



TAKE-HOME POINTS

- **High rates of cirrhosis were seen in the largest cohort to date of chronic HDV patients with compensated liver disease**
- **Over 40% of cirrhotic patients were ≤ 45 years of age**
- **Older age and subtle perturbations in INR and platelet count should raise suspicion of cirrhosis in this population**

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Clinical features predictive of cirrhosis in a large cohort of patients with chronic hepatitis delta infection - Insights from the *D-LIVR* trial

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1 Introduction & Aim

Chronic HDV infection (HDV) is the most rapidly progressive form of chronic viral hepatitis. Data regarding predictors of cirrhosis in HDV is limited, especially in those of younger age. The aim of this study was to assess the predictive value of demographic and laboratory variables and non-invasive test scores of liver fibrosis for diagnosis of biopsy-proven cirrhosis in a large cohort of patients with HDV.

2 Methods

- 407 patients in the ongoing Phase 3 HDV *D-LIVR* trial (NCT037193139) were included in the analysis
- Demographic and anthropometric data, laboratory and imaging studies, and liver biopsies were obtained at baseline and are summarized below using median (min, max) for continuous variables and frequency and percentages for categorical variables.
- Descriptive statistics were used to summarize demographic and clinical baseline patient characteristics and chi-square test was used for single variable and multiple variable analyses.
- A series of logistic regression models were fit to the data including cirrhosis status as the outcome, LSM results, AST, ALT, platelets, albumin, bilirubin, Fibrotest score, HBsAg, and BMI as potential covariates, with forward selection used to obtain the final model.

3 Results

Baseline Characteristics	All Subjects (N=407)
Age, years	42 (18-69)
Male, n (%)	281 (69%)
Ethnicity, n (%)	
White	298 (73%)
Asian	93 (23%)
Black or African American	6 (2%)
ALT, IU/L	78 (27 – 501)
Total Bilirubin (umol/L)	9 (2 – 74)
Albumin (g/L)	44 (26 – 58)
Platelets (10 ⁹ /L)	177 (3 – 493)
INR	1.1 (0.73 – 2.24)
HDV-RNA, log IU/mL	5.08 (1.60 – 7.65)
Liver cirrhosis, n (%)	108 (27%)
Fibroscan, kPa	10.5 (3.7 – 48)
Fibrotest	0.45 (0.04 – 0.96)

3 Results (cont)

Final model for prediction of cirrhosis - all subjects (N=407)

Parameter	DF	Estimate	Std Error	Chi - Square	P - value
Intercept	1	-1.2268	0.9289	1.7441	0.1866
Age	1	0.0311	0.0156	3.9816	0.0460
Platelets	1	-0.0113	0.00333	11.5041	0.0007
Fibrotest	1	1.9696	0.7503	6.8916	0.0087

Odds ratio for predicting cirrhosis - all subjects (N=407)

Effect	Point Estimate	95% Confidence Limits
Age	1.032	1.001 - 1.064
Platelets	0.989	0.982 - 0.995
Fibrotest	7.168	1.647 - 31.191

Final model for prediction of cirrhosis in subjects ≤ 45 yo (N=261)

Parameter	DF	Estimate	Std Error	Chi - Square	P - value
Intercept	1	-5.2668	2.4786	4.5153	0.0336
Fibroscan	1	0.0761	0.0380	4.0128	0.0452
Platelets	1	-0.00989	0.00482	4.2039	0.0403
INR	1	4.2045	2.0627	4.1550	0.0415

Odds ratio for predicting cirrhosis - subjects ≤ 45 yo (N=261)

Effect	Point Estimate	95% Confidence Limits
Fibroscan	1.079	1.002 - 1.162
Platelets	0.990	0.981 – 1.000
INR	66.988	>999.999

4 Conclusions

- In the largest cohort to date of patients with chronic HDV, alarmingly high rates of cirrhosis were seen among patients with compensated liver disease and relatively young mean age.
- A high index of suspicion for cirrhosis should be maintained in this population especially in older patients and in those showing subtle changes in markers of synthetic liver function and portal hypertension.

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