The natural history of NASH-induced advanced fibrosis in a large cohort of patients with type-2 diabetes

INTRODUCTION

- Nonalcoholic fatty liver disease (NAFLD) is a progressive disease that can lead to advanced fibrosis (AF) especially in patients with type-2 diabetes (T2D)
- Relatively small studies based on liver histology have shown that liver fibrosis has a bidirectional nature in NAFLD patients
- However, large-scale data on AF progression and regression in diabetics are lacking

RESULTS

- A total of 50,695 subjects are included in the analysis with a mean age of 51.2±11.6 at BL and 59.6±11.6 years at LF
- Median duration between 1st and last available labs was 84.4 (24-199) months
- The prevalence of obesity, hypertension, chronic kidney disease (CKD), hyperlipidemia and coronary artery disease (CAD) increased during this period (p<0.001)
- During this period, 25.8% of subjects transitioned from non-AF to AF (progression), 6.4% transitioned from AF to no AF (regression) and, the rest stayed stable (Figure 1)

Clinical factors associated with transition from no AF to AF were female gender, African-American race, and the presence of baseline obesity, CKD or CAD

- In terms of T2D medications, the use of insulin was associated with progression to AF (OR (95% CI) =1.36 (1.29, 1.43), p<0.001), whereas the use of oral hypoglycemic agents was protective (OR (95% CI) =0.92 (0.87, 0.97), p=0.002) (Table 1)

The use of statins was associated with increased odds of AF regression (OR (95% CI) =1.12 (1.00, 1.26) (p=0.045) (Table 2)

METHOD

- Using ICD-9 codes, all T2D with the diagnosis of NAFLD at a large tertiary center were identified
- Patients with secondary causes of hepatic steatosis (excessive alcohol consumption, hepatitis C etc.) were excluded
- Non-invasive scores to assess AF were calculated at baseline (BL) and then recalculated using last follow up (LF) laboratory values to assess for the transition using the following cutoffs (AST/ALT > 1.4, APRI > 1.5, FIB-4 > 2.67, NFS > 0.676)
- Patients were divided into 4 groups as follows: No AF either times (BL and LF), AF both times, transition from no AF to BL to AF at LF, transition from AF to no AF
- Clinical factors are associated with transition in AF status were assessed

AIM

- To assess the transition of AF in a large cohort of diabetics and define factors associated with worsening or improvement in fibrosis

CONCLUSIONS

- We provide data on the natural history of AF transition in a large cohort of patients with T2D based on noninvasive scores
- AF regressed in 6% of the patients without any NAFLD-specific interventions despite increase in the prevalence of risk factors
- The effects of commonly used medications in diabetics on AF progression need further analysis

REFERENCES


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