

ABSTINENCE SYNDROME

Supporting information

This guideline has been prepared with reference to the following:

Hudak ML, Tan RC. Neonatal drug withdrawal. *Pediatrics* 2012;129:e540-60

<http://pediatrics.aappublications.org/content/129/2/e540.full>

Do infants with neonatal abstinence syndrome (NAS) experience better outcomes when their mothers have been treated with morphine rather than methadone?

A 2020 RCT (93 subjects) found that infants treated with either morphine or methadone had similar short-term and longer term neurobehavioral outcomes (Czynski, 2020). Infants were evaluated at discharge using the NICU Network Neurobehavioral Scale and at 18 months using the Bayley Scales of Infant and Toddler Development-Third Edition (Bayley-III) and with the Child Behavior Checklist.

A 2019 systematic review of 5 studies (2 RCTs and 3 retrospective cohort studies) concluded that treatment with morphine was not associated with better outcomes in infants compared with methadone treatment (Xiao, 2019). Meta-analysis showed no significant difference in opioid treatment days (standardised mean difference (SMD) = 0.32, 95% confidence interval (CI) = -0.16 to 0.80), length of hospital stay (SMD = -0.33, 95% CI = -1.21 to 0.56) and duration of treatment (SMD = -0.83 95% CI = -2.09 to 0.43) between morphine or methadone treatment.

Czynski AJ, Davis JM, Dansereau LM et al. Neurodevelopmental Outcomes of Neonates Randomized to Morphine or Methadone for Treatment of Neonatal Abstinence Syndrome. *J Pediatr.* 2020;219:146-51
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7161698/>

Xiao F, Yan K, Zhou W. Methadone versus morphine treatment outcomes in neonatal abstinence syndrome: A meta-analysis. *J Paediatr Child Health.* 2019;55:1177-82

Evidence Level: I

What are the most appropriate doses for morphine and phenobarbital?

The BNF for Children gives the following recommendations:

Morphine:

- Neonatal opioid withdrawal under specialist supervision
- By mouth
- Neonate initially 40 micrograms/kg every 4 hours until symptoms controlled, increase dose if necessary; reduce frequency gradually over 6–10 days, and stop when 40 micrograms/kg once daily achieved; dose may vary, consult local guidelines
<https://bnfc.nice.org.uk/drug/morphine.html>

Phenobarbital:

- By mouth or by intravenous injection
- Neonate initially 20 mg/kg *by slow intravenous injection* then 2.5–5 mg/kg once daily either *by slow intravenous injection* or *by mouth*; dose and frequency adjusted according to response
<https://bnfc.nice.org.uk/drug/phenobarbital.html>

Last amended December 2021
Last reviewed December 2021

Not found an answer to your question? Wish to suggest an edit to this document?

Please contact the BCGP Clinical Effectiveness Librarian at bedsideclinicalguidelines@uhnm.nhs.uk