Long Term Care Services Use Among Medicare Patients with Overt Hepatic Encephalopathy

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BACKGROUND

- Overt Hepatic Encephalopathy (OHE) is a serious complication of cirrhosis, affecting 30%-50% of cirrhosis patients[1,2], and is associated with a substantial healthcare burden due to inpatient (IP) admissions and risk of recurrence
- Among Medicare patients at risk of OHE, there is little real-world data on the use of IP and long-term care (LTC) services, and Part D rifaximin 550mg twice daily (BID), which is indicated to reduce the risk of OHE recurrence

OBJECTIVE

- To describe the patient journey of adults with OHE in terms of LTC stays, including those within a skilled nursing facility (SNF) setting, and IP stays
- To describe the use of Part D rifaximin 550mg BID among adults with OHE covered by Medicare insurance

METHODS

Data Source & Study Design

- Retrospective claims-based analysis with 100% Medicare Research Identifiable Files (October 2015–December 2020)
- Adults (≥ 65) with OHE (ICD-10-CM Centers for Medicare & Medicaid Services general equivalence backward and forward mappings; K72.01, K72.11, K72.90, K72.91, K70.41, K71.11) who had an admission to SNF following the OHE diagnosis
- The first eligible SNF stay following the first observed OHE diagnosis was defined as the index SNF stay
- Outcomes were evaluated over the 12-month study period following the index SNF stay admission date

Measures & Analyses

- Length of stay and Part D rifaximin 550mg BID use were summarized for up to three SNF stays
- Healthcare setting patterns 30-days pre- and post- the index SNF stay were summarized
- Index SNF stay characteristics were reported stratified by Part D rifaximin 550mg BID use around the index SNF stay

RESULTS

TABLE 1. SAMPLE SELECTION

Patients with **≥2 diagnoses of cirrhosis/complications of cirrhosis** on distinct dates and **≥1 OHE diagnosis** any time	**N = 328,058**
Patients with **≥1 LTC stay** on/after the first OHE diagnosis	**N = 205,739 (62.7%)**
Patients with **≥1 SNF stay** with continuous healthcare enrollment (Part A, B, and D and not C) ≥6 months prior and ≥12 months following the first SNF stay (index SNF)	**N = 21,232 (10.3%)**
Patients with continuous eligibility for ≥30 days after the index SNF	**N = 20,899 (98.4%)**
Patients were **≥65 years old** as of the admission date of the index SNF stay	**N = 13,144 (62.9%)**

30.1% SNF
38.6% HHA
31.3% Hospice/LTHC

- LTC stays were common among the 328,058 adults identified with OHE, where 62.7% of adults with OHE had ≥1 LTC stay
- A total of 13,144 adults with OHE with an SNF stay following their first observed OHE diagnosis were included

Figure 1. Summary of SNF stays following OHE diagnosis

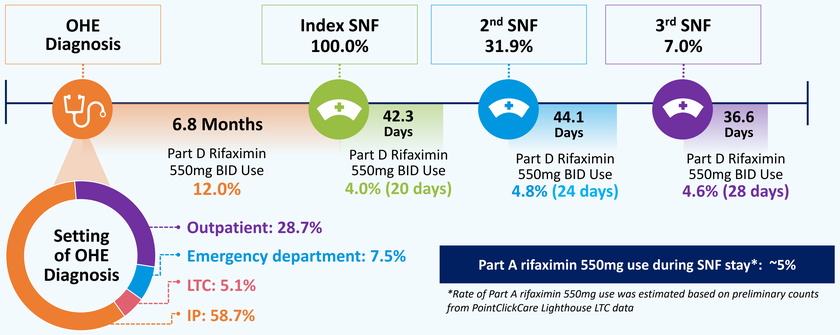
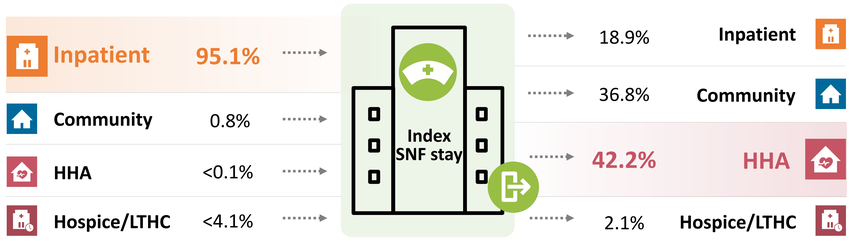


