

## **Use and Misuse of Oxytocin during delivery**

### **Abstract**

Maria Jonsson 2009.

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Malpractice claims concerning delivery, during eight years, were analysed for motives behind disciplinary actions, and for the frequency of inappropriate oxytocin use. Failure to respond to signs of foetal distress, oxytocin misuse and passiveness were the recurrent problems found. Inappropriate use of oxytocin was more frequent than reported earlier. (Paper I)

In a case-control study, differences in the management of delivery in neonates born with and without acidaemia (umbilical artery pH < 7.05), were evaluated. Out of 28,486 deliveries (1994–2004), 305 neonates were born with acidaemia. Uterine hyperactivity and oxytocin use were independently associated with acidaemia. Uterine hyperactivity was related to oxytocin treatment in 75 % of cases. Pathological cardiotocographic patterns occurred significantly more often in the case group. The results indicate that clinical guidelines are not always followed.

(Paper II)

In a subset of study II, cases with metabolic acidosis (umbilical artery pH < 7.05 and base deficit  $\geq 12$  mmol/L) and controls were audited for the occurrence of suboptimal intrapartum care which was found in 49% of cases and in 13% of controls. Suboptimal care consisted of injudicious use of oxytocin and a failure of appropriate action upon signs of foetal distress. The high rate of NICU admissions and diagnosis of neonatal encephalopathy among cases confirms that metabolic acidosis should be avoided. We estimate that metabolic acidosis could probably have been prevented in 40-50% of cases. (Paper III)

Women (n=103) scheduled for elective caesarean section were randomised to 5 or 10 units oxytocin, given as an intravenous bolus, and electrocardiograms were analysed for ST depressions as a sign of myocardial ischaemia. ST depressions occurred significantly more often in subjects receiving 10 compared to 5 units. Decrease in mean arterial blood pressure was more marked with 10 units. There was no difference in estimated blood loss. (Paper IV)

*Keywords:* oxytocin, labour, malpractice, acidaemia, metabolic acidosis, uterine contractions, second stage management, foetal surveillance, suboptimal care, caesarean section, heart, ischaemia, hypotension, electrocardiogram

The thesis can be found on:

<http://uu.diva-portal.org/smash/record.jsf?searchId=2&pid=diva2:210374>