Substantial Healthcare Utilization (HCU) and Costs Among Nonalcoholic Steatohepatitis (NASH) Patients with Comorbid Diabetes Mellitus (DM): Real-world Analysis of 2007-2015 US Medicare Data

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BACKGROUND

- Nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis (NASH) patients often present with related comorbidities such as diabetes mellitus (DM), chronic kidney disease (CKD), and hypertension.1
- However, data on linking healthcare resource utilization (HCRU) and healthcare costs in NASH/NAFLD patients with comorbid conditions is limited.

AIM

- To evaluate the impact of concurrent comorbid conditions on HCRU and healthcare costs among NASH/NAFLD patients with CC.

METHODS

- Design: This is a retrospective, observational cohort study (see Figure 1).
- Study population: NAFLD/NASH diagnosed patients (with ≥ 1 claim of C08-0-DM, B71-9, B71-0 or C70-70-DM diagnosis codes for NAFLD/NASH with ≥ 18 years who have Medicare fee-for-service (FFS) coverage.
- Exclusion criteria: Patients with other defined causes of liver disease were excluded (alcoholic, alcoholic liver disease, viral hepatitis, mumps hepatitis, HIV, Wilson’s disease, autoimmune hepatitis, chronic toxic hepatitis, Gaucher, lysosomal acid lipase deficiency, primary biliary cirrhosis, cholangiocarcinoma and primary sclerosing cholangitis).
- Index date: The first CC claim date was the CC index date.
- Patients - N/D (patients undergoing for at least 6 months prior to CC index date.
- Index date: The first CC claim date was the CC index date.
- Exclusion criteria: Patients with other defined causes of liver disease were excluded (alcoholic, alcoholic liver disease, viral hepatitis, mumps hepatitis, HIV, Wilson’s disease, autoimmune hepatitis, chronic toxic hepatitis, Gaucher, lysosomal acid lipase deficiency, primary biliary cirrhosis, cholangiocarcinoma and primary sclerosing cholangitis).

RESULTS

- Table 1. Patient Selection Flowchart

- Patients with incident CC* and Medicare coverage at least 6 months pre-index date had DM, 84% had CVD, and 88% had both hypertension and DM.

- Table 2. NAFLD/NASH CC Patient Demographics

- Median N/AFLD/NASH CC patients had a mean age of 67 (±10.9), a higher female proportion (63%), primarily whites (87%), and had high prevalence of DM (75%).

- Table 3. Annual Healthcare Resource Utilization for CC Patients

- Significant higher annual number of total visits (including inpatient, outpatient, and physician) for NAFLD/NASH CC patients with specific comorbidities. Patients with additional comorbidities of DM, CVD, or hypertension all had higher number of total visits.

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- Table 4. Annual Healthcare Costs for CC Patients

- Total annual healthcare costs for NAFLD/NASH patients significantly increased by 73% ($19,385 vs. $33,004) following CC diagnosis, primarily driven by higher insulin (16%) and outpatient (78%) costs.

- Table 5. Total Annual Healthcare Costs for CC Patients

- Total annual healthcare costs for NAFLD/NASH CC patients with additional comorbidities were significantly higher in DM, CVD, and hypertension patients all had higher annual healthcare costs (26% to 113%).

CONCLUSIONS

- This study of Medicare NAFLD/NASH CC patients found:
  - Along with NAFLD/NASH and advanced liver disease, these patients have a high prevalence of DM (75%) and additional comorbidities, such as CVD (84%), hypertension (64%), and hyperlipidemia (92%).
  - These patients experienced a significant increase in annual HCRU following CC diagnosis (20%) and utilization was significantly higher for patients with additional comorbidity conditions such as DM (21%) and CVD (87%) compared to patients without these additional comorbid conditions.
  - NAFLD/NASH patients’ annual healthcare costs significantly increased by over 70% following CC diagnosis, and were significantly higher for CC patients with additional comorbid conditions such as DM (28%) CVD (13%), and hypertension (84%) compared to patients without these conditions.
  - Early identification and effective treatment of NASH/NAFLD CC patients is needed to reduce the risk of disease progression and higher associated HCRU and costs.

REFERENCES


LIMITATIONS

- This study is based on claims data and was subject to data coding limitations, data entry error, and insurability of NASH/NAFLD.

DISCLOSURES

- Study funded by Gilead Sciences, Inc.