

ALTHESIN INFUSION IN THE TREATMENT OF CONVULSIONS — A CASE REPORT

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SYNOPSIS

A case of convulsions following a neurosurgical operation, controlled by an Althesin infusion, is presented.

INTRODUCTION

Althesin (alphaxolone-alphadolone acetate) has been widely used for more than ten years as an anaesthetic induction agent. It has also been used in the technique of "Total Intravenous Anaesthesia" (1, 2), often in conjunction with an Oxygen-Nitrous Oxide mixture. Lately, it has gained some popularity as an adjuvant drug during anaesthesia for neurosurgery, because it has been shown to reduce cerebral metabolism, cerebral blood flow and intracranial pressure (3, 4).

CASE REPORT

A 59 year old male Chinese, weighing 55 Kg, was admitted with a diagnosis of a very large Pituitary Tumour with gross signs of hypopituitarism. He was started on Cortisone, L-Thyroxine and Dilantin, and scheduled for surgery sixteen days later.

During surgery the patient was on a continuous Althesin infusion, which was discontinued towards the end of surgery after the dura was closed. The patient was ventilated post-operatively.

Half an hour later, patient developed generalised convulsions which were abolished with iv Diazepam 5 mg. CAT Scan done at this stage was inconclusive. One hour after the first episode of convulsions, patient developed a second episode of convulsions. This time it was decided to start him on an Althesin infusion (0.1 ml/Kg B Wt/hr) which controlled the convulsions immediately.

Eleven hours after his first operation, the patient underwent a second operation for the evacuation of a Right Frontal Intracerebral haematoma and Extradural haematoma. The Althesin infusion was discontinued. One hour later, the patient developed a third episode of convulsions. The Althesin infusion was restarted and the convulsions stopped. Subsequently, the patient developed hyperthermia, hypothermia and hypotension from probable hypothalamic infarction. He died on the third post-operative day.

DISCUSSION

A convulsive state must be terminated as soon as possible. Evidence shows that permanent neuronal damage occurs during the first two or three convulsions, even in the presence of adequate oxygenation and energy supply. Also there is an increased morbidity and mortality proportional to the duration of the convulsive status (5). Drugs commonly used to control convulsive states are the Benzodiazepines, the Barbiturates and Phenytoin. Any underlying treatable cause for the convulsions (eg metabolic derangements, cerebral anoxia, space occupying lesions (6) must be excluded or corrected before drug therapy alone is relied on.

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Althesin has been known to produce convulsions in patients with an epileptic focus as well as in normal patients soon after its administration (7, 8, 9). This is in fact a rare occurrence, the incidence being about 1:20,000 (10). On the other hand, Althesin has been used successfully in controlling status epilepticus (11, 12) and convulsions due to hepatic encephalopathy. The possible advantages (13) of using Althesin in the control of post-neurosurgical convulsions are:

1. It is known to decrease cerebral oxygen consumption, cerebral blood flow and intracranial pressure.
2. It sedates the patient adequately, enabling him to be mechanically ventilated.
3. It has a short half-life of 30 mins (14) and is minimally cumulative. Therefore the patient can be neurologically assessed soon after the drug is withdrawn.
4. It has little effect on cardiovascular haemodynamics (15) at the doses used to control convulsions.

In conclusion, Althesin has been shown to control post-neurosurgical convulsive states, adding to the armamentarium of anticonvulsive drugs. Since the reported cases of Althesin-induced convulsions are associated with bolus doses, it is perhaps prudent to use Althesin as an intravenous infusion only.

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