Managing GHB withdrawal with early baclofen loading: A retrospective case series

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Krista J Siefried, William Zhou, Nadine Ezard, Christopher Tremonti

Presented by
Dr Krista Siefried
National Centre for Clinical Research on Emerging Drugs (NCCRED)
St Vincent's Hospital Sydney
National Drug and Alcohol Research Centre, University of New South Wales
NSW Drug and Alcohol Clinical Research and Improvement Network

NCCRED National Centre for Clinical Research on Emerging Drugs

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Acknowledgement

Of Country

I acknowledge that the research that I am presenting took place on Gadigal Country of the Eora Nation, and recognise the strength and resilience of those people who maintain a continuing connection to the lands and waters –
a right and responsibility that was never ceded

Of Lived and Living Experience

I acknowledge the contributions of people with lived and living experience to the research I am presenting today. They bring knowledge and wisdom along with a commitment to altruism through research

Funding and Conflicts

- KJS is employed by UNSW and SVHS, and has received research funding from the National Health and Medical Research Council (NHMRC) Australia

- This research received no funding

Background

Effects

- A naturally occurring neurotransmitter, gamma-hydroxybutyrate (GHB) is both a precursor and metabolite of GABA[1]
- Gamma-hydroxybutyrate (GHB) and precursors gamma-butyrolactone (GBL) and 1,4-butanediol (1,4-BD) can cause stimulant effects such as euphoria and disinhibition[2]
- At higher doses GHB becomes a potent central nervous system depressant[1]

1. Schep et al, Clin Toxicol, 2012; 2. Freestone et al, IJDP, 2022

Prevalence

- In the most recent Australian household surveys (2022-23) no changes were reported to 2019 data - approximately 1% (≥14 years) had consumed GHB[1]

- Rates amongst LGBTQ people have been documented as 20-54 times greater[2,3]

- In Australia, GHB has been associated with sex based sociality, and predominantly described amongst men who have sex with men[4] although recent data demonstrates emerging use in other communities[5]

1. AIHW, NDHS, 2024; 2. Hammoud et al, Sex Heal, 2018; 3. Mooney-Somers et al, SWASH, 2020; 4. Tay et al, Subst Abuse Rehabil, 2022; Siefried et al, Addiction, 2025.

GHB dependence and withdrawal

- Regular consumption of GHB or its analogues (GBL, 1,4BD) may result in dependence, complicated by a withdrawal syndrome[1]
  - Less likely if client has experienced >24hours without GHB in prior week

- Consuming higher amounts more frequently (e.g. waking in the night to dose) or longer duration of use have been associated with complicated withdrawal (e.g. delirium)

