

Short reports

Comparison of IV salbutamol with IV aminophylline in the treatment of severe, acute asthma in childhood

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SUMMARY A double-blind test to compare IV aminophylline with salbutamol in the treatment of acute, uncontrolled asthma showed that both drugs were equally effective during the first 24 hours. Salbutamol caused a relative tachycardia. Hydrocortisone was given after 2 hours, but did not appear to affect the rate of recovery.

A double-blind test was undertaken to compare aminophylline with salbutamol given intravenously to children admitted to hospital with acute, uncontrolled asthma. 18 children (12 boys and 6 girls) were studied, age range 1½ to 7 years. All were considered to be sufficiently ill to require intensive hospital treatment on clinical grounds. Blood-gases on admission were attempted in all children and obtained in 13. Of these, 12 showed hypoxaemia, 5 showed acidaemia, and one showed hypercapnoea. Using random number tables the children were allocated to receive double-blind either salbutamol 4 µg/kg immediately then 0.6 µg/kg per hour continuously for 24 hours or aminophylline 4 mg/kg immediately then 0.6 mg/kg per hour continuously for 24 hours. In 2 children the initial dose of bronchodilator was omitted because both of them had received bronchodilator treatment during the 4 hours before admission. After 2 hours all children received hydrocortisone 4 mg/kg immediately then 2 mg/kg per hour continuously for 22 hours. All patients were offered oxygen via face masks.

The study took place during the first 24 hours of

admission. The children were assessed according to their clinical signs, pulse rates, and respiratory rates at 1, 2, 4, 6, 12, 18, and 24 hours. Clinical signs were

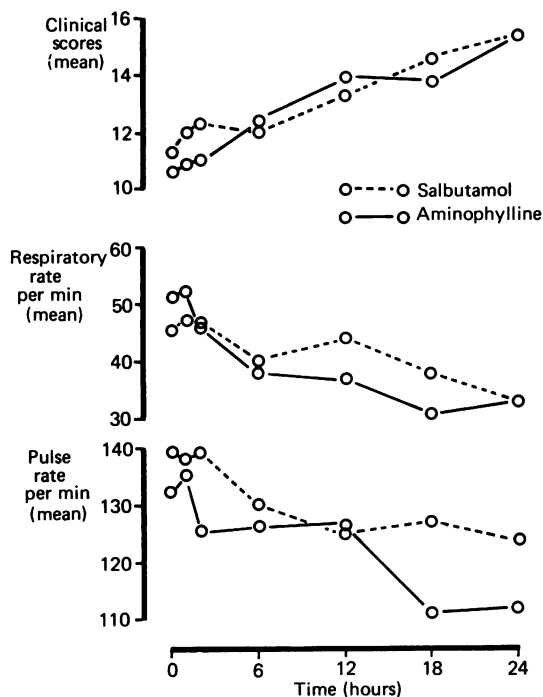


Figure Mean values of pulse rates, respiratory rates, and clinical scores during first 24 hours.

Table Scoring system for signs

	Score			
	4	3	2	1
Recession	Nil	Intercostal	Intercostal + suprasternal	Intercostal + suprasternal + lower costal
Tracheal tug	—	Nil	Present	Pronounced
Air entry	Normal	Reduced	Barely audible	Absent
Rales	—	Nil	Occasional	Widespread
Rhonchi	Nil	Scattered	Widespread, numerous	Concerted (= wheeze)

scored according to the method shown in the Table, a modification of the method used by Pierson *et al.* (1974).

Results

Pulses, respiratory rates, and clinical scores are shown in the Figure. No child showed any significant deterioration after starting treatment, and the condition of all children improved steadily after one or two hours. No statistically significant difference (Student's *t* test) between the aminophylline and salbutamol groups was found, except for pulse rates at 18 and 24 hours, when salbutamol appeared to cause a relative tachycardia.

Discussion

Clinical signs improved in all children from starting treatment, and pulse and respiratory rates improved after 2 hours. All children were unequivocally better at 6 hours. Their improvement during this period can be largely attributed to either salbutamol or aminophylline. Although the children received hydrocortisone after 2 hours, it is unlikely that this

drug began to have any effect for several hours (Collins *et al.*, 1970, 1975). Furthermore our data give no indication that there is a precise time at which recovery is accelerated after the administration of hydrocortisone. The results are similar to those of Pierson *et al.* (1974) who carried out a study in which hydrocortisone appeared to ameliorate hypoxaemia immediately, but did not affect any other parameters in this way.

Salbutamol caused a tachycardia seen at 18 and 24 hours, but the clinical significance of this is trivial. No patient suffered any cardiac arrhythmia.

References

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Adder bites in children

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SUMMARY 16 children with adder bites were admitted to hospital in Southampton in the years 1969-77. Two children were severely poisoned; these 2, and a 3rd, fulfilled suggested criteria for antivenom administration but they recovered without it. Three children had no treatment, and 9 children no analgesia. Prolonged morbidity was not seen in these children. Careful observation in hospital was the most important factor in management, with early clinical improvement obviating the need for antivenom.

Children are less likely to suffer long-term morbidity after snake bites than adults, but can suffer no less severely from the immediate consequences of the venom. Experience in Southampton shows that snake bites to children are not uncommon, although Reid (1976) suggested they were rare. Controversy still exists about the use of antivenom, particularly

in children. The experience with children bitten by *Vipera berus*, and admitted to hospital in Southampton is reviewed.

Patients

A retrospective study was made of all children, aged 14 years or younger, admitted to hospital in Southampton with a diagnosis of adder bite during the 9 years 1969-77. The diagnosis was accepted if the observed signs were compatible, whether or not a snake was seen. Postdischarge morbidity was ascertained by writing to the families; most of the children were visitors to the area, making follow-up difficult.

During the period 1969-77, 16 children (14 of whom were boys) were diagnosed on clinical grounds as having suffered a snake bite (a snake was not seen in 2 cases), and admitted to hospital. They ranged in age from 14 months to 14 years. All but