Pharmacotherapeutic Management of Insomnia in Patients Undergoing Electroconvulsive Therapy

Julianna Gotha, B.Sc., Pharm.D; Tamara Mihic, B.Sc.(Pharm), ACPR, Pharm.D; Julia Fan, B.Sc.(Pharm), ACPR; Fidel Vila-Rodriguez, MD, PhD, FRCPC, FAPA; Andrea Wan, B.Sc.(Pharm), ACPR, Pharm.D

Background

- Electroconvulsive therapy (ECT) is indicated for the treatment of psychiatric and/or neurologic disorders [1]
- The efficacy of ECT is dependent on several factors including seizure threshold, electric stimuli, and concurrent medication use [2]
- Sedating psychotropic medications can inhibit adequate seizure[1]
- Different strategies in clinical practice around medication use prior to ECT have been utilized with unclear evidence as to the effect of these strategies on quality of seizure, sleep quality, adverse events

Objectives and Outcomes

- To characterize prescribing practices with respect to insomnia-related pharmacotherapy in patients with insomnia who have received ECT treatment at St. Paul's Hospital (SPH) and Mount Saint Joseph (MSJ) Hospital
- Primary outcome:
  - The proportion of patients who had modifications to insomnia and/or sedating psychotropic medications prior to ECT
- Secondary outcomes:
  - Proportion of patients who experienced a sleep disturbance the night before ECT
  - Proportion of patients who experienced a suboptimal seizure
  - Proportion of patients who experienced an ECT-related adverse event

Methods

- Retrospective chart review of adult patients who were admitted to SPH and MSJ and received ECT between November 16, 2019 and October 16, 2020
- Sedating psychotropic medications included in the study were categorized in alignment with the Vancouver Coastal Health formulary
- Modifications to sedating medications scheduled the night prior to ECT were implemented within 24 hours pre-ECT or earlier
- Post-ECT adverse events were documented within 12 hours post-ECT and did not occur in the 24 hours pre-ECT and/or documented as being attributed to ECT

Table 1: Patient characteristics

	Patients (N=43)
Age (years), median (range)	69 (20-89)
Sex, n (%)	
Female	30 (69.8)
Past medical history, n (%)	
Insomnia	29 (67.4)
Cardiovascular disease	22 (51.2)
Substance use disorder	8 (18.6)
Psychiatric medical history, n (%)	
Depression	24 (55.8)
Schizophrenia	13 (30.2)
Anxiety	11 (25.6)
Bipolar disorder	8 (18.6)
Pharmacotherapy, n (%)	
Benzodiazepines	32 (74.4)
Zopiclone	12 (27.9)
Melatonin	11 (25.6)
Second & third generation antipsychotics	30 (69.8)
First generation antipsychotics	29 (67.4)
Antidepressants	25 (58.1)
Lithium	11 (25.6)
Anticonvulsants	9 (20.9)
Muscle relaxants	1 (2.3)

