in a minority of patients suffering from coronary arterial disease, with or without hypertension, substantial falls in blood pressure occurred, the majority of these patients tolerated the drug well. There was no increase in morbidity and the relative advantages and disadvantages of its administration to these patients remain to be elucidated.

Conclusion

Trifluprómazine used as described is effective in the prophylaxis of emergence vomiting and restlessness. In a minority of patients a significant fall in blood pressure is caused and this possibility should be borne in mind when the drug is used.

Summary

Prophylactic treatment of emergence vomiting and restlessness is considered to be indicated when these complications will endanger the patient's life or the operative site. This is particularly the case in plastic and ophthalmic surgery and in patients suffering from coronary arterial insufficiency. The cautious intravenous administration of trifluprómazine in dosage 0.1–1.0 mg./10 lb. body weight prior to the termination of anaesthesia reduced the incidence of these complications. Significant depression of the blood pressure was unusual and when it did occur was unrelated to the dosage used.

Acknowledgment

I am grateful to Dr. E. A. Gain, M.D., Director of the Department of Anaesthesia, University Hospital, Edmonton for his help and encouragement.

REFERENCES

1. Cullen, Stuart C. What Price Tranquillization. Anesthesiology *20*: 697 (1959).
2. Dreyfuss, F. Role of Emotional Stress Preceding Coronary Occlusion. Am. J. Cardiol. 3: 590 (1959).
Sharpey-Schafer, E. P. Mechanism of Acute Hypotension from Fear or Nausea Brit. Med. J. 2: 878 (1958).
4. Davies, J. I., Hansen, J. M., & Angell, S. M. Trifluprómazine (Vesprin) in Anaesthesia: A Clinical Evaluation. Canad. Anaesth. Soc. J. 6: 375 (1959).