Oxytocin: still the optimal prophylactic despite soaring rates of haemorrhage at birth. (Mini-commentary on BJOG-20-1239.R3)

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Mini-commentary on BJOG-20-1239.R3: Intramuscular oxytocin versus Syntometrine versus carbetocin for prevention of primary postpartum haemorrhage after vaginal birth: a randomised double blinded clinical trial of effectiveness, side effects and quality of life

Oxytocin: still the optimal prophylactic despite soaring rates of haemorrhage at birth

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The results of the IMox study, although not surprising, are very much to be welcomed. This high quality, double-blind study provides conclusive evidence that there is essentially no difference in effectiveness between prophylactic intramuscular (i.m.) oxytocin, carbetocin, and oxytocin+ergometrine (Syntometrine®); (van der Nelson et al. BJOG 2020). Blood loss at 500mls, 1000mls and need for blood transfusion were the same in all 3 groups. The only difference in effectiveness was that those who received oxytocin+ergometrine needed slightly fewer additional uterotonics (16%, versus 19% in the other two groups) suggesting that this combination was marginally stronger. The price for that however was great: those who received oxytocin+ergometrine were far more likely to get nausea (24%), vomiting (18%), or hypertension (12%), and this led to 8% of women feeling that their ability to bond or care for their baby was affected by side effects – almost twice the rate that with oxytocin or carbetocin. All this confirms what we already knew about intramuscular uterotonics for prophylaxis: oxytocin alone is the optimal choice.

However, these results should be considered in the light of evidence that oxytocin is considerably more effective when administered intravenously (i.v.). This has led the WHO to recommend that oxytocin should be given as a slow i.v. injection rather than i.m. in high-risk women (WHO, Geneva 2020). Although they have not been directly compared, the degree of benefit of i.v. over i.m. oxytocin means that it is likely that i.v. oxytocin would also be more effective than i.m. oxytocin+ergometrine, and without the side effects of nausea and hypertension.

It is also reassuring that oxytocin+ergometrine use did not increase the rate of retained placenta. A study conducted 30 years ago showed than i.v. ergometrine increases the rate of retained placenta (Begley. Midwife-

ry 1990;6:3-17), and there have been some concerns that this might also extend to i.m. oxytocin+ergometrine. But this study provides fairly definitive proof that if has no effect.

In some ways the most startling aspect of these results are not the comparisons between groups, but the overall data on blood loss. The rate of PPH was 49% if defined as measured loss of 500mls or over and 18% if defined as 1000mls or more. This is one of the biggest PPH rates ever reported, and confirms the long-term trend for increasing PPH rates in vaginal births in high resource settings over the last 30 years. The high rate in this study is related to the highly medicalised population studied: 70% were induced (as these were the easiest group to recruit) and 22% underwent instrumental delivery. Induction of labour has been strongly associated with PPH, but only when there is a medical reason for the induction: women induced without medical indication have no difference in PPH rate (Khireddine et al. PLoS ONE 2013;8:e54858). Thus the underlying reason for induction may contribute strongly to the increase in PPH – and indeed hypertension itself is one of the strongest antenatal predictors of PPH (Mavrides et al. BJOG 2016;124:e106–e149).

Declaration of Interests : Andrew Weeks declares that he has no conflicts of interest. A completed disclosure of interest form is available to view online as supporting information.