Hospital and ER Use Among Newly Diagnosed Multiple Sclerosis Patients
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Methods

The purpose of this analysis was to describe the frequency and cost of MS-related hospital and emergency room (ER) utilization among newly diagnosed patients in the United States.

Methods


data source

- US patients with commercial coverage were selected from the Truven LifeHealth PharMetrics database, an anonymous, longitudinal, national managed care claims database that represents more than 30 million enrollees from more than 90 health plans.

analysis design

- Descriptive, retrospective pharmacy and medical claims analysis

include criteria

- The analysis used a longitudinal cohort—a cohort of newly diagnosed MS patients from January 1, 2004 to December 31, 2009, who met diagnostic criteria for MS during the study period and who had at least one pharmacy claim associated with a prescription drug for treatment of MS.

- The cohort was restricted to exclude the rare events and associated costs of a population of newly diagnosed MS patients.

hospitalization and ER identification

- The focus of the analysis was on the average cost per hospitalization or ER visit per event.

- The diagnosis was on the last medical record was assumed to be the discharge diagnosis for inpatient hospitalizations.

- The final diagnosis on the ER claim was assumed to be the reason for the visit.

- Only hospitalizations that began and ended in the observation window were included.

- Hospitalizations and ER visits meeting the following criteria were identified:
  - An MS-related diagnosis (multiple sclerosis [ICD-9-CM 340.0X] or relapsing-remitting multiple sclerosis [ICD-9-CM 340.1X]) in the same month or adjacent to the month of the ER visit.
  - A diagnosis based on literature combined with a guideline review for the diagnosis of MS.
  - For a potential MS symptom-related condition (Table 1), or
  - Had a code related to an MS-related complication or exacerbation (e.g., multiple sclerosis optic neuritis, multiple sclerosis uveitis, multiple sclerosis relapsing-remitting, multiple sclerosis relapsing-remitting).

hospitalization and ER visit costs

- The "ALLHCOMP" amount used was all costs calculated. The showed amount is in the period amount, plus any member liability, co-pay, deductibles, and co-payment.

- Costs included all types (i.e., facility, health professionals, surgical and diagnostic) associated with each unique hospitalization.

- Costs were adjusted to December 2010 using the medical services and supplies component of the Consumer Price Index, US Bureau of Labor Statistics.

- Hospitalizations were categorized by type of service and payer. Payer was used in the analysis to identify payer-related costs to patients with commercial coverage from the Truven LifeHealth PharMetrics database as whether they had at least one pharmacy claim associated with a prescription drug for treatment of MS.

- Facility Services (F) are the room and board charges of an institutional provider.

- Ancillary Services (A) are charges incident to the direct care of a patient (e.g., lab, x-ray).

results

- There were 31,995 adult patients with 12 months of continuous eligibility before and after index date.

- The cohort was 75% female and had an average age of 44.3 (SD 15.8) years.

- 11.7% of the sample had at least 1 hospitalization (any reason) in the period with index and index date (Table 2).

- The most common diagnoses in the period were as follows:
  - 3.3% MS.
  - 1.13 (0.24) hospitalizations, 0.87 (0.38) days
  - Anxiety-related condition: 1.46 (0.55) hospitalizations, 0.83 (0.34) days

discussion

- In the in-patient period, 19.5% of MS patients had at least 1 hospitalization for an average cost of 5.3% of MS patients had at least 1 hospitalization diagnosis that represented a potential relapse.

- Inpatient hospitalization costs for MS patients during the post-index period ranged from $31,100 to $50,100 per patient for rehabilitation hospitalizations.

- The cost of a potential relapse hospitalization ranged from approximately $14,000 to $17,000.

- The cost of ER visits ranged from approximately $450 to $700 and did not have substantial variation by diagnoses.

- There were a substantial number of hospitalizations for symptom-related conditions that were not be recognized as being related to MS.

- Rehabilitation hospitalizations were identified as being relatively common and, when they occur, may be any experience.

limitations

- This analysis used a non-experimental design. Results may not be generalizable to other populations.

- Presence of a symptom, rehabilitation or other symptom-related diagnoses does not ensure that it was related to MS or an MS relapse.

- Other symptoms that could be related to an MS relapse, such as urinary tract infections or disorders, were not considered in this analysis.

- The claims data used for this study were not specifically collected for hospitalizations and ER visits.

- Coding may not always be accurate and there can be missing information that limits the inferences that can be made from the data.

conclusions

- Costs for hospitalization and ER visits among MS patients were substantial and are comparable to a previous US analysis that illustrated the significant difference in costs between newly diagnosed MS patients and a control group.

- Inclusion of a symptom and symptom-related codes can account for an under-recognized proportion of expenditures.

Acknowledgments

The authors would like to thank Teresa Wright, independent communications consultant, for assistance in the graphic design of this poster.

References

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