

Methadone Superior to Morphine for Neonatal Abstinence Syndrome

Treatment with methadone decreases length of hospital stay and length of drug treatment compared with morphine for neonatal abstinence syndrome.

Jennifer Logan, MD, MPH

August 20, 2018 – Infants with neonatal abstinence syndrome who received methadone had shorter hospital stays and drug treatment regimens compared with those who received morphine.

Jonathan M. Davis, MD, with The Floating Hospital for Children at Tufts Medical Center, in Boston, and colleagues reported their findings in the June 18, 2018 issue of *JAMA Pediatrics*.

Neonatal abstinence syndrome (NAS) is becoming more common as women increasingly use opioids during pregnancy. Morphine and methadone are the most commonly treatments for NAS; however, clinicians vary in whether they dose infants based on weight or clinical signs.

This clinical trial randomized 117 term infants of mothers treated with methadone, buprenorphine, or morphine during pregnancy to treatment with either methadone or morphine. Infants who scored at least eight points on consecutive measures or at least 12 points on a single measure using the Finnegan Neonatal Abstinence Scoring System were treated with the study drug. Treatment groups were compared with respect to length of hospital stay, length of hospital stay related to NAS, length of drug treatment, need for phenobarbital to control NAS signs, weight gain, and need for study drug dose escalation.

Infants who received methadone spent 2.9 fewer days in the hospital (relative number of days, 0.86; 95% confidence interval [CI], 0.71–1.00) and 2.7 fewer days hospitalized related to NAS (relative number of days, 0.86; 95% CI, 0.77–0.96) compared with infants who received morphine. Furthermore, infants receiving methadone required 2.3 fewer days of treatment (relative number of days, 0.84; 95% CI, 0.73–0.97). The need for phenobarbital did not differ between groups.

The thirteen adverse events occurred with similar frequency between groups and included shallow breathing, bradycardia, oxygen desaturation, lethargy, poor feeding, hypothermia, and emesis. A single infant in the methadone group who showed signs of apnea, lethargy, and hypothermia was admitted to the neonatal intensive care unit. Because of this severe adverse event, the study protocol was amended to decrease the methadone dosage used in the protocol.

“A commercially available methadone solution that is preservative free and safe for newborns is needed,” according to Dr Davis and colleagues. Availability of such a formulation would facilitate treatment with “methadone [which] was better than morphine in improving short-term NAS outcomes.”

The study authors report no relevant financial conflicts of interest.

JAMA Pediatrics. Published June 18, 2018