Characterization of Psychotropic PRN Medications in a Psychiatric ICU

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Background

- Pro re nata (PRN) antipsychotics and benzodiazepines routinely used to rapidly stabilize acutely agitated patients[1]
- Limited evidence to guide pharmacological treatment[2]
- Non-pharmacological de-escalation strategies should be considered before administering medications[3]
- Incomplete documentation of efficacy and safety of PRN administration[1]
- PRN antipsychotics increase risk of adverse effects secondary to polypharmacy and high daily dose exposure[4]
- PRN benzodiazepines have potential for tolerance, sedation and dependence[3]

Objectives

- **Primary**:
  - Describe the prescribed medication, dosing range, route, frequency, indication, and documentation practices for PRN psychotropic medications
- **Secondary**:
  - Describe non-pharmacological interventions used for acute stabilization
  - Describe whether total daily PRN dose of antipsychotic drugs is within Health Canada (HC) limits
  - Describe adverse effects and events

Methods

- **Design**: Retrospective cohort chart review
- **Inclusion criteria**:
  - Age ≥18 years
  - Admitted to psychiatric intensive care unit (ICU) at Surrey Memorial Hospital (SMH) between June and September 2018
  - Received PRN antipsychotics and benzodiazepines
- **Exclusion criteria**:
  - Admitted to SMH Emergency Department (ED) at any point during psychiatric ICU admission
- **Sample size**:
  - Convenience sample, selected in reverse chronological order
- **Definitions**:
  - Documentation: within 4 hours of dose given in nursing notes
  - Adverse effect: Naranjo scale (documented if ≥4 “possible”)
  - Adverse event: unintended patient harm or staff harm occurring within 4 hours prior to administration of PRN medication

Results

Table 1: Patient Characteristics

	N=32
Male, n (%)	22 (69)
Age (years), median (IQR)	34 (27-50)
Psychiatric ICU length of stay (days), median (IQR)	14 (9-20)
Admitting Diagnosis, n (%)	
Schizoaffective related disorder	11 (34)
Schizophrenia	8 (25)
Bipolar 1 disorder	4 (13)
Drug induced psychosis	3 (9)
Other	6 (19)
Illicit substance use, n (%)	19 (59)
Adverse events*, n (%)	6 (19)
Total number of events	14

*Mostly related to staff harm; none resulted in serious injury

Table 2: Characteristics of Psychotropic PRN Orders

Total number of psychotropic PRN orders	**N=123**
Number of PRN orders per patient, median (IQR)	3 (2-3)
24 hour maximum prescribed, n (%)	121 (98)
Frequency prescribed, n (%)	119 (97)
Prescriber indication, n (%)	41 (33)
Agitation and/or anxiety	25 (20)
Agitation/anxiety or insomnia	7 (6)
If refuse regular medication	5 (4)
Other	4 (3)
Antipsychotic PRN orders exceeding total daily HC dose limits, n (%)	10 (8)

Table 3: Characteristics of Psychotropic PRN Administrations

Total number of psychotropic PRN administrations	**N=1179**
Number of PRNs administered per patient, median (IQR)	27 (12-53)
PRNs documented for effectiveness, n (%)	795 (67)
PRNs documented for nursing rationale, n (%)	1164 (99)
Non-pharmacological method documented prior to PRN administration, n (%)	559 (47)
Two or more techniques	161 (14)
Redirection	119 (10)
Clear mutual expectations	92 (8)
Education/teaching	61 (5)
Reassurance	41 (3)
Listening techniques	37 (3)
Other	48 (4)

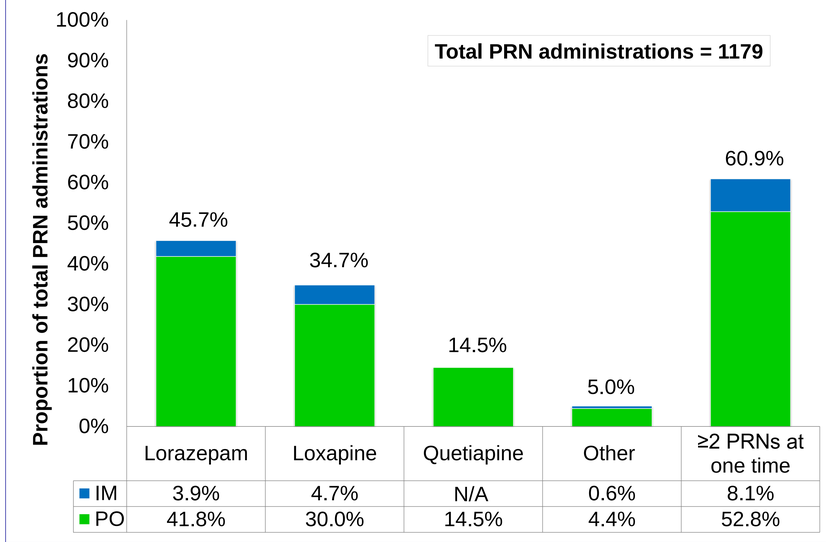

Figure 1: Proportion of Psychotropic PRN Administrations

Limitations

- Single centre, retrospective design
- Total daily dose that included regular antipsychotic administrations in addition to PRN antipsychotics was not assessed
- De-escalation strategies that did not result in PRN administration were not assessed
- Exclusion of patients who were admitted to ED may have led to missed adverse effects

Conclusions

- PRN psychotropic medications administered throughout the psychiatric ICU admission
- There is potential to cause harm due to exceeding 24 hour Health Canada dose maximums for antipsychotics
- Non-pharmacological de-escalation methods and documentation of effectiveness following PRN administration could be optimized
- Further education needed regarding the benefits of prescribing specific indications with each PRN order
- Further studies are needed in assessing appropriateness of psychotropic PRN medications

References

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4. Martin K, Arora V, Fischler I, Tremblay R. Descriptive analysis of pro re nata medication use at a Canadian psychiatric hospital. Int J Ment Health Nurs. 2017;26:402-8.

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