

Part 3: Common Medications prescribed on an O&G rotation

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In this podcast, we discuss the five categories of medications used in [Obstetrics and Gynaecology](#) that junior doctors may have not encountered or prescribed previously.

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About Dr Rebecca Taylor

Dr Rebecca (Becky) Taylor is a 6th year O&G trainee. Originally hailing from the UK, she trained at the University of Edinburgh where she also completed her [internship](#) and residency, before moving to Australia. She undertook her basic [O&G](#) training at [Royal Prince Alfred Hospital](#) in Sydney. Rebecca is currently undertaking a two year Gynaecology Fellowship at Royal Prince Alfred Hospital. When Becky's not knee-deep in amniotic fluid she is a keen swimmer and free diver, a terrible cook and married to an anaesthetist she met at a Cat One Caesarean.

About Dr Jane McDonnell

Dr Jane McDonnell is an Obstetrics & Gynaecology Registrar based in Sydney. She completed her medical degree at The University of Notre Dame after completing a Bachelor of Medical Science from The University of Sydney. Jane has a Masters in Public Health from the University of New South Wales and has completed an internship at the [World Health Organisation](#) in Geneva. In 2019, she was awarded the JMO Teacher of the Year at Royal North Shore Hospital. Jane is interested in women's and refugee health, teaching and research. Outside of medicine, she enjoys running and sudoku.

Obstetrics and Gynaecology: Medications

With Dr Rebecca Taylor, Obstetrics & Gynaecology Fellow and Dr Jane McDonnell, Obstetrics & Gynaecology Registrar, based in Sydney, New South Wales, Australia.

Introduction

There are medications used in Obstetrics and Gynaecology that junior doctors may have not encountered or prescribed previously. If you are ever asked to prescribe a medication you have never encountered or prescribed previously, always check with a senior colleague. There are five categories of drugs used Obstetrics and Gynaecology: oxytocics, steroids, analgesia, antibiotics and antiemetics.

1. Oxytocics: Drugs which cause uterine contractions

- Oxytocin is a peptide hormone produced by the hypothalamus and secreted into the blood stream by the posterior pituitary gland
- Main function is uterine contraction and lactation
- This medication is used daily in the delivery suite, Caesarian sections, active management of third stage of labour, postpartum haemorrhage (PPH), and augmentation and induction of labour
- **Induction of labour** is when labour contractions are artificially kickstarted using oxytocin ('Syntocinon')
- **Augmentation of labour** means strengthening or increasing the frequency of contraction in an already established labour
- The standard dose is 10 units of oxytocin in a 1L normal saline bag which is infused at variable rates and can be up-titrated to achieve a desired strength and frequency of uterine contractions
 - Note: Various health units will have a policy regarding infusion rates
- The **active management of third stage** is the use of uterotonics at delivery, early clamping and cutting of the cord, and controlled cord traction after signs of separation of the placenta
 - Proven to reduce PPH
 - Standard practice across all maternity units
 - Some women prefer to have physiological third stage and would like the placenta to be delivered naturally. This is associated with increased rates of PPH and retained placenta
 - The most commonly used medication for active third stage management is oxytocin 10 units intramuscular given by the assisting midwife at delivery of the baby's shoulder
- **PPH management** if used for women actively bleeding who have lost ≥ 500 mls of bloods, or for women at risk of PPH e.g due to a history of PPH, prolonged labour, twin pregnancy etc.
 - The standard prescription is 40 IU of oxytocin in 1L normal saline, run at 250mL/hr
 - Be careful not to confuse the doses of oxytocin for induction or augmentation with that for PPH management, because the rate of infusion is much higher for PPH management; this rate could cause fetal distress
 - **Ergometrine**, another oxytocic commonly used for PPH management, is an ergot alkaloid with uterine and vascular smooth muscle contractile properties and can be given IM or IV

