

## **Supplementary Information**

### **Example of ChatGPT-4.0 analyses based on given information**

#### **Prompts**

“Given these parameters, Thai patient with liver biopsy-confirmed MASLD, age 40, sex male, BMI 42, Diabetes (yes), Hypertension (yes), AST 36, ALT 55, Albumin 3.9, Platelet 190, please predict the most likely liver fibrosis METAVIR stage in this patient.”

#### **ChatGPT4.0's answers**

Prediction of Liver Fibrosis Stage in a Thai Patient with MASLD

Given the clinical and laboratory parameters provided, we will assess the most likely METAVIR fibrosis stage using a combination of FIB-4, clinical reasoning, and known risk factors for fibrosis progression.

Step 1: Evaluating Key Risk Factors for Advanced Fibrosis

The following factors increase the risk of fibrosis progression in MASLD:

1. Age (40 years old) Fibrosis risk increases with age, but 40 is relatively young, suggesting a lower likelihood of advanced fibrosis.
2. Sex (Male) Males have a higher risk of MASLD progression compared to females.
3. BMI (42 - Severe Obesity) A BMI >40 significantly increases the risk of fibrosis, particularly F2 or higher. Obesity promotes inflammation, insulin resistance, and hepatic stellate cell activation, leading to fibrosis.

4. Diabetes (Yes - Strongest Predictor of Fibrosis Progression) Diabetes is one of the most powerful independent predictors of fibrosis progression in MASLD. Increases the risk of F2-F3 fibrosis and even cirrhosis (F4) in some cases.

5. Hypertension (Yes) Often associated with metabolic syndrome and fibrosis progression.

### Step 2: Evaluating Liver Function and Fibrosis Markers

1. AST (36) and ALT (55) - Mildly Elevated  $AST/ALT \text{ ratio} = 36/55 = 0.65$  (Less than 1, suggesting mild fibrosis). Advanced fibrosis (F3-F4) is often associated with  $AST/ALT > 1$ . However, in diabetics, ALT can normalize despite significant fibrosis, making enzyme levels alone unreliable.

2. Albumin (3.9 g/dL) – Normal. In advanced fibrosis (F3-F4), albumin usually decreases due to reduced hepatic synthetic function. Since this patient has normal albumin, advanced fibrosis (F3-F4) is less likely.

3. Platelets ( $190 \times 10^9/L$ ) – Normal. Platelet count decreases in advanced fibrosis (F3-F4) due to splenic sequestration from portal hypertension. A platelet count  $>150$  usually suggests F0-F2, making cirrhosis (F4) unlikely.

### Step 3: Non-Invasive Fibrosis Scoring

1. FIB-4 Score = 0.83 → Suggests F0-F1. The patient's FIB-4 score falls well below 1.3, reinforcing the likelihood of F0-F1.

2. NAFLD Fibrosis Score (NFS) - Estimated Using Known Trends. NFS considers Age, BMI, Diabetes, AST, ALT, Platelets, and Albumin. Since the patient has a high BMI,

diabetes, and hypertension, NFS may suggest mild-to-moderate fibrosis (F1-F2) but not cirrhosis (F4) because albumin and platelets are normal.

#### Final Assessment: Most Likely METAVIR Fibrosis Stage

- F0-F1 (No or mild fibrosis) → Most likely. Normal platelets and albumin make advanced fibrosis (F3-F4) unlikely. FIB-4 and AST/ALT ratio suggest minimal fibrosis.
- F2 (Moderate fibrosis) → Possible, but less likely. The presence of diabetes and BMI increase risk but are not strong enough alone to suggest F2+ fibrosis without additional signs.
- F3-F4 (Significant fibrosis or cirrhosis) → Unlikely. No signs of portal hypertension (e.g., thrombocytopenia, low albumin). AST/ALT ratio  $<1$ , making F3-F4 less probable.

Conclusion: Most Likely Fibrosis Stage = F0-F1