FIGURE 2. HEALTHCARE SETTING PATTERNS 30 DAYS PRE- AND POST- INDEX SNF STAY

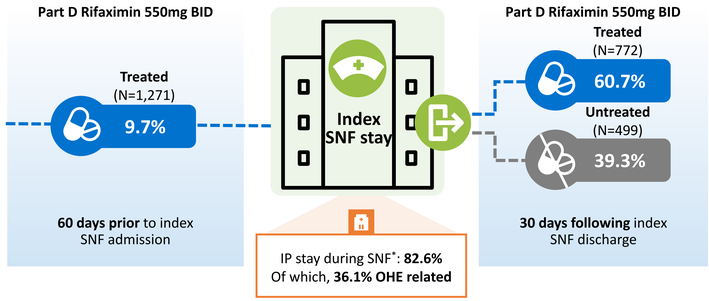


Setting patterns were determined by looking at all claims within 30 days pre- and post- the index SNF stay and applying the following hierarchy: LTHC > IP > Hospice > HHA> Community (i.e., only OP and/or ED visits or no healthcare utilization observed)

Abbreviations: *ED: emergency department; HHA: home health agency; IP: inpatient; LTHC: long-term hospital care; OP: outpatient*

- Adults with OHE were mostly commonly transferred to SNF from an IP stay (95.1%)
- Following SNF, 18.9% of patients were admitted to an IP stay and 2.1% were admitted to hospice or LTHC

FIGURE 3. PART D RIFAXIMIN 550MG BID USE PRE- AND POST- INDEX SNF STAY



*Defined as an IP stay with an admission and discharge date within the admission and discharge dates of the SNF stay. The IP stay could be in the same facility as the SNF stay or a different facility.

- Part D rifaximin 550mg BID use around the index SNF visit was not common, with only 5.9% of patients having Part D rifaximin 550mg BID prescriptions during both the pre- and post- index SNF stay periods

TABLE 2. CHARACTERISTICS OF INDEX SNF STAYS BY RIFAXIMIN 550MG BID USE

	Rifaximin pre- and post-index SNF visit N = 772	Rifaximin pre-index SNF visit only N = 499
Duration of index SNF stay (days), mean ± SD [median]	38.9 ± 43.7 [24.0]	40.1 ± 39.8 [26.0]
Patients with readmission to IP ≤30 days of SNF discharge	**153 (19.8%)**	**146 (29.3%)**
Patients with readmission to IP with OHE diagnosis[1] recorded at any position ≤30 days of SNF discharge	93 (12.0%)	78 (15.6%)
Patients with readmission to IP with OHE diagnosis[1] as the primary diagnosis ≤30 days of SNF discharge	60 (7.8%)	58 (11.6%)
Total healthcare costs[2] during 30 days of SNF discharge (2020 USD)	**$11,122 ± $16,615 [$6,529]**	**$15,082 ± $31,380 [$5,709]**

1. OHE diagnosis codes include the ICD-10-CM Centers for Medicare & Medicaid Services general equivalence backward and forward mappings: K72.01, K72.11, K72.90, K72.91, K70.41, K71.11
2. Total healthcare costs are the sum of payer and beneficiary costs. ~88% of total healthcare costs are attributed to payer costs

- Patients who received Part D rifaximin 550mg BID pre- and post- SNF visit had lower rates of readmission to IP within 30 days of SNF discharge compared to patients who only received rifaximin 550mg BID pre- SNF visits
- In the overall population, IP readmissions within 30 days of SNF discharge were commonly related to OHE (35.6%), with the majority of these OHE-related IP stays having OHE as a primary diagnosis. Other common primary reasons for IP readmission were other/unspecified cirrhosis of liver (10.7%) and other ascites (8.7%)

CONCLUSIONS

1. Adults with OHE commonly experience LTC stays and IP admissions, which represent a substantial healthcare burden
2. The use of Part D rifaximin 550mg BID during SNF stays is low, and the use of Part A rifaximin 550mg is estimated to be only around 5%
3. Following discharge from SNF, adults with OHE frequently experience IP readmissions, with the majority of these IP admissions being related to OHE
4. Improved access to rifaximin 550mg BID may help reduce the healthcare burden currently observed among patients with OHE in LTC settings

LIMITATIONS

- This claim-based study is subject to common limitations including billing inaccuracies and missing data
- Results pertain to a Medicare insured population and may not be representative of the US adults under 65 years of age
- Results are descriptive in nature, no statistical comparison was conducted

REFERENCES

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DISCLOSURE

ZH and CA are employees of Salix Pharmaceuticals. JM, PGS, AZ, FH, and AG are employees of Analysis Group, Inc., a consulting company that has provided paid consulting services to Bausch Health Companies, Inc., which funded the development and conduct of this study. AAD, BB, and GJ are employees of Bausch Health Companies, Inc. OO and DB are postdoctoral fellows with Rutgers Pharmaceutical Industry Fellowship Program.

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