Cimetidine in cystic fibrosis

Sir,

It is known that pancreatic enzymes are inactivated at low pH (Heizer *et al.*, 1965). In children with pancreatic insufficiency due to CF, administration of bicarbonate with pancreatic supplements results in improvement of steatorrhoea (Kattwinkel *et al.*, 1972). Concurrent administration of cimetidine and pancreatic supplements in patients with pancreatic insufficiency results in less steatorrhoea and a higher duodenal enzyme output (Regan *et al.*, 1977).

A pilot study has examined the effect of cimetidine on steatorrhoea in children with pancreatic insufficiency due to CF who were receiving pancreatic supplements. 5 children were put on a constant fat intake of at least 30 g/day, and their usual treatment including pancreatic supplements was maintained. The study was conducted as an outpatient procedure. After 3-day faecal fat collection, they were started on cimetidine 20 mg/kg per day in 4 equal doses, administered one hour before each meal. While on cimetidine 3-day faecal fat collection was repeated starting on the 8th day. Results are given in the Table.

Table Effect of cimetidine on steatorrhoea

No.	Sex	Age (years)	3-day faecal fat excretion (g/day)		
			Pretrial	On cimetidine	Reduction (%)
1	M	8	15	13.3	1.7 (11.3)
2	F	12	9.9	4.3	5.6 (56.6)
3	M	5	9.6	3.0	6.6 (68.7)
4	M	5	7.4	12.8	—
5	M	6	22.1	10.9	11.2 (50.7)

Administration of cimetidine with pancreatic supplements reduced the faecal fat excretion in 4 out of 5 children, in 3 cases by more than 50%. In Case 4 steatorrhoea increased on cimetidine but without any symptoms and we have no explanation for it. None of the children had any side effects from the drug.

Three further children failed to complete faecal collections satisfactorily and had to be excluded. We had great difficulty in organising this study as an outpatient procedure, admission to hospital for purely research purposes being often unacceptable to families. Further studies are needed to determine the indications of cimetidine in the dietary management of CF. It may be of particular help in those few children where manipulation of diet and pancreatic supplements fail to produce the desired reduction of steatorrhoea. The safety of life-long administration of the drug and its optimum dose also need to be assessed.

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References

- Heizer, W. D., Cleaveland, C. R., and Iber, F. L. (1965). Gastric inactivation of pancreatic supplements. *Bulletin of the Johns Hopkins Hospital*, **116**, 261-270.
- Kattwinkel, J., Agus, S. G., Taussig, L. M., Di Sant'agnese, P. A., and Laster, L. (1972). The use of L-arginine and sodium bicarbonate in the treatment of malabsorption due to cystic fibrosis. *Pediatrics*, **50**, 133-137.
- Regan, P. T., Malagelada, J. R., Di Magno, E. P., and Gioi, V. L. M. (1977). Fate and efficacy of oral enzymes in pancreatic insufficiency: effects of neutralising antacids, cimetidine, and enteric coating. *Gastroenterology*, **72**, No. 5, Part 2, A95, 1118.