Figure 1: Proportion of patients with at least one medication modification

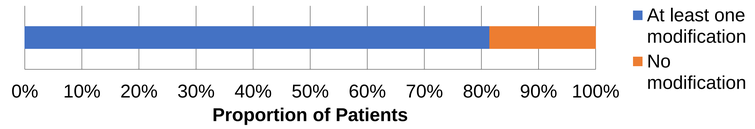


Figure 2: Proportion of pharmacotherapy that underwent modification

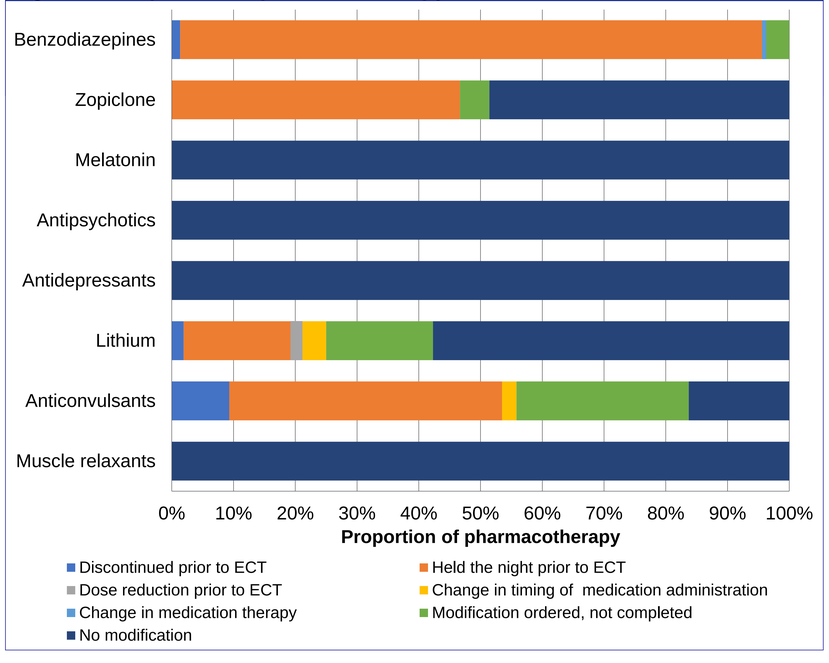


Figure 3: Proportion of patients with sleep disturbance or suboptimal seizure

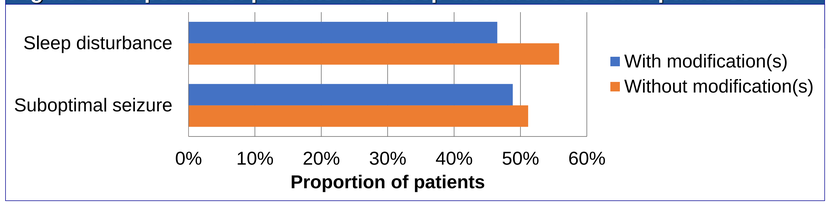
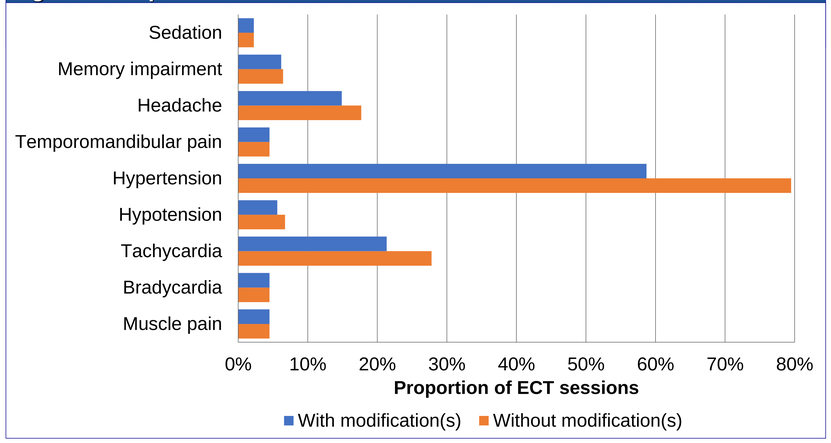


Figure 4. Proportion of ECT sessions where an adverse effect occurred



Limitations

- Retrospective study design and small sample size
- Documentation of insomnia diagnosis, sleep status, seizure outcome(s) was inconsistent
- Sleep status not documented in 40.2% of nights prior to ECT
- Capture of intentional medication modifications and adverse events was limited to chart documentation

Conclusions

- Majority of patients had at least one medication modification
- In the absence of a medication modification, a greater proportion of patients experienced at least one sleep disturbance
- Proportion of patients with at least one suboptimal seizure was similar with or without medication modification(s)
- Proportion of ECT sessions where either headache, hypertension, hypotension or tachycardia occurred at least once was greater in the absence of a medication modification

References

1. Procyshyn RM, Bezchlibnyk-Butler KZ, Jeffries JJ. Clinical Handbook of Psychotropic Drugs. 23rd ed. Vancouver, British Columbia: Hogrefe; 2019.
2. Zolezzi M. Medication management during electroconvulsant therapy. Neuropsychiatric disease and treatment. 2016;12:931-939.

fraserhealth Better health. Best in health care.
Vancouver CoastalHealth Promoting wellness. Ensuring care.
Providence HEALTH CARE How you want to be treated.
Provincial Health Services Authority Province-wide solutions. Better health.