1. American Psychiatric Association, DSM 5

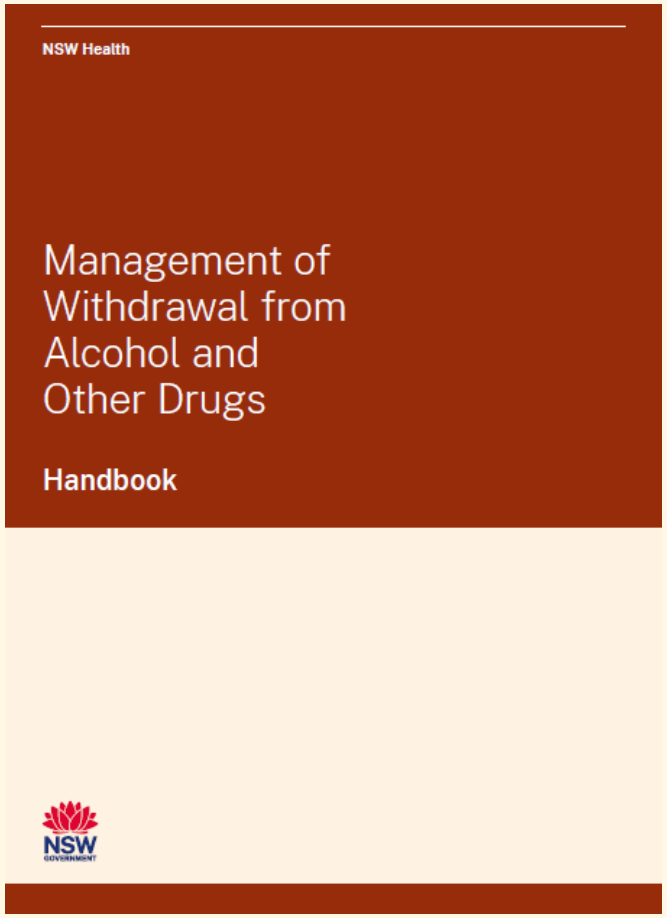
GHB dependence and withdrawal

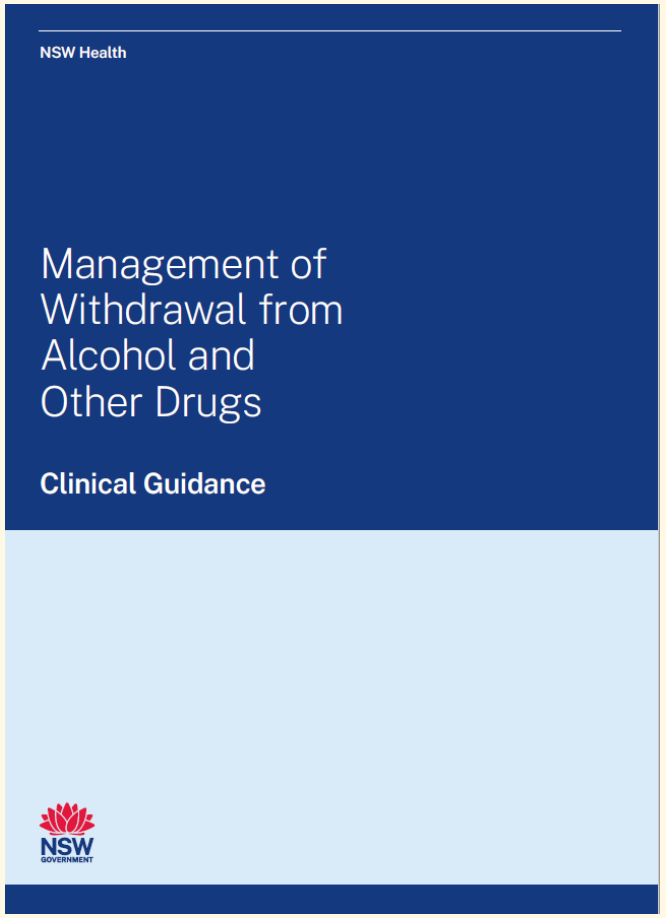
- Onset of withdrawal can be rapid – commencing within an hour of discontinuation and peaking at 24h[2]
  - Can last up to 3 weeks

- GHB withdrawal symptoms are not well described[1], severe and complicated withdrawal has been characterised by[3]:
  - agitation
  - auditory and/or visual hallucinations
  - Delirium
  - tremor
  - seizures

1. American Psychiatric Association, DSM 5; 2. Schep et al, Clin Toxicol, 2012; 3. Wolf et al, J Clin Med 2021

How do we manage GHB withdrawal?





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How do we manage GHB withdrawal?

9.3.4 Medication

The treatment of GHB withdrawal is primarily supportive, including the administration of medication to control agitation, delirium and seizures, with careful monitoring for respiratory depression and potential complications.

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*Both documents go on to review recommendations for benzodiazepines (highest level of supporting evidence outside of sodium oxybate), baclofen as **a concomitant medication**, and then antipsychotic medications (olanzapine, quetiapine)*

How do we manage GHB withdrawal? - SVHS

Ideally, commence before withdrawal symptoms start

Diazepam (*as soon as possible relative to last GHB*):

- Load: 10mg q1-2h [to 60mg/lightly sedated]
- Maintenance: 10-20mg q1h [max 120mg/24h]

Baclofen (*moderate to severe withdrawal expected*)

- 10-25mg TDS (can be ceased prior to discharge, can become a longer term maintenance)

Phenobarbital (*considered with ICU review if patient requires >200mg benz0/24hr*)

- Load: 30mg/hr po [max 120mg] until lightly sedated
- Maintenance: 30mg po q2h [max 240mg]
- IV: ICU consult with bolus and wean

Prior studies

Psychopharmacology (2023) 240:127–135
https://doi.org/10.1007/s00213-022-06283-6

ORIGINAL INVESTIGATION

Check for updates

Inpatient GHB withdrawal management in an inner-city hospital in Sydney, Australia: a retrospective medical record review

Krista J. Siefried[1,2,3] · Georgia Freeman[3] · Darren M. Roberts[4,5,6] · Rhiannon Lindsey[7] · Craig Rodgers[3] · Nadine Ezard[1,2,3,8] · Jonathan Brett[4,5,8]

Drug and Alcohol REVIEW APSAD

Case Series

Phenobarbital to manage severe gamma-hydroxybutyrate withdrawal: A case series

Georgia Freeman, Krista J. Siefried, Darren M. Roberts, Craig Rodgers, Una Nic Ionmhain, Jay Ramanathan, Nadine Ezard, Jonathan Brett

Baclofen

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Early baclofen load

- Baclofen is a GABA-B receptor agonist
- Licensed in Australia for muscle spasm in MS, stiff limbs, bladder dysfunctions
- Used off-label for alcohol withdrawal
- Theoretically safe alternative to GHB, or treatment with high dose benzodiazepines

Methods

- Case series of 2024 GHB withdrawal admissions

- Patients admitted for inpatient GHB withdrawal who received early (or a “loading dose”) baclofen
  - 20mg q 1-2 hours until 60mg / light sedation

- Cases were assessed for: demographics, patterns of GHB use, medical and psychiatric comorbidities, medications administered, physiological response (heart rate, BP), delirium, ICU

Early baclofen load

- 14 cases (n=12)
  - mean 33.5 years, 67% women
- 13 (93%) reported daily GHB use
- Median GHB use 4 months (1 month – 25 years)
- n=12 (100%) methamphetamine use
- n=7 (58%) self-reported anxiety disorder

Early baclofen load

- Inpatient admission: 0-8 days

- All cases received loading dose of 60mg baclofen
  - One case (7%) was discharged on baclofen

- All cases received concomitant diazepam and olanzapine
  - 10-140mg diazepam
  - 2.5-40mg olanzapine

Early baclofen load

- n=7 (50%) had hypertension (≥140/90mmHg) on at least one occasion during admission
- n=1 (7%) had features of delirium (day 3)
- None referred to ICU
- n=7 (50%) had self-directed discharge

Discussion

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Discussion and future directions

- Withdrawal procedures were not tested against a comparator arm, use of diazepam/olanzapine still occurred in all cases
- A withdrawal scale - for quantifying severity of GHB withdrawal to guide the dosing of pharmacotherapies
- A resource to predict withdrawal severity could streamline management by determining who is at a higher risk of complications (such as delirium)
- A prospective study to examine outcomes associated with treatment (for example, different rates of dose escalation of pharmacotherapies)
- Guidelines for when someone wants to cease/reduce dependent GHB
- Harm reduction messaging that addresses change in demographics

Thank You

krista.siefried@svha.org.au

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