Correspondence

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Automated method for exchange transfusion

Sir,

Philpott and Banerjee (*Archives*, 1972) are to be congratulated on their method of exchange transfusion using a two-channel Holter pump. Many have been interested in this technical problem, and the Holter pump provides an acceptable solution. The pumping rate of the machine is accurate to $\pm 3\%$. More importantly, the discrepancy between the flow rates of the two channels operating together, is, in our hands, in the region of 1%. In their photograph the authors show the donor blood close to the pump. It is common practice, however, for the donor blood to be 'suspended' (authors' word) high above the working area. It seemed possible that the hydrostatic pressure so achieved might introduce an important discrepancy between the flow rates of the two channels.

To test this hypothesis, an *in vitro* system was set up. A Holter pump pumped water through two identical systems into graduated cylinders at 26 °C.

The difference in flow rates with afferent hydrostatic pressure variation was measured. The channel track was varied and the increased pressure applied sequentially to both systems (Table).

It is apparent that a pressure differential of 52 to 56 cm water increases the channel discrepancy up to six-fold. Though the authors equalize their volumes at 100 cm³ intervals, it appears worth while to approximate the afferent pressures on the pump channels.

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Mist therapy in cystic fibrosis

Sir,

I think we can all accept as common ground the statement of Doershuk and co-workers (1972) that 'early diagnosis, prompt and comprehensive . . . , and whenever possible, prophylactic . . . care . . . (and) a concerned and interested physician' are essential to the best management of CF. The discussion is about the content of the care programme. In my Annotation (Lawson, 1972) referring to Mearns' (1972) results without mist tents, I wrote 'the very success of this series in the most threatened period of life suggests that very hard evidence is now needed if the routine use of nocturnal mist tent therapy is to be justified'. My reason for referring to mist tent therapy in particular is that of all the measures advocated in the routine care of CF it is the most socially disturbing to apply. It has been widely used in North America, but relatively little used in the United Kingdom.

Doershuk and Matthews state that their results, using mist tents, are comparable with those of Mearns, who does not use them. Mearns quoted both quantity and quality of survival. Doershuk *et al.*, despite their later emphasis on the necessity of reporting 'the quality of life of survivors', quoted only quantity. But even if rough comparability with the Mearns' series is accepted, this does no more than leave the question wide open.

There are 3 main objections to the routine use of nocturnal mist tent therapy (all of which one would over-rule if it could be shown to be really essential). (1) It does more to deform the normal structure of a growing child's social environment than any other recommended treatment. This factor, especially in teenagers, has given rise to wide-spread concern in North America in the last few years. (2) Mist tents are notoriously difficult to keep free of *Pseudomonas* contamination—an organism which seems to be causing

TABLE

System	L	R	L	R	L	R	L	R	L	R	L	R
Track	In	Out	In	Out	In	Out	Out	In	Out	In	Out	In
Mean pressure (cm water)	6	58	60	4	6	4	4	60	58	6	4	6
Flow (cm ³ /time)	96	100	100	94	100	99	96	100	100	94	100	99
Difference (%)	4		6		1		4		6		1	

L, left; R, right.

growing concern with increased survival. (3) There is not, and never was, a sound rationale for the use of this form of treatment.

Nobody would pretend that the problem is easy of solution, but it behoves us all to arrange our work so that our contentions can be either proved or disproved in the course of time. I hope that the European Working Group's reporting programme, to which I referred in my Annotation, will gradually put us in a position to give some answers: but continued reiteration that 'each measure recommended for long-term management works best in conjunction with the other

measures' can only help to ensure that our present degree of ignorance persists.

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