Opioid Dependent Pregnant Women: 
Maternal and Neonatal Outcomes with Buprenorphine Treatment

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A paper in the June issue of Drug and Alcohol Dependence (63:97-103, 2001)

Rolley E. Johnson at Johns Hopkins School of Medicine and thirteen co-authors reported an apparent effective treatment for opioid dependent, pregnant women that seems to safeguard the health of both the mother and her child. It is estimated that in the United States there are 5,000 to 10,000 infants born to opioid dependent women each year. Prenatal methadone treatment, introduced to protect the child from the medical consequences of neonatal abstinence syndrome (NAS), unfortunately, was found to result as well in a high incidence of NAS needing extensive treatment and hospitalization.

The current publication is focused on another manufactured opiate, the partial mu agonist buprenorphine. It is based on over twenty years of findings from many preclinical (animal) studies, ninety-seven retrospective clinical (human subjects) reports along with a new prospective study designed to test this pharmacologic agent in three pregnant, opioid dependent women and their infants. The findings are that buprenorphine appears to be safe and effective for both the mother and child.

For the mother, treatment with 8-12 mg. buprenorphine daily in the latter weeks of pregnancy resulted in little to no neuronal symptoms of opioid withdrawal. Furthermore, preclinical findings indicated that buprenorphine would not impair her fertility or reproductive function while subjective findings by the three women showed minimal levels of heroin craving. As to buprenorphine in breast milk, it would seem that while the plasma to breast milk ratio is 1, the amount of breast milk absorbed by the
infant appears to be low. Therefore, the authors suggest buprenorphine may be advantageous over other opioid agonist medications to treat this special population.

For the child, buprenorphine in combination with comprehensive prenatal care resulted in short term hospitalization, ~ 4 ½ days, to treat a relatively mild NAS evidenced by tremors, hyperactive neuropsychological responses and shortened sleep after feeding. No pharmacological treatments were needed for the three infants. Although in the three study infants NAS signs were present within the first 12 hours after birth and peaked by 72 hours, by 120 hours after birth the NAS signs were fewer than those seen at 12 hours after birth. Of importance, the investigators report that none of the infants required pharmacological treatment for withdrawal. Two other measures of neurobehavioral integrity, the NICU (neonatal intensive care unit) Network Neurobehavioral Scale (NNNS) and the Infant Acoustic Cry were analyzed and both were found to be within normal range. The authors also report that the infants presented a number of adaptive behaviors including hand or thumb to mouth behaviors and showed no signs of heightened arousal.

It is noted that this first prospective, pilot study of buprenorphine for the treatment of opioid dependent pregnant women has a number of limitations including small sample size, open label design lack of controls and the fact that two of three women were in residential care throughout their pregnancy. They indicate that findings from more appropriate controlled studies will be necessary to determine the generalization of the initial observations.

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