Introduction Background and Aims Non-invasive markers of liver fibrosis are used to stratify the severity of Liver disease. The aim of the study was to compare the accuracy of the AST/ALT ratio, AST-platelet ratio index (APRI), and the Kings score in determining significant liver disease using liver biopsy as the reference standard.

Methods A retrospective analysis of patients presenting for liver biopsy at the South West liver unit was reviewed. All patients had routine demographic, biochemical and haematological parameters collected including: aspartate aminotransferase (AST), alanine aminotransferase (ALT), platelets, international normalised ratio (INR) and patient age. The quality of the liver biopsy specimen was recorded including sample length, fragments, and number of portal tracts. Liver biopsy fibrosis was staged using the Ishak score. Non-invasive tests were assessed in their ability to correctly identify significant fibrosis (Ishak stage ≥F3) or cirrhosis (Ishak Stage ≥F5). The scores were calculated as follows: AST/ALT; APRI = ((AST/ALT upper limit of normal))/(Platelets) x100, and Kings score = (AST x Age x INR)/platelets. The accuracy of each test was compared to the reference standard using area under the receiver operated characteristic curve (AUROC).

Results 170 patients were identified. 130 patients had complete data to calculate the scores. The median age 56 years (IQR 45–65), 55% patients were male. Numbers of patients by disease were: autoimmune hepatitis n = 23 (18%), PBC n = 3 (2.3%), PSC n = 2 (1.6%), Fatty Liver disease n = 24 (19%), ALD n = 26 (20%), HCV n = 12 (9.3%), Others n = 40 (30%). The median biopsy length 20mm (17 – 26), portal tracts 9 (5 – 13), biopsy cores 2 (1 – 2). AUROC for significant fibrosis (≥F3) : AST/ALT = 0.84 (0.77 – 0.91), p = 0.0001, Kings Score = 0.73 (0.64 – 0.83), p = 0.0001, APRI = 0.69 (0.60 – 0.79), p < 0.0001, AUROC for cirrhosis (≥F5) : AST/ALT = 0.82 (0.75 – 0.90), p < 0.0001, Kings Score = 0.71 (0.61 – 0.80), p < 0.0001, APRI = 0.66 (0.57 – 0.76), p < 0.0001.

Conclusion Conclusions: The AST/ALT ratio had the greatest diagnostic accuracy in determining significant fibrosis or cirrhosis. The Kings score performed better than APRI. AST/ALT is a simple guide to determine significant fibrosis and cirrhosis in liver disease.

Disclosure of Interest None Declared.