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AA/SAN
18th April 1980.

The Editor,
British Medical Journal,
Tavistock Square,
London W.C.1.

Dear Sir,

re: Factor VIII Supply and Demand

Both Biggs and Cash have estimated the requirements of factor VIII in the United Kingdom to be around 50,000,000 units per annum [1,2]. Both these authorities have based their calculations on the annual usage of factor VIII up to and including 1975. For reasons documented below, I believe this figure to be now a very serious underestimate of future requirements:

a) An explosive growth in prophylaxis (negligible in 1975 in the United Kingdom) has taken place from 1976 [3]. The use of prophylaxis has been shown to substantially increase the usage of factor VIII; two to four times the amount of factor VIII in current use being required for a prophylactic programme [4,5,6,7].

b) The number of patients on home therapy in the United Kingdom increased by one third in 1976 [3]. Rizza [8] has shown that patients on home therapy use 15% more factor VIII than those on hospital-based treatment. This increase in material usage may be balanced out by the trend to lower dosages for early bleeds treated at home [9,10,11]. However, the 15% failure rate at low dosage [11,12,13]

which is not very different from the retransfusion rates for boys at Lord Mayor Treloar College [14,15], cannot be ignored. As the majority of bleeds occur into the knees, elbows and ankles, it is disturbing to contemplate the effect of lowering the dose of factor VIII still further in the 15-20% of joint bleeds which would have failed to respond even to standard dosage. One must speculate that the arthropathy engendered by the increased amount of blood present for a longer period in these joints would generate chronic arthropathies which, in their initial stages at least, would result in more frequent bleeding.

c) The lengthening haemophiliac life-span is likely to lead to a doubling of the haemophiliac population [16,17]. The leading of normal lives by haemophiliacs will result in the fathering of many more carriers and thus a second increment of increase in the haemophiliac population in two generations [16].

d) It is self evident that most haemophiliacs who were able to produce children in the past were likely to have been suffering from milder forms of the disease. Because the severity of the disease breeds true in families [18] an improvement in survival and therefore of a reproductive capacity is likely to bias the haemophiliac population to the severer forms. As the severest 20% of the haemophiliac population use 80% of the blood resources [17], this will have a considerable impact on demand of factor VIII in the future.

e) The treatment of patients with inhibitors to factor VIII has changed in certain respects over the past four years. Patients with low inhibitor levels and low antibody response to treatment

with factor VIII are now treated with high doses of factor VIII for almost all bleeds [19]. This group of patients is not mentioned in the recommendations from the same unit in 1976 [20].

It is apparent from my own experience that the National Health Service cannot provide more than a fraction of my needs for the treatment of 70 severe haemophiliacs. The shortfall is made up by the purchase of expensive commercial concentrates and it has been made plain to me that there will be pressures to cut the amount made available and in the forseeable future no prospect of any increase. If this situation is reflected nationwide, and I have no reason to believe that it is not, then the escalating requirement must shortly overtake the diminishing resources and create a major crisis in the expectations for haemophilia treatment.

I think it is essential that we recognise and attempt to avert this approaching crisis. As it is apparent that the National Health Service facilities are incapable of processing enough of the voluntary donations from this country, surely we should explore the possibility of commercially successful private industries fractionating the material for the National Health Service. This approach would provide a glimmer of hope in what otherwise seems a very gloomy prospect.

Yours faithfully,

GRO-C

A.Aronstam
Consultant Haematologist.

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