Administration of Syntocinon by anesthetists at the time of uterine evacuation in early pregnancy

Sir,

Uterine evacuation in the first trimester of pregnancy is a common gynecological procedure worldwide. Significant vaginal bleeding may occur during or after uterine evacuation. To address or prevent this, uterotonic agents (or oxytocics) are commonly administered by the anesthetist, usually at the request of the gynecologist.

The recently pregnant uterus is believed to contract firmly as a physiological mechanism to curtail blood loss. Histology of myometrial and subendometrial tissue reveals the criss-crossing of myometrial fibers around blood vessels. Myometrial fiber contraction occludes the blood vessel, serving therefore as “living ligatures.” Uterotonics increase the myometrial tone in the uterus and other organs.

Uterotonics commonly administered perioperatively for miscarriage or abortion are Syntocinon (5 units synthetic oxytocin), Syntometrine (synthetic oxytocin 5 units + ergometrine maleate 500 mcg), and ergometrine (500 mcg). They reduce bleeding during and after uterine evacuation at miscarriage or abortion. However, the administration of Syntocinon in these circumstances, singly or in combination, appears to be pharmacologically flawed.

First, uterine oxytocin receptor concentration is low before the 17th week of pregnancy.1,2 Second, intravenous (IV) bolus administration of 10 units (IV) Syntocinon was associated with maternal death in the 2000’s in the United Kingdom.3 Third, bronchospasm and laryngeal stridor were observed following an infusion of oxytocin in the Intensive Care Unit, following a septic abortion.4

Ergometrine, administered alone, is a scientifically-defensible choice in uterine evacuation in the first half of pregnancy.

Prostin E2 (dinoprost 3 mg vaginal tablet) or misoprostol is a relatively new uterotonic. One recommendation is to administer it 3 h preuterine evacuation, to help soften the ectocervix and additionally to reduce the likelihood of postevacuation vaginal bleeding.5 More importantly, it is an effective uterotonic at all gestational ages, irrespective of the absence of oxytocin receptors.

If there are few oxytocin receptors in the uterus during the first trimester of pregnancy, is it appropriate to administer an agent that is expected to act on oxytocin receptors? There is no logical or pharmacological reason to do so.

The administration of Syntocinon during or after uterine evacuation in the first trimester of pregnancy is not supported by scientific evidence. The anesthetist who administers this drug needs to reflect on this apparently simple oversight of pharmacology.

Anesthetists have an important role in reminding gynecologists and other colleagues that there could be a mismatch between target tissue response and expected clinical endpoints or unexpected risks. Anesthetists are also in a unique position to question treatment requests, and to help effect change in indefensible drug administration. IV oxytocin administration during the first trimester uterine evacuation is one of such circumstances.

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Anne Elad Babarinsa,
Isaac Akinbolu Babarinsa
Department of Anesthetics, University Hospital of Wales, Cardiff, United Kingdom, 1Department of Obstetrics and Gynaecology, Sidra Medical and Research Center, Doha, Qatar

Address for correspondence: Dr. Isaac Akinbolu Babarinsa, Department of Obstetrics and Gynaecology, Sidra Medical and Research Center, Doha, Qatar. E-mail: ibabarinsa@sidra.org

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