

## Blood products used in exchange transfusion should also be screened for opioids

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Madam, neonatal jaundice is one of common causes of morbidity and mortality among neonates worldwide.<sup>1</sup> Mortality rate associated with Exchange Blood Transfusion (EBT) has been reported to range from 0.4% to 3.2%.<sup>2</sup> For a 3 kilogram baby, two times of blood volume will be 500 mL of transfusion.

It has been shown that 12% to 20% of neonates in some countries develop apnoea following EBT.<sup>3</sup> This is considerably higher than other countries which are reported to be 0.34% to 10%.<sup>4</sup> To date no concrete reason has been given to justify the significant discrepancy between them.

Methadone level in blood used for exchange should be zero if obtained from naive subjects. To date, there is no report in regard to blood used for exchange. However, blood samples taken from patients under methadone maintenance therapy is reported to be 263 ng/mL for every milligram of methadone consumed per kilogram of body weight. This assumes normal hydration, the absence of liver disease and any other drug interactions.<sup>5</sup>

Methadone (100mg per day) can generate a serum level

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of 1000 nanogram per milliliter in blood samples.<sup>6</sup> As the transfusion and removal is being performed in a stage wise manner, through mathematical calculation can be demonstrated that methadone can reach 878 nanogram per milliliter in neonate blood. (Similar to the concentration of methadone abuse 100mg/d).

This dose of methadone can cause apnoea. We propose that all blood samples are used for EBT in areas in which drug abuse is common must be checked for methadone, and morphine.

### References

1. Bhutani VK, Johnson LH. Newborn jaundice and kernicterus-- health and societal perspectives. *Indian J Pediatr* 2003; 70: 407-16.
2. Ibe BC. Neonatal Jaundice. In: Azubuike JC, Nkangineme KEO, editors. *Paediatrics and Child Health in a Tropical Region*. Owerri: African Educational services, 1999; pp 204-11.
3. Behjati Sh, Sagheb S, Aryasepehr S, Yaghmai B. Adverse events associated with neonatal exchange transfusion for hyperbilirubinemia. *Indian J Pediatr* 2009; 76: 83-5.
4. Jackson JC. Adverse events associated with exchange transfusion in healthy and ill newborns. *Pediatrics* 1997; 99: E7.
5. Wolff K, Sanderson M, Hay AWM, Raistrick D. Methadone Concentrations in plasma and Their Relationship to Drug Dosage. *Clin Chem* 1991; 37: 205-9.
6. Leavitt SB. Methadone Dosing and Safety in the Treatment of Opioid Addiction. Mundelein, IL: Addiction Treatment Forum [Internet]; 2003 (Cited 2013 April 28). Available from URL: [http://atforum.com/SiteRoot/pages/addiction\\_resources/Dosing andSafetyWP](http://atforum.com/SiteRoot/pages/addiction_resources/Dosing andSafetyWP).