ORPHENADRINE POISONING
A Case Report

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SUMMARY
A child accidentally ingested a massive overdose of orphenadrine and was treated successfully by paralysis and IPPV. Haemodialysis was also used but its value was uncertain. It is suggested that in addition to the standard information provided with each new drug, it should be stated whether or not haemodialysis is likely to facilitate its excretion.

The principles which govern the treatment of acute drug overdosage are resuscitation, elimination and the use of specific antagonists if available. Unfortunately, information concerning the absorption, distribution and elimination of new drugs is not always readily available and recourse has to be made to empiricism. The case report below is an example of successful empirical treatment but demonstrates some of its inherent dangers.

CASE REPORT
At 10.30 a.m. on September 11, 1967, a 2-year-old male child weighing 31 lb. (14 kg) was brought to the Casualty Department deeply comatose, in status epilepticus, cyanosed and with widely dilated pupils. The child's mother said that at 9 a.m. she had found him lying on the floor, blue, twitching and with an empty bottle beside him which had contained sixty 50-mg orphenadrine (Disipal, Brocades) tablets one day before. She slapped the child to try to rouse him whereupon he started to have a fit and he thereafter convulsed continuously. Shortly after admission the child regurgitated and inhaled some stomach contents.

On admission to the ward a nylon reinforced latex endotracheal tube was passed and artificial ventilation with oxygen was given. Simultaneously a glucose-saline infusion was erected and an oesophageal tube passed and gastric lavage started. When allowed to do so he breathed in an irregular snatching and shallow fashion and he was cyanosed. His pulse was irregular, barely palpable at approximately 180 beats/min and his systolic blood pressure was 50 mm Hg. He had bilateral coarse crepitations and gastric contents were aspirated from his lungs by tracheobronchial toilet. A small amount of white powder was removed from his stomach by gastric lavage. When Epanutin (phenytoin) and paraldehyde failed to control his convulsions, a regime of total paralysis was decided upon and he was placed in an oxygen tent and the atmospheric humidity was raised to 100 per cent. Dexamethasone 2 mg i.v. was given with the object of reducing laryngeal oedema but by 11.30 a.m. marked dyspnoea, with stridor, inspiratory rib recession and restlessness, necessitated the patient being reintubated. At this time laryngoscopy indicated that the supraglottic oedema was present. At 12.15 p.m. a tracheostomy was performed (Mr. P. W. R. M. Alberti) and a 5-mm Portex plastic tube (shortened) was inserted and he was returned to the ward in the tent with 100 per cent humidity.

Over the next two days his general condition improved markedly and on September 15, 1967, a laryngoscopy was performed under general anaesthesia which indicated that the supraglottic oedema was resolving. The Portex tracheostomy tube was removed and a silver Fuller's tube was inserted in its place. When the patient recovered from the anaesthesia the inner tube was removed. All signs of airway obstruction had disappeared by September 20 and two days later the tracheostomy tube was removed. The stoma healed in four days and the patient was discharged home on September 29, 1967, clinically fit and alert. An e.e.g. examination was carried out before his discharge which suggested he may have focal brain damage, but when this was repeated fourteen days later, no abnormality was detected.

DISCUSSION
Orphenadrine hydrochloride is used in the treatment of Parkinsonism, muscle rigidity and in some
psychiatric disorders. It has a stimulant effect on the cerebral motor areas similar to the central action of atropine and also a weak peripheral parasympatholytic action (Bijlsma et al., 1956; Extra Pharmacopoeia, 1967). The drug has a wide safety margin but death, when it occurs, is due to medullary failure subsequent on excitation. It is rapidly absorbed from the stomach, 50 per cent of an oral dose being absorbed within 30 minutes and normally about 50 per cent of the total ingested dose is excreted in the urine (Hespe, de Roos and Nauta, 1965). This suggested that haemodialysis would reduce the orphenadrine level. However, no orphenadrine was detected in samples of the dialysis fluid sent to the manufacturers for analysis, which suggests that dialysis did not significantly influence the outcome. From analysis of blood samples the manufacturers were of the opinion that the dose ingested by the patient was in excess of 100 mg/kg, which indicated that he had eaten at least twenty-eight tablets. The LD50 for mice ranges from 25 to 200 mg/kg, depending on the route of administration (Cooper, 1962).

The complication of laryngeal oedema which resulted after the child had been intubated for 48 hours was unfortunate and possibly may have been prevented if a plastic endotracheal tube had been used rather than one made of latex. However, the fact that the oedema took seven days to resolve suggests that infection played some part in its development.

During the period that the child was curarized and the lungs ventilated his acid-base status and plasma electrolytes were regularly checked and any alteration corrected. He was nursed on an improvised weighing bed so that changes in his blood volume could be recognized and treated.

Tracheobronchial lavage was carried out at hourly intervals while the endotracheal and tracheostomy tubes were in place, an aseptic technique being strictly observed during this manoeuvre. A sputum specimen obtained on admission grew coliform organisms, probably as a result of regurgitation and inhalation of vomit. This was controlled with sulphanilamide and after the third day sputum specimens were sterile.

REFERENCES


INTOXICATION PAR ORPHENADRINE

SOMMAIRE

Un enfant avala accidentellement une surdose massive d'orphenadrine et a ete traite avec succes au moyen de paralyse et VPPI. L'hemodialyse a egalement ete appliquee mais son utilite etait incertaine. Les auteurs suggèrent qu'additionnellement a l'information habituelle, fournir avec chaque nouveau medicament, on indiquerait egalement si l'hemodialyse facilite ou pas son excrétion.

ORPHENADRIN VERGIFTUNG: EINE FALLBESCHREIBUNG

ZUSAMMENFASSUNG

Ein Kind verschluckte zufällig Orphenadrin in einer massiven Überdosis. Es wurde erfolgreich behandelt mit Tiefennarkose und Intubation. Die Hämodialyse wurde ebenfalls eingesetzt, war aber von unbestimmtem Wert. Es wird vorgeschlagen, daß außer der allgemeinen Information, die bei jeder neuen Substanz mitgeliefert wird, noch gemeldet werden sollte, ob eine Hämodialyse wahrscheinlich ihrer Ausscheidung fördert oder nicht.

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