

Sublingual Terbutalin in Bronchial Asthma

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The utility of terbutalin as a bronchodilator, either oral or parenteral, in childhood bronchial asthma is well documented(1,2). However, the oral route takes a relatively long time to act and the parenteral mode requires trained personnel with monitoring which may not always be feasible in the peripheral centres.

One of the authors is an asthmatic on oral terbutalin therapy. Rapid relief from bronchospasm by a terbutalin tablet kept beneath the tongue before water could be procured for swallowing, prompted this trial. The present study was designed to

evaluate the utility of sublingual terbutalin as a rapid bronchodilator in children with acute exacerbation of bronchial asthma.

Subjects and Methods

Eight known asthmatic children with an acute exacerbation of the attack were the subjects for the study. A tablet of terbutalin, in the same dose as used orally, was placed below the tongue. Care was taken to ensure that the tablet was not swallowed. The pertinent pre and post tablet introduction information was recorded. An informed oral consent was obtained from the parents/guardians of the children.

Results

The details of the eight children and their response to therapy is detailed in Table I. Subjective and objective evidence of rapid relief was documented in all the

TABLE I—Summary of the Cases

S.No.	Age (mo)	Resp. Rate		Rhonchi		Indrawing		Time (min)
		B	A	B	A	B	A	
1.	16	36	32	++	+	++	+	2
2.	72	44	39	++	+	++	+	2
3.	30	38	32	++	+	++	+	3
4.	60	40	30	++	+	++	+	2
5.	60	60	48	++	+	++	+	2
6.	18	48	40	++	+	++	+	2
7.	30	44	36	++	+	++	+	2
8.	24	48	36	++	+	++	+	2

Resp. rate = Respiratory rate per minute. B = Before initiating therapy; A = After initiating therapy—as per time mentioned against that particular case.

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subjects. No obvious side effects were documented due to this mode of therapy.

Discussion

Terbutalin is incompletely absorbed from the gastrointestinal tract. It under-

goes fairly extensive first pass metabolism by sulfate (and some glucuronide) conjugation in the liver and possibly the gut wall. About 75% of the terbutalin absorbed from the gastrointestinal tract gets conjugated and is inactive whereas the remaining 25% is unconjugated and the active form of the drug. However, of the parenterally administered terbutalin, only 25% gets conjugated while 75% remains unconjugated and active. Sublingual terbutalin, like the parenterally administered drug escapes the first pass metabolism in the liver. Sublingual terbutalin, therefore, rapidly gives rise to higher levels of the active unconjugated form of the drug.

The results of this study indicate that sublingual terbutalin can act as a safe and rapid bronchodilator in children with an acute exacerbation of bronchial asthma. The magnitude of the effect probably depends upon the pretreatment airway calibre. The potential implications of this observation, if confirmed subsequently, are immense. Sublingual terbutalin could prove useful in peripheral centres (where nebulisers and syringes may not be handy) and could even replace injection adrenaline as the first line of therapy in such subjects. In fact, in Virar, this mode of therapy is being successfully employed by many practitioners and it has resulted in less emergency referrals to the doctors and fewer hospitalizations. The brittle terbutalin tablet can be easily crushed and powder sprinkled in below the tongue bit by bit to obviate swallowing in a non-compliant or young child. However, before recommending this as a universal mode of therapy, controlled clinical trials are warranted.

REFERENCES

1. Dollery C. Terbutalin. In: Therapeutic Drugs, Vol. 2. Edinburgh, Churchill Liv-

ingstone, 1991, pp t8-t11.

2. Reynolds JEF. Terbutalin sulphate. In: Martindale --The Extra Pharmacopoeia, 29th edn. London, The Pharmaceutical Press, 1989, pp 1483-1485.

Maternal Knowledge, Attitudes and Practice in Diarrhea

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In developing countries diarrhea remains a major public health problem. Mothers caring for children with diarrhea are often ignorant regarding its cause and appropriate management. While dehydration is the major cause of morbidity and mortality, most mothers tend to restrict fluid intake in a patient with diarrhea and dehydration(1).

Material and Methods

Three hundred mothers whose children were admitted for diarrhea diseases in the Pediatric ward of Gandhi Memorial Hospital, S.S. Medical College, Rewa were studied. The mothers were questioned on a carefully prepared questionnaire pre-tested and modified after an initial pilot study. The questions related to their knowledge regarding diarrhea and its

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