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Fatty liver disease: Clinical aspects

Further delineation of fibrosis progression in NAFLD: evidence from a large cohort of patients with sequential biopsies

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Background and Aims: Non-alcoholic fatty liver disease (NAFLD) is the most common liver disease worldwide. There is a need to clearly define fibrosis progression in NAFLD in order to inform clinical trial development. The aim of this study was to assess rates of fibrosis progression in a large cohort of NAFLD patients with paired liver biopsies.
Methods: NAFLD patients without baseline cirrhosis with 2 sequential liver biopsies were identified from 7 European specialist centres. Clinical and laboratory data were collected from the time of liver biopsy. Histological scoring was performed according to the Kleiner criteria.
Results: 321 patients with NAFLD (mean age 48±12 years; 63% male; mean BMI 32.6±6.4 Kg/m2; 32% diabetic; 69% NASH) who had sequential biopsies conducted >1 year apart were identified. Overall, 111 patients (35%) had fibrosis progression between biopsies over median follow up period of 4.1 yrs (range 1-22.6 yrs). The average progression rate was 0.038 ± 0.42 stages/year (range 0-1.73 stages/year) in the whole cohort and 0.37±0.31 stages/year in the progressors. 26 patients (8% of whole cohort, 23% of progressors) were "rapid progressors" (progression >0.5 stages/year). The Table shows the distribution of fibrosis progression at index and follow up biopsy and rate of progression according to baseline fibrosis stage. There was no significant difference in the proportion of patients with NASH or NAFL at baseline who had fibrosis progression (36% vs 30% p=0.33 respectively), and the overall fibrosis rate was similar in patients with NASH or NAFL at the index biopsy (0.02 ± 0.048 vs 0.06 ± 0.23 stages/year p = 0.20 respectively). There was a positive association between the presence of moderate/severe steatosis and fibrosis progression (p<0.001), but no relationship with the NAFLD activity score and fibrosis progression.

	Follow up fibrosis stage							
Baseline Fibrosis	**Stage 0**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Total**	**Progression (mean rate/yr)**	**Regression (mean rate/yr)**
Stage 0	74	**25**	**5**	**5**	**0**	109	32% (0.42 ± 0.39)	0% (0)
Stage 1	*24*	41	**16**	**18**	**4**	103	37% (0.37 ± 0.30)	23% (-0.41 ± 0.34)
Stage 2	*7*	*12*	24	**18**	**5**	66	35% (0.35 ± 0.28)	29% (-0.61 ± 0.64)
Stage 3	*2*	*3*	*7*	16	**15**	43	35% (0.35 ± 0.28)	28% (-0.60 ± 0.77)
Total	107	81	52	57	24	321	35% (0.37 ± 0.31)	17% (-0.52 ± 0.56)

Conclusions: Fibrosis progression rates are variable in NAFLD. The severity of steatosis is an important histological factor in predicting fibrosis progression. Fibrosis progression occurs in a similar proportion of individuals irrespective of baseline fibrosis stage.

Disclosure of Interest: None Declared