Pulmonary Complications with Initial Anti-seizure Medications Used for Lennox-gastaut Syndrome

Abstract number : 3.42
Submission category : 7. Anti-seizure Medications / 7D. Drug Side Effects
Year : 2024
Submission ID : 577
Source : www.aesnet.org
Presentation date : 12/9/2024 12:00:00 AM
Published date :

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Rationale: Lennox Gastaut Syndrome (LGS) patients have increased risk of pulmonary complications for multiple reasons. This is a descriptive analysis of pulmonary complications around the time of diagnosis with anti-seizure medications (ASMs) used to initially treat LGS.

Methods: The University of Florida database was reviewed for patients with diagnosis of LGS. 58 patients were diagnosed by a clinician. A chart review of ASMs used to initially treat LGS which included clobazam (CBZ), valproic acid (VPA), cannabidiol (CBD), perampanel, and rufinamide. Single and combination ASM treatments for LGS with CBZ, VPA, and CBD were analyzed. Due to minimal data, the other medications were not evaluated. Minor and severe pulmonary complications were assessed 6 months prior and 6 months after diagnosis of LGS.

Results: 6 months prior to LGS diagnosis the patients were on the following ASM regimen: 24% (n=14) on CBZ, 17% (n=10) on VPA, 7% (n=4) on CBD, 19% (n=11) on CBZ and VPA, 7% (n=4) on CBD and CBZ, 2% (n=1) on CBD and VPA, and 24% (n=14) on none of the medications. 72% had no documented pulmonary complications, 10% had a mild pulmonary complication, and 17% had a severe pulmonary complication; 95% CI for having pulmonary complication = [17%,41%]. Of those patients on CBZ, 38% had a mild or severe pulmonary complication compared to 17% who were not on CBZ. Of those patients on VPA, 18% had a mild or severe pulmonary complication compared to 33% who were not on VPA. Of those patients on CBD, 22% had a mild or severe pulmonary complication compared to 29% who were not on CBD. 6 months after LGS diagnosis the patients were on the following ASM regimen: 22% (n=13) on CBD and CBZ, 17% (n=10) on CBZ and VPA, 16% (n=9) on CBZ, 16% (n=9) on all three medications (CBZ, CBD, VPA), 10% (n=6) on VPA, 9% (n=5) on CBD, 7% (n=4) on none of the medications, and 3% (n=2) on CBD and VPA. 74% had no documented pulmonary complications, 5% had a mild pulmonary complication, and 21% had a severe pulmonary complication; 95% CI for having pulmonary complication = [15%,39%]. Of those patients on CBZ, 27% had a mild or severe pulmonary complication compared to 24% who were not on CBZ. Of those patients on VPA, 30% had a mild or severe pulmonary complication

compared to 23% who were not on VPA. Of those patients on CBD, 24% had a mild or severe pulmonary complication compared to 28% who were not on CBD.

Conclusions: Pulmonary complications are common in LGS patients around their time of diagnosis regardless of the ASMs used. Further prospective studies are needed for further investigation.

Funding: N/A

Anti-seizure Medications