EXPERIENCE WITH 3,057 ADMINISTRATIONS OF CURARE TO 232 PSYCHOTIC PATIENTS TREATED WITH METRAZOL

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A total of 479 mentally-ill patients has received metrazol treatment to date of writing this report at the Ontario Hospital, Hamilton, Ont., Canada. Of these, 232 cases received curare with every one of their metrazol treatments. Curare has been administered on 3,057 occasions. In these experiences with curare, the drug has proved itself to be safe and very useful. The reactions to curare have been consistent, with a few interesting exceptions.

In the last 354 cases treated, radiographs were taken in every case, before and after treatment. All radiographs were read and reported on by Norman L. Easton, M. B.,* and Joseph Sommers, M. D.t Prior to the use of curare, the incidence of compression fractures of the vertebrae was 14.8 per cent of the patients treated. In some, more than one vertebra was involved. With curare, the incidence has been reduced to 3.9 per cent. In the nine cases of compression occurring when curare was used, seven showed changes in one vertebra only; in the eighth case, two vertebrae were involved; and in the ninth case, three vertebrae were involved, but this patient was a female diabetic, 66 years of age. Furthermore, the degree of compression when curare was used was in every case very slight.

CURARE DOSAGE AND TECHNIQUE

The curare used is that produced by Squibb, under the trade name of Intocostrin; 20 mgs. of active curare are present in 1 cc. of Intocostrin. One millogram of the active curare to two pounds body weight has been found adequate and safe, although 10 mgs. less than this should be given on the first occasion, especially to obese patients and to patients whose habits have been very sedentary. With this dose, some persons have paralysis of the neck muscles and are unable to raise their heads. Paralysis of the

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muscles of the neck first appeared to be the ideal sign that the optimum dose of curare had been reached. It, however, is not wise nor necessary to raise the dose to try to obtain this neck muscle paralysis. Early in the use of curare, the writer gradually increased the dose to 120 mgs. in a 150-pound patient without appreciable paralysis of the neck muscles. Marked paralysis of the muscles of respiration, however, did occur. This was successfully overcome by administering prostigmin, 2 cc., intravenously. Prostigmin is a spectacular and very reliable drug for this emergency. Artificial respiration has also been used in conjunction with prostigmin but does not compare in usefulness. For some time, attempts to paralyze the muscles of the neck by gradually raising the dose, caused varying degrees of respiratory embarrassment, all of which readily responded to the administration of prostigmin. Eventually it was concluded that 1 mg. of active curare for two pounds of body weight, was a safe and sufficient dose. The dose is administered slowly, within a period of one minute. Attempts to shorten this time have accentuated the undesirable reactions of the drug and have, therefore, been abandoned.

Curare, with hyperextension of the back by some means, is more effective than curare alone. At the Ontario Hospital, hyperextension with pillows and an ordinary hospital bed, have been found to be very satisfactory and convenient. No board support is used. The number of pillows used varies from three to five, depending on the size of the patient. For the past year, careful attention has been paid to the number of pillows used and their placement. Apparently as a result of this, only one case of compression of the vertebrae has occurred in the last 93 cases. This exception was the 66-year-old female with diabetes previously referred to. The compressions in this case would seem to bear out the observations that compressions are more prone to occur in elderly persons. The fact that three vertebrae were involved suggests that some degree of osteoporosis, aggravated by the diabetes, was present.

UNUSUAL REACTIONS

A few cases have reacted differently to curare than the general run. These reactions are of interest and for clarification are described separately.