

PETHIDINE – DOESN'T WORK BUT STILL IN USE

The latest issue of the NZ College of Midwives Journal features an excellent discussion on pethidine's place in midwifery practice. (1) The fact that pethidine still has a place in midwifery practice is amazing in itself.

Most women do not know that pethidine is not effective at reducing pain. It is a sedative, a synthetic opioid, not a form of pain relief. Sedatives alter the perception of pain rather than providing true analgesia. Because pethidine did not undergo randomised controlled trials (RCTs) before it was introduced into clinical practice, there is no evidence that it is effective at reducing pain or that it shortens labour – two widely-held beliefs about this drug.

It is currently the only controlled drug able to be prescribed by New Zealand midwives. As changes to the New Zealand Misuse of Drugs Act (1975) regarding the prescription of opioids by midwives are being discussed with the Ministry of Health, it is likely that, in the future, midwives will be able to prescribe a wider range of controlled drugs for use during labour.

The NZCOM Journal article outlines some interesting history on the use of pethidine and its use during labour. It was first used in Germany in 1939 as sedation and pain relief for wounded soldiers during World War II. "It spread rapidly throughout society and was widely celebrated by women suffering dysmenorrhea, so much so that by the late 1940s many were addicted. Its use became regulated in 1949, around the time midwives began using it for labour. In midwifery, pethidine was referred to as "sedation" and was used to reduce anxiety in labour." (1)

A 2011 Cochrane systematic review of opioids in labour found that they all provide poor pain relief, and all of them caused significant side effects including drowsiness and nausea in the mother. Because the studies were poor quality ones, the review was not able to find any evidence for or against pethidine as compared to other opioids.

Pethidine is really bad news for babies. It readily crosses the placenta with maximum levels found in the baby's blood stream between one and five hours after being administered to the mother. Effects on the unborn baby include reduced short term beat-to-beat variability of the baby's heart, and once the baby is born studies have revealed side effects which include depressed muscle tone, respiratory effort and sucking ability, and reduced Apgar scores. "Other studies have raised additional concerns regarding the potential association between the use of opioids in labour and development of neonatal drug dependency in later life, though this has not been proven." (1)

A retrospective study of opiate addicts in Sweden undertaken to test the hypothesis that opiate addiction in adults might stem partly from an imprinting process during birth when opioids are given to the mother found that, after controlling for hospital birth, order of birth, duration of labour, presentation other than vertex, surgical intervention, asphyxia, meconium-stained amniotic fluid and birth weight, the relative risk for offspring subsequently becoming an adult opiate addict increased with administration of opiates, barbiturates and nitrous oxide. (2)

Contrary to the widely-held belief that the effects of pethidine are worse for the baby if given close to the birth, the side effects of acidosis and respiratory depression are increased if pethidine is given three to five hours before birth but are barely discernible if given within an hour of birth. This is because the drug has not reached sufficient levels in the baby. "Regardless of their effects on respiratory depression, the longer lasting influence of pethidine's metabolites will persist regardless of timing of dose. These effects may be more subtle or 'hidden' at birth, but will go on to affect the baby for several days while the original dose of pethidine is being metabolised by the baby's liver."

Another major drawback is that pethidine has a prolonged sedative effect on the newborn baby and this affects their ability to breastfeed. Pethidine also accumulates in colostrum and mature breast milk.

The NZCOM Journal article concludes by stating that "pethidine offers temporary, relatively weak analgesia. It is an effective sedative, inducing sleepiness, and reduced awareness and control. It has long been believed that pethidine shortens labour but the current available evidence suggests this is not the case. Ideally, opioids chosen for midwifery use will have rapid onset of effect, be efficiently metabolized and eliminated, and have minimal side effects. Pethidine causes more side effects than other opioids such as morphine and fentanyl: these other drugs have shorter half-lives and may also have fewer undesirable effects on newborns."

(1)

Two New Zealand DHBs have stopped offering pethidine and are now using either fentanyl or morphine, administered by midwives, but prescribed by doctors. Whether the current review of the legislation results in midwives being able to prescribe morphine and fentanyl as well as pethidine remains to be seen.

In the meantime, women must to be given full and accurate information on all the pain relieving drugs available during labour. The truth about the side effects of pethidine on both mother and baby has been known for decades. Despite the significant impact it has on babies and the significant risks attached to its use it is incredible that it is still being used to sedate women in labour.

Reference

1. Chloe Goodson & Ruth Martis. "Pethidine: to prescribe or not to prescribe? A discussion surrounding pethidine's place in midwifery practice and New Zealand prescribing legislation." *NZ Journal College of Midwives. Journal 49*
2. Bertil Jacobson et al. "Opiate addiction in adult offspring through possible imprinting after obstetric treatment." *British Medical Journal*. 1990.