Chronic Liver Disease in Intravenous Drug Abusers Attending the Drug Advisory and Treatment Centre

YVONNE ARTHURS
M.B., M.R.C.P.I.

M. G. KELLY
M.A., M.D., M.R.C.Psych., D.P.M.

J. F. FIELDING*
B.Sc., M.D., F.R.C.P.I., F.R.C.P.

Department of Medicine and Gastroenterology
and
Drug Advisory and Treatment Centre
The Charitable Infirmary
Jervis Street, Dublin 1

The occurrence of chronic liver disease in intravenous drug abusers is well documented[1,2,3]. Its prevalence in Ireland is unknown. In this study, we report the frequency and nature of chronic liver disease among intravenous drug abusers attending the Drug Advisory and Treatment Centre in The Charitable Infirmary, Jervis Street, Dublin 1.

Patients and Methods

One hundred and thirty-nine drug abusers attended the Drug Advisory and Treatment Centre during the period 1st May to 31st December, 1979. Of these, 61 patients were admitted to the hospital for in-patient detoxification following drug abuse. The second and subsequent visits of patients to the Centre and the second and subsequent admissions of patients to the hospital were not included. Fifty-eight of those admitted abused intravenously, and each of these were invited to participate in the study. Thirty-nine gave informed consent and had liver biopsies carried out. 19 patients did not, for the following reasons:

(1) Twelve refused the procedure.
(2) Six either discharged themselves or their behaviour was such that it led to their being discharged within 48 hours.
(3) One patient had liver biopsy deferred because of advanced pregnancy. She subsequently died as a result of drug overdosage.

In addition, seven of the 69 intravenous abusers amongst the 78 patients not admitted had liver biopsy carried out on an out-patient basis whilst awaiting admission. Overall, 46 liver biopsies were performed.

The 46 patients who partook in the study also had the following investigations carried out:

Each patient was interviewed (Y.A.). The following points were specifically raised:

(1) History and duration of drug abuse.
(2) Routes of administration of drugs.
(3) Sharing of syringes with others.
(4) Alcohol intake.
(5) Personal history of or contact with jaundice.

Stigmata of drug abuse (needle marks, infected skin lesions), tattoos and stigmata of chronic liver disease were sought on physical examination.

Laboratory investigations carried out included: full blood count, platelet count, erythrocyte sedimentation rate, serum alanine and aspartate aminotransferase, lactate dehydrogenase, alkaline phosphatase, serum bilirubin, gamma glutamyl transferase, hepatitis B surface antigen, anti-nuclear factor, anti-smooth muscle and anti-mitochondrial antibodies.

Histological diagnosis was made in accordance with the criteria suggested in a review by an International Group (1977)[4]. For the purpose of this study, alcohol intake was considered:

Heavy – if equal to or greater than 120 grms. pure alcohol per day;
Moderate – if between 80-120 grms. pure alcohol per day; or
Mild – if less than 80 grms. pure alcohol per day.

The daily alcoholic consumption was calculated according to the levels of alcoholic concentration of various drinks given by McCance and Widdowsen (1967)[5].

The records of the 19 patients who did not have liver biopsies carried out were examined to determine whether they could be considered similar to those who had liver biopsies. Similarly, the records of those drug abusers who attended the Centre during the study period, but were not admitted to hospital, were also studied. In each group, the mean age, sex, the mean duration of drug abuse and, where possible, abnormal S.G.P.T. levels and past and present evidence of Hepatitis B virus infection was sought.

Results

Twenty-seven of the 46 patients had their first biopsy. Data taken from the records of patients who did not have liver biopsies while in-patients, or who were not admitted to the Centre during the study period, are shown in Table 1.

Of the 71 patients not admitted for in-patient care, 62 were intravenous drug abusers and nine were oral abusers only (Fig. 1). Of these, 52 had required in-patient detoxification in the past. The histological diagnoses of the patients biopsied are shown in Table 2, as is their alcoholic intake in Table 3.

Stigmata of drug abuse are shown in Table 4; stigmata of liver disease in Table 5; biochemical and immunoglobulin abnormalities and HBsAg status are shown in Table 6.

Table 1
Comparison of Data from Each Group of Patients

Patient Group	No. of Patients	Male	Female	Mean Duration of I.V. abuse	Abnormal S.G.P.T.	Past or Present Evidence of B virus infection
Biopsied	46	37	9	50.8 months	23 of 46	18 of 46
Admitted not Biopsied	19	16	3	58.0 months	9 of 16	3 of 16
Not admitted	62	53	9	56.3 months	29 of 49	6 of 22

*Requests for reprints to Dr. J. F. Fielding, The Charitable Infirmary, Jervis Street, Dublin 1.

Table 6
Abnormal S.G.P.T., HBsAg Status and Abnormal Immunoglobulin in Patients Biopsied

Histological Diagnosis	No. of Patients	Abnormal S.G.P.T.	HBsAg Positive Past or Present	Abnormal Immunoglobulin
Chronic Aggressive Hepatitis	8	6	6	4
Chronic Persistent Hepatitis	20	11	9	4
Minor Changes	9	6	4	–
Fatty Changes	7	4	–	1
Normal Changes	2	–	–	–

lower in those with normal histology, confirming previous findings that the propensity for some form of liver disease increases with the duration of exposure to needles[8].

