Incremental Clinical and Economic Burden of Uncontrolled Partial-Onset Seizures in a Privately-Insured Population

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OBJECTIVES: To assess clinical and economic consequences attributable to loss of seizure control in privately-insured patients with partial-onset seizures (POS).

METHODS: Health insurance claims from 58 self-insured US companies between 1999 and 2009 were analyzed. Adult patients with POS (ICD-9: 345.4x, 345.5x, or 345.7x) receiving antiepileptic drugs (AED) were selected. A retrospective matched-cohort design was used to classify patients into cohorts of "uncontrolled POS" (≥2 AED therapy changes, followed by ≥1 epilepsy-related inpatient/ER visit within 1 year; and ≥ 1 diagnosis of POS) and "well-controlled POS" (no AED change and no epilepsy-related inpatient/ER visit). Patients in the well-controlled POS group were matched 1:1 with uncontrolled POS patients via propensity score matching. Matched cohorts were compared for healthcare resource use, morbidity, and costs. Statistical differences between cohorts were assessed using multivariate regressions, adjusted for demographics, baseline AED use, comorbidities and costs.

RESULTS: From 14,377 eligible patients, 279 with uncontrolled POS (mean age=53.4, 55.6% female) were identified and matched 1:1 with well-controlled POS patients. Compared to the well-controlled POS group, the uncontrolled POS cohort had significantly more hospitalizations (adjusted rate ratio [ARR] (95% confidence interval [CI])=7.01 [5.97-8.82]), longer hospital stays (ARR (95% CI)=10.43 [9.69-11.23]), more ER visits (ARR (95% CI)=4.99 [4.25-5.87]), and more frequent outpatient visits (ARR (95% CI)=1.58 [1.55-1.62]). Fractures occurred three times more often in the uncontrolled POS group (ARR (95% CI)=3.43 [2.77-4.23]), while head injuries were twice as frequent (ARR (95%CI)=2.28 [2.02-2.56]). The uncontrolled POS group incurred nearly $15,000 increase in direct healthcare costs (adjusted cost difference (95% CI)=$14,966 [$11,695-$18,944]) versus the well-controlled group. Higher direct costs for the uncontrolled POS group were observed consistently across prescription drug and medical service categories.

CONCLUSIONS: Uncontrolled POS was associated with significantly higher rates of healthcare resource utilization, more frequent occurrence of fractures and head injuries, and increased direct health care costs.

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