The Use of Gemfibrozil in the Treatment of Primary Hyperlipoproteinæmia. Preliminary Report

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The close relationship between hyperlipoproteinæmia and various common conditions such as hypertension, cerebrovascular accidents and heart attacks is widely recognized. Hence the interest of the experimental pharmacologist in finding an appropriate drug for such conditions which shows the maximum therapeutic activity without displaying adverse effects.

In this paper we present the preliminary results of our participation in a multicentre trial in the clinical investigation of gemfibrozil.

Materials and Methods

The study was performed on 10 patients, 7 males and 3 females, aged between 28 and 69 years (average 49.20±3.17).

The patients were informed of the nature of the experiment and all of them were willing to participate. They were in good general health, but had one of the following types of hyperlipoproteinæmia: IIa, IIb, III or IV. Their triglyceride levels were above 200 mg/100 ml and their cholesterol levels above 300 mg/100 ml.

None of them had a secondary hyperlipoproteinæmia or a chronic illness such as kidney or liver insufficiency. They were not on anticoagulant, antithyroid, œstrogen or antidiabetic therapy and none of them had received any other drug for the hyperlipoproteinæmia during the previous six months.

Table 1

Type of hyperlipoproteinæmia, sex, age, and body weight changes during eight weeks treatment with gemfibrozil

Patient No.	*Type*	*Sex*	*Age*	*Body weight (kg)*	
				Basal	*8th week*
1	IIb	M	50	78.0	77.5
2	IIb	M	61	85.8	86.0
3	IIb	M	51	77.0	76.5
4	IIb	F	69	67.0	67.0
5	IIb	M	51	71.0	69.0
6	IIa	F	28	50.0	49.0
7	IIa	F	41	46.0	46.0
8	IIa	M	50	80.0	80.5
9	IIb	M	45	66.0	66.8
10	IIa	M	46	81.0	83.5

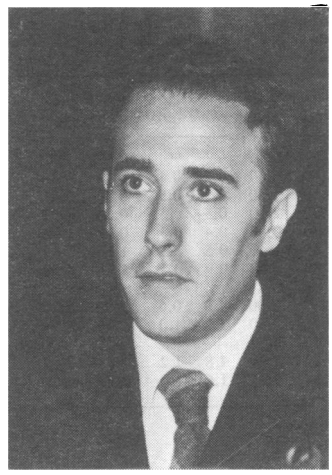

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Table 1 summarizes the type of hyperlipoproteinæmia, sex, age and body weight changes. Basal values were obtained before initiating the treatment and during the four consecutive weeks. During the treatment, the patients had their usual diets.

The initial dose was 400 mg twice daily. The same dose was maintained during the eight weeks, except in Patients 2 and 8, where it was necessary to increase it up to 1200 mg/day. Initially, and every four weeks, the following blood determinations were performed: cholesterol, triglycerides, lipoprotein fractions, blood count, ESR, CPK, alkaline phosphatase, SGOT, fibrinogen, prothrombin time, platelets, glucose, uric acid and bilirubin, together with urinalysis. At the same time each patient was examined for any change in body weight, arterial pressure and the appearance of xanthomas.

Student's t-test was used for statistical analysis.

Results

Body weight did not change during the first eight weeks of treatment (Table 1).

The values of the triglycerides and cholesterol decreased during the treatment. Triglycerides fell from 224.60±44.00 mg/100 ml to 115.90± 14.42 mg/100 ml, and during this same period cholesterol fell from 360.27±27.24 mg/100 ml to 295.10±17.00 mg/100 ml. The decrease in triglycerides was significant at the end of the eighth week ($P<0.05$), but not after four weeks.

Beta lipoproteins decreased from 58.92± 3.12 mg/100 ml to 56.09±2.13 mg/100 ml, and pre-beta lipoproteins from 18.78±3.00 mg/100 ml to 14.16±1.95 mg/100 ml. At the same time the alpha-lipoproteins increased from 22.19±3.61 mg/

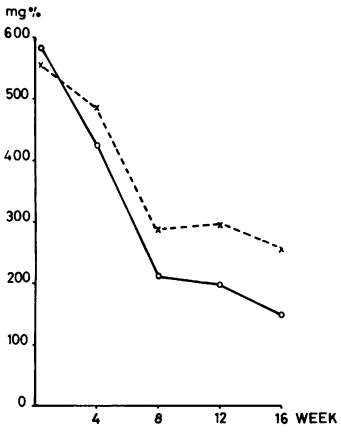

Fig 1 *Cholesterol (– – –) and triglycerides (——) (mg/100 ml) in Patient 1 during 16 weeks of gemfibrozil treatment (800 mg/day)*

100 ml to 29.79±2.91 mg/100 ml. None of these changes is significant.

Although this study concerns the first eight weeks of treatment with gemfibrozil, some of our patients have been under treatment for a longer time. In Fig 1 it is possible to follow the triglyceride and cholesterol values in Patient 1 during his 16 weeks of treatment. None of the other parameters described, including enzyme determinations, showed any significant change.

Finally, it must be pointed out that the side effects have been unimportant. One patient during his first week of treatment showed a feeling of 'heavy headedness' which disappeared without changing the dose or adding any new drug. Another patient, a woman, complained of orthostatic dizziness which disappeared at the beginning of menstruation.

Conclusions

These preliminary observations may be summarized as follows:

There was a significant decrease in triglycerides after eight weeks of gemfibrozil treatment. Cholesterol showed a tendency to decrease which was not significant. There was a change towards normality in the lipoprotein fractions. No changes occurred in body weight or in any other of the parameters studied, and the drug was well tolerated. Unwanted side effects were not observed.