AN EVALUATION OF CHLORPROMAZINE AND PROCHLORPERAZINE AS PREMEDICATION FOR PEDIATRIC ELECTROENCEPHALOGRAPHY *

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Anticipatory tension and anxiety can pose serious problems in children whose clinical progress must be followed by electroencephalography. The use of barbiturates and narcotics to control anxiety often obscures recordings of cortical and subcortical activity[1]. These drugs produce a central depression that is reflected in the tracing as a sleep pattern, which may interfere with interpretations of tracings of pathologic activity.

Chlorpromazine has been shown to be well tolerated, and the tracings from patients with this drug are clear and comparatively free from muscular artifacts and tension discharges. The important point is that there is no alteration of the basic character of the electroencephalogram as long as the patient is awake or in a state of light sleep.[2,3] The state produced by chlorpromazine resembles a normal sleep from which the patient can be aroused easily,[4] the changes produced by chlorpromazine apparently depending on the patient's state of vigilance.[3] Patients—unlike those treated with barbiturate sedatives—are aroused easily and are neither ataxic nor confused. They are relaxed, are motionless with eyes closed and are clinically asleep, although typical sleep changes do not appear in the tracing. Electroencephalographic changes are those of relaxation or drowsiness and, although the patient appears to be asleep, there is no spindling or slow-wave activity associated with deeper sleep[1,4].

In this study chlorpromazine*** and a new tranquilizing agent, prochlorperazine****, were used to allay tension and anxiety in children undergoing electroencephalography. Forty-six children, ranging in age from three months to eleven years, were selected for tranquilizing therapy. Diagnoses included grand mal epilepsy, hydrocephalus, tetanus neonatorum, encephalitis, mental retardation, brain abscess, subdural hematoma, cerebral palsy, and cretinism.

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*** Supplied as 'Thorazine' by Smith, Kline & French Laboratories, Philadelphia

**** Supplied as 'Compazine' by Smith Kline & French Laboratories, Philadelphia

Chlorpromazine was given to 33 of these children in doses ranging from 5 to 25 mg., calculated on the basis of 10 mg/kg of body weight. In two instances the 25 mg. suppository was used.

Thirteen children received prochlorperazine in doses ranging from 5 to 20 mg., calculated on the basis of 5 mg/kg of body weight. Eight of these patients received only intramuscular medication. Two received oral medication (20 mg.) in addition to intramuscular therapy, and three received only prochlorperazine suppositories (5 and 10 mg.).

In all cases the tranquilizers were the only medication used; no sedative or hypnotic was given. The tranquilizers were usually administered one or two hours before electroencephalography.

Patients treated with chlorpromazine occasionally lapsed into a state of clinical sleep immediately after injection. Deeper sleep was usually evident, however, within 30 minutes after medication was given. Occasional patients became drowsy but did not sleep. Patients typically remained quiet throughout the procedure but could be aroused easily. In the tracings there was no evidence of the deep sleep pattern that may obscure recording of pathologic wave patterns.

Patients given prochlorperazine generally did not sleep so deeply, were restless and were easily aroused by slight noises. The reaction to the drug was slower and the effects were not seen in some instances until one and one-half or two hours had passed.

In this study of the tranquilizers as sole premedication for electroencephalography, chlorpromazine appeared to be somewhat superior to prochlorperazine. Relief of tension generally was evident sooner, and patients usually remained relaxed during the procedure when chlorpromazine was used. When the first dose of chlorpromazine was ineffective, administration of a second dose usually produced results within a few minutes. The reaction to prochloperazine, on the other hand, was neither so complete nor so rapid or prolonged. It is possible that higher doses of prochlorperazine would be more effective; this limited series of 13 patients did not provide the opportunity to test this hypothesis adequately.

It seems significant that the tranquilizing agents, chlorpromazine and prochlorperazine, provided sufficient relief of anxiety and tension in these pediatric patients to obviate the concomitant use of sedatives or hypnotics.

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