**Supplemental Tables**

|  |  |
| --- | --- |
| **Table S1: Definition of EEG patterns** | |
| **EEG patterns** | **Definition** |
| Alpha | 8-13 Hz activity |
| Theta | 4-8 Hz activity |
| Delta | 0.1-4 Hz activity |
| Attenuation | EEG activity <50% of background but >10 μV |
| Suppression | EEG activity with voltage <10 μV |
| Discontinuous | Periods of suppression or attenuation occupying 10-49% of the EEG |
| Burst suppression | Periods of suppression occupying 50-99% of the EEG |
| Burst suppression with identical bursts | Burst suppression with stereotyped bursts of similar morphology |
| Burst suppression + HEB (Highly Epileptiform Bursts) | Burst suppression with epileptiform discharges in >50% of bursts |
| Flat EEG/ Isoelectric EEG | EEG activity <2 μV (absence of discernible cerebral activity) |
| Reactivity | Change in EEG activity to external stimulation |
| Absent reactivity | No change in EEG frequency or amplitude with stimulation |
| Seizure | Abnormal paroxysmal EEG pattern with evolution in amplitude, frequency, and/or spatial distribution, defined as either epileptiform discharges averaging >2.5 Hz for ≥10 seconds or any pattern with definite evolution lasting ≥10 seconds. |
| Status epilepticus | Electrographic or electroclinical seizure lasting ≥10 continuous minutes or for a total duration of ≥20% of any 60-minute period of recording. |
| Myoclonic Status epilepticus | Status epilepticus associated with myoclonic jerks |
| GPD (Generalized Periodic Discharges) | Periodic discharges occupying with bilateral, synchronous, and symmetric distribution |
| LPD (Lateralized Periodic Discharges) | Periodic discharges with lateralized amplitude, morphology, or distribution |
| LRDA (Lateralized Rhythmic Delta Activity) | Rhythmic delta activity with lateralized distribution |
| GRDA (Generalized Rhythmic Delta Activity) | Rhythmic delta activity with symmetric distribution |
| SED (Sporadic epileptiform Discharges): | Nonrhythmic and nonperiodic epileptiform spikes or sharp waves occurring at <1/second. |
| SIRPDs (Stimulus-Induced Rhythmic, Periodic, or Ictal Discharges) | Periodic, rhythmic, or ictal-appearing discharges induced by external stimuli |
| BIRDs (Brief Potentially Ictal Rhythmic Discharges) | Focal or generalized rhythmic activity >4 Hz lasting <10 seconds with evolution, similarity to epileptiform discharges/seizures in the same patient, or sharp contour. |
| BIPD (Bilateral independent Periodic Discharges) | Periodic discharges that occur independently on the right and left hemisphere |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table S2: Anti-seizure Medications** | | | | | | | | | | | | | | | | | | | | |
|  | **0-24hrs** | | | | | **24-48hrs** | | | | | **48-72hrs** | | | | | **72hrs-rest of EEG** | | | | |
| **Drug** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** |
| Levetiracetam | 60 | 34% | 117 | 66% | 177 | 59 | 30.4% | 135 | 70% | 194 | 45 | 29% | 108 | 71% | 153 | 30 | 26% | 84 | 0.7368 | 114 |
| Phenytoin-fosphenytoin | 3 | 23% | 10 | 77% | 13 | 3 | 25.0% | 9 | 75% | 12 | 3 | 17% | 15 | 83% | 18 | 2 | 13% | 13 | 0.8667 | 15 |
| Valproic acid | 13 | 45% | 16 | 55% | 29 | 14 | 40.0% | 21 | 60% | 35 | 8 | 24% | 26 | 76% | 34 | 6 | 21% | 22 | 0.7857 | 28 |
| Lacosamide | 6 | 46% | 7 | 54% | 13 | 6 | 46.2% | 7 | 54% | 13 | 5 | 42% | 7 | 58% | 12 | 4 | 33% | 8 | 0.6667 | 12 |
| Clonazepam | 0 | 0% | 3 | 100% | 3 | 0 | 0.0% | 3 | 100% | 3 | 0 | 0% | 4 | 100% | 4 | 0 | 0% | 2 | 1 | 2 |
| Lorazepam | 9 | 35% | 17 | 65% | 26 | 10 | 45.5% | 12 | 55% | 22 | 8 | 44% | 10 | 56% | 18 | 4 | 80% | 1 | 0.2 | 5 |
| Lamotrigine | 1 | 33% | 2 | 67% | 3 | 2 | 40.0% | 3 | 60% | 5 | 2 | 40% | 3 | 60% | 5 | 1 | 33% | 2 | 0.6667 | 3 |
| Clobazam | 2 | 67% | 1 | 33% | 3 | 4 | 80.0% | 1 | 20% | 5 | 3 | 50% | 3 | 50% | 6 | 0 | 0% | 4 | 1 | 4 |
| Phenobarbital | 2 | 67% | 1 | 33% | 3 | 5 | 83.3% | 1 | 17% | 6 | 5 | 71% | 2 | 29% | 7 | 3 | 50% | 3 | 0.5 | 6 |
| Other\* | 4 | 29% | 10 | 71% | 14 | 8 | 40.0% | 12 | 60% | 20 | 7 | 47% | 8 | 53% | 15 | 5 | 50% | 5 | 0.5 | 10 |
| \*Gabapentin, Divalproex, Oxcarbazepine, Topiramate, carbamazepine, diazepam, zonisamide, magnesium sulfate  Sur = Survival | | | | | | | | | | | | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table S3: Anesthetic medications** | | | | | | | | | | | | | | | | | | | | |
|  | **0-24hrs** | | | | | **24-48hrs** | | | | | **48-72hrs** | | | | | **72hrs-rest of EEG** | | | | |
|  |
| **Drug** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** | **Sur** | **Sur %** | **Died** | **Died %** | **Total** |  |
| Propofol | 231 | 36.44% | 403 | 63.56% | 634 | 219 | 36.68% | 378 | 63.32% | 597 | 146 | 36.59% | 253 | 63.41% | 399 | 62 | 29.95% | 145 | 70.05% | 207 |  |
| Midazolam | 50 | 39.37% | 77 | 60.63% | 127 | 39 | 31.71% | 84 | 68.29% | 123 | 22 | 25.00% | 66 | 75.00% | 88 | 16 | 25.00% | 48 | 75.00% | 64 |  |
| Fentanyl | 143 | 37.05% | 243 | 62.95% | 386 | 153 | 38.54% | 244 | 61.46% | 397 | 92 | 35.38% | 168 | 64.62% | 260 | 39 | 28.68% | 97 | 71.32% | 136 |  |
| Dexmedetomidine | 20 | 58.82% | 14 | 41.18% | 34 | 33 | 64.71% | 18 | 35.29% | 51 | 29 | 67.44% | 14 | 32.56% | 43 | 18 | 54.55% | 15 | 45.45% | 33 |  |
| Other\* | 8 | 32.00% | 17 | 68.00% | 25 | 11 | 39.29% | 17 | 60.71% | 28 | 8 | 40.00% | 12 | 60.00% | 20 | 5 | 35.71% | 9 | 64.29% | 14 |  |
| \* Hydromorphone, ketamine, etomidate, oxycodone | | | | | | | | | | | | | | | | | | | | |  |