This study suggests that six-tenths of intravenous drug abusers attending the Drug Advisory and Detoxification Centre have some form of chronic liver disease, with just under one patient in five suffering from chronic aggressive hepatitis. It demonstrates the magnitude of ill-health and present and future health care requirements in relation to liver disease in drug abusers in this country. It highlights one more area where active immunization against hepatitis B and non-A non-B hepatitis is urgently required.

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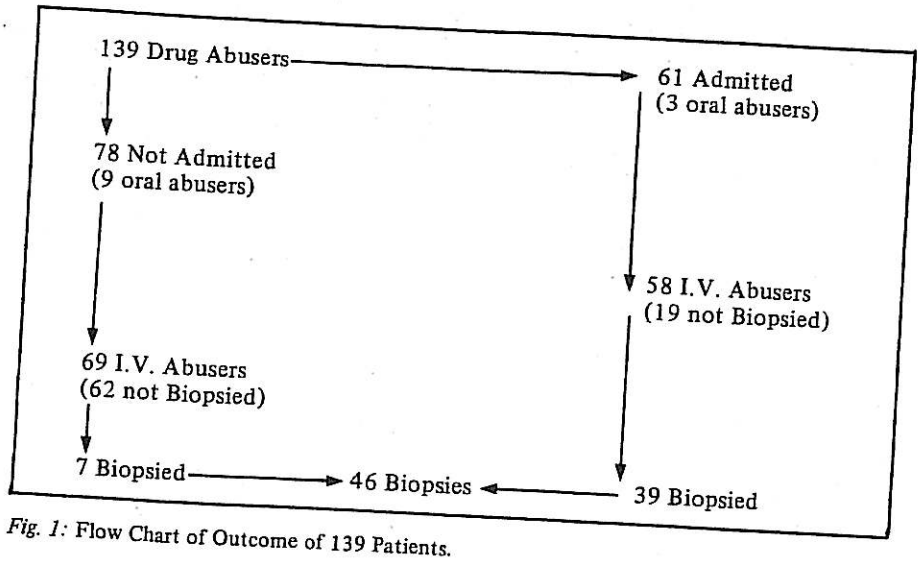

Fig. 1: Flow Chart of Outcome of 139 Patients.

Table 2
Histological Results in Patients Biopsied

Histological Diagnosis	No. of Patients	%
Chronic Aggressive Hepatitis	8	17.4%
Chronic Persistent Hepatitis	20	43.5%
Minor Changes	9	19.5%
Fatty Changes	7	15.0%
Normal Changes	2	4.3%

Table 3
Alcohol Intake in Patients Biopsied

Histological Diagnosis	No. of Patients	Heavy	Moderate	Mild	Nil
Chronic Aggressive Hepatitis	8	3	–	4	1
Chronic Persistent Hepatitis	20	5	5	6	4
Minor Changes	9	4	3	2	–
Fatty Changes	7	4	1	1	1
Normal Changes	2	–	–	1	1

Table 4
Stigmata of Drug Abuse

Histological Diagnosis	No. of Patients	Needle Marks	Skin Lesions	Tattoos
Chronic Aggressive Hepatitis	8	7	–	3
Chronic Persistent Hepatitis	20	18	5	9
Minor Changes	9	6	–	4
Fatty Changes	7	7	2	2
Normal Changes	2	2	–	1

Table 5
Stigmata of Liver Disease in Patients Biopsied

Histological Diagnosis	No. of Patients	Hepatomegaly	Spider Naevi
Chronic Aggressive Hepatitis	8	–	–
Chronic Persistent Hepatitis	20	4	–
Minor Changes	9	–	–
Fatty Changes	7	2	1
Normal Changes	2	–	–

Discussion

Approximately one-third of the total number of drug abusers who attended the Drug Advisory and Treatment Centre during the period of this study had liver biopsies carried out. Review of the records of the remaining patients showed them to be an essentially similar group to those biopsied. It appears reasonable, therefore, to assume that the prevalence of liver disease in that group is of the same order as in the group biopsied. As 44 of the 46 liver biopsies showed some histological abnormality, the overall prevalence of some form of liver disease is likely to be three times as large.

Chronic aggressive hepatitis occurred in 17.4%; chronic persistent hepatitis in 43.5%. Only two biopsies (4.3%) could be considered normal.

All the patients in this study were active abusers up to the time of admission or until a few days before it. Liver biopsy was performed on those who agreed to the procedure and was not related to their liver function tests or HBsAg status[6].

In 1972, Cherubin and his colleagues took autopsy liver specimens from 44 active drug abusers (none of whom died of causes related to their liver) and considered their material represented a random sample of drug abusers in New York. Twelve of the 44 (27.3%) had chronic active (aggressive) hepatitis, 22.7% had chronic persistent hepatitis and 11% were considered normal. This study differs from ours in that the specimens were taken at autopsy and were from predominantly black males. Our study supports the high frequency of chronic liver disease and the relative infrequency in which normal histology was found.

The Veterans' Administration Collaborative study[7] examined asymptomatic actively abusing drug addicts. In 60 patients selected for liver biopsy on the basis of persistently elevated transaminase levels, 17% had chronic active hepatitis and/or macronodular cirrhosis, 58% had chronic persistent hepatitis; none was considered normal although four were considered to have non-specific changes only. These figures correlate closely with the results found in our study.

Although most of the patients in the present study had clinical evidence of drug abuse (needle marks), there was little clinical evidence of chronic liver disease. It was not possible to determine, clinically or biochemically, the degree of liver abnormality. These findings confirm those of previous studies[1,7]. The mean duration of drug abuse was not significantly different between the different types of chronic liver disease, but was significantly