goes fairly extensive first pass metabolism by sulfate (and some glucornide) 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 actute 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.

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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 pretested and modified after an initial pilot study. The questions related to their knowledge regarding diarrhea and its

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causes and the treatment offered. The questions were asked in a simple language and answers recorded.

Results

A total of 74.3% of mothers interviewed were from rural background and 80.6% were in the age group of 20-30 years. Majority of mothers were Brahmins (38.4%). Others included Scheduled Castes (9.6%), Patel (8%), Thakur (7.6%) and Muslim (7%). Seventy per cent of the mothers were illiterate and belonged to either the upper lower (46.6%) or lower middle class (40.6%) of Kuppuswamy's classification.

One hundred and eighty five (61.6%) mothers considered passage of semi-solid or watery stools and 151 (50.3%) passage of 3-5 stools per day as abnormal and suggestive of diarrhea.

Nearly 65% of mothers felt that teething was the main cause of acute diarrhea, other causes ascribed included evil eye (46%) and contact with another case of diarrhea (*Table I*). A total of 69.6 and 62.3% mothers considered weakness and passage of blood in stools, respectively, as the most common complications of diarrhea. Only 3% mothers felt that dehydration was an important complication.

Breast milk was allowed during diarrhea by 266 (88.6%) mothers. Pulses and rice gruel (39.3%) and diluted cow milk (34.6%) were also frequently given. Only 4.4% mothers used oral rehydration solution for treatment of diarrhea (*Table II*).

A wide range of home remedies were administered by the mothers for management of diarrhea. Herbal concoctions (83.6%), myrobalan (66.4%), parsley (60.6%), herb (59.3%), rock salt (36%) were commonly used. Nutmeg was used in 15.7% cases.

TABLE I–*Mother's Knowledge of Causes of Diarrhea.*

Knowledge	No.	%
Teething	193	64.3
Evil eye	138	46.0
Contact with a child diarrhea	110	36.6
Malnutrition	85	28.3
Worm infestation	68	22.6
Eating mud	56	18.6
Mother's food habits	53	17.6
Eating sweets	52	17.3
Dirty water	46	15.3
Hot cold foods	32	10.6
Change of food	25	8.3
Dirty environment	18	6.0

TABLE II–*Feeding Pattern During Diarrhea.*

Food items	No.	%
Breast milk	266	88.6
Pulses and rice gruel	118	39.3
Cow's milk (diluted)	104	34.6
Cow's milk (undiluted)	57	19.0
Boiled pulses water	25	8.3
Boiled rice water	23	7.6
Banana	16	5.3
Oral rehydration solution	13	4.4
Whole diet	10	3.3
Tea	8	2.6
Curd	7	2.3

Discussion

Half the mothers considered passage of liquid stools, 3-5 times a day as diarrhea. In a study by Srinivasa and Afonso(2) almost three-fourths mothers studied, considered passing watery stools more than three times a day as diarrhea. Nearly two-

thirds mothers felt that teething causes diarrhea, while evil eye was the next important cause. Other workers have emphasized these prevalent notions of teething, evill eye and hot or cold foods as the chief causes of acute gastro-enteritis in children(2-4). However, there were some mothers who mentioned causes which can possibly be considered as rational, including contact with a child with diarrhea, worm infestations, dirty water, unhygienic environment and malnutrition. Similar responses have been observed by other authors previously(2-4).

Only 3% of mothers listed dehydration as an important complication of diarrhea, reflecting a lack of adequate emphasis on health education. An almost similar observation was made by Srinivasa and Afonso(2) where only 5% of mothers were aware that dehydration could occur following an episode of diarrhea. Usually dietary restrictions are imposed during an episode of diarrhea(2,5-8). These include avoiding 'hot' (*e.g.*, jaggerry, coffee, garlic, onions, peas) and fried foods and milk products. Occasionally family members may even restrict fluid intake(1), with serious consequences. Only 4.4% of mothers in this study were using oral rehydration solution for prevention and treatment of diarrhea. The fluid was often not reconstituted properly and inadequate amounts administered.

While most of the home remedies advised are inoccuous, drugs including opiates are potentially dangerous. Use of antiprostaglandin agents including nutmeg may have beneficial effect in diarrhea(9).

Despite acute gastro-enteritis being a leading cause of infant and early childhood mortality, the knowledge and practices amongst mothers are inadequate. There is need for imparting health education to mothers. They should be told about general hygiene, importance of adequate diet during illness and above all the life saving role of oral rehydration solution in diarrhea. Involvement of health workers and local leaders along with a judicious use of television and radio for this purpose will go a long way in reducing the diarrhea deaths.

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