A COMPARISON OF ANNUAL HEALTHCARE COSTS AND UTILIZATION BETWEEN ADULT PATIENTS WITH LONG- AND SHORT-ACTING ANTI-EPILEPTIC MONOTHERAPY

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ABSTRACT

BACKGROUND

- Epilepsy, the 6th most common neurological disorder, affects about 2.2 million people in the United States and accounts for $30 billion in direct medical costs
- A variety of AEDs and other therapies are available to treat epilepsy. However, adherence to antiepileptic drugs (AEDs) is imperfect; lack of adherence has been linked to increased healthcare utilization and cost.
- There has been hypothesis that patients who are non-adherent to therapy may experience breakthrough seizures. It is important to assess whether AEDs with long duration of action might mitigate the impact of poor adherence on healthcare costs.

OBJECTIVE

- To compare the healthcare costs and utilization between patients treated with long-acting (LA) and short-acting (SA) AED monotherapy

METHODS

- This was a cross-sectional retrospective cohort study utilizing data from a commercial HIPAA-compliant administrative claims database.
- Study population included adults (≥18 years old), diagnosed with epilepsy, and treated with LA or SA AED monotherapy during calendar year 2011 (study period).
- AEDs were grouped into those with increased half-life or longer duration of action (SA) or extended/controlled release (LA) AEDs
- LA AEDs: oxcarbazepine ER, lamotrigine ER, levetiracetam ER, topiramate ER, divalproex ER, and gabapentin ER.
- SA AEDs: levetiracetam, lamotrigine, valproic acid, carbamazepine, topiramate, phenytoin, vigabatrin, FGAL, gabapentin, and tiagabine.

RESULTS

- A lower proportion of LA users had any epilepsy-related tests.
- To compare the healthcare costs and utilization between patients treated with long-acting (LA) and short-acting (SA) AED monotherapy.

- Objective

Clarity of Type of AED: Mean overall costs were lower by $686 (SD: 0.13; median: 0.959) in SA users vs. LA users $2,932 for overall costs, including $1,586 less in non-pharmacy costs ($1,740 for epilepsy related costs). LEV ER, DVP ER, oxcarbazepine ER, topiramate ER, gabapentin ER, valproic acid, carbamazepine, lamotrigine, phenytoin, vigabatrin, FGAL, gabapentin, tiagabine.

Exclusion Criteria:
- ≥18 years old at the end of the study period.
- AND ≥18 years at the end of the study period.
- Study Cohort:
- LA vs. SA: PTE, ER, CBZ, TMF, DVP ER, DVP PB, LEV ER, LEV PB, and ESR.
- SA users = ≥2+ medical claims (>30 days apart) with epilepsy diagnosis (ICD-9-CM 345, 345.1, 789.35) in any diagnosis field, with 1 claim occurring in the study period and 1 in the prior year.
- ≥2 pharmacy claims or AEDs in the study period.

CONCLUSIONS

- Although MPR was similar in LA and SA groups, patients treated with LA AED monotherapy incur a lower economic burden than those treated with SA AED monotherapy.
- Adherence may also be impacted by convenience LA-AEDs have fewer dose per day relative to the SA-AEDs.
- Use of AEDs with extended duration of action may decrease healthcare use and lower costs.
- Future studies should assess the impact of duration of action on outcomes in combination therapy in adolescents, and also examine reasons for the observed cohort differences in adherence to antiepileptic drugs and utilization of medical care.

REFERENCES


LIMITATIONS

- MPR captures the rate of the AED use. Missing or delayed adherence and other non-adherence behaviors are not captured by MPR, but may affect outcomes.
- Claims data are collected for payment and do not capture disease severity.
- The study may not be generalizable to a non-managed care population.
- Epilepsy-related costs account for less than 50% of total observed costs which suggests that comorbid conditions may impact the costs and that epilepsy-related utilization was underestimated.

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