- Ergometrine shouldn't be used in women who have hypertensive or cardiac history, or in women with preeclampsia as it can raise blood pressure
- Typically the dose begins at 250micrograms IM and can then give further doses five minutely to a maximum of 1000 micrograms, but in clinical practice it is rare to give more than two doses
- Some units use **syntometrine**, which is a combination of oxytocin and ergometrine
- **Misoprostol** is another commonly used oxytocic
 - A prostaglandin E1 analogue which causes cervical softening, dilatation, and uterine contractions
 - It comes in 200microgram tablets and can be given orally, vaginally, or rectally
 - Commonly used in PPH management, given usually rectally at a dose of 800 - 1000 micrograms. This is the most common reason for a JMO to prescribe misoprostol
 - Misoprostol is also used for medical management of miscarriage and termination of pregnancy
 - The common side effects are shivering and fever, especially when given via oral or sublingual routes
- Other oxytocics you may encounter are **PGF2alpha** medications such as carboprost which causes smooth muscle contraction and may be given IM or intramyometrially (off licence)
 - This will typically not be prescribed by a junior doctor in the delivery suite, will likely be used in theatres, as it is for intractable PPH
- Another medication that is being used more for PPH is IV **tranexamic acid**, which is an antifibrinolytic
 - Tranexamic acid was shown in the WOMAN trial⁽¹⁾ to reduce the risk of death from bleeding with no reported adverse effects
 - Can be given as a 1g IV injection

2. Intramuscular steroids are used for fetal lung maturation when we expect that the birth may be preterm

- Standard practice where delivery is likely before 34 weeks gestation and aims to reduce the rates of respiratory distress and improve outcomes in preterm babies
- Some units can also give steroids when a planned Caesarian section occurs without labour before 38 weeks and aims to reduce respiratory distress in the newborn
 - You will not be asked to make a decision regarding steroid administration but you may be asked to prescribe it

- The most commonly used steroid in Australia is **betamethasone ('Celestone')** 11.4mg IM and two doses are given usually 24 hour apart, but occasionally may be given 12 hours apart if there is no time to wait until delivery
- Steroids are likely to increase blood sugar, therefore patients with gestational diabetes or pre-existing diabetes may need endocrine input as their BSLs are likely to increase following administration of steroids

3. Analgesia: The most common medication JMOs will be asked to prescribe

- Avoid non-steroidal anti-inflammatory drugs (NSAIDs), particularly during first trimester as they can increase the risk of miscarriage and after 30 weeks as they are cyclooxygenase inhibitors and can therefore cause premature closure of the ductus arteriosus in the fetus, which depends on cyclooxygenase to remain patent. High doses may also reduce fetal renal perfusion
 - NSAIDs can be used judiciously between these timeframes but in practice they are not often prescribed
 - They are very effective postpartum analgesia so they should be considered in tandem with paracetamol prior to opiate use. The only note of caution in this instance is in women with preeclampsia or major blood loss where they should be avoided
- **Paracetamol** is safe to use in pregnancy and breast feeding
- **Panadeine forte** is often used antenatally for pain relief and in early labour
 - Short term use is safe but long term use can be associated with increased risk of neonatal abstinence syndrome
 - Use postpartum is contraindicated in breast feeding mothers due to cases of neonatal death in infants of mothers who have a duplication in the CYP2D6 gene, the gene that catalyses the demethylation of codeine to morphine
 - This can lead to ultra-rapid metabolism of codeine and therefore increased morphine levels in the mother, which may be transmitted to the neonate through breast milk
 - For patients requiring opiate analgesia postpartum, **oxycodone** or **Endone** is safe to use
 - Commonly prescribed by the anaesthetic team if the patient has had a Caesarian section
 - As per the ANZCA recommendation, there has been a move away from the prescription of long-acting opiates for postoperative pain
 - It is rare that opiates are needed for postpartum pain after vaginal delivery, but sometimes the pain can be severe, especially if the woman has had a forceps delivery
 - Examine the patient to exclude a perineal haematoma if the patient has severe pain

requiring opiate analgesia after a vaginal delivery

- Intrapartum analgesia options are different; oral absorption of medications is very poor in established labour, so we don't tend to use oral analgesia
 - **Nitrous oxide** gas is commonly used; this can be given by the midwife (does not need to be prescribed)
 - There is also some evidence for **sterile water injections**, and this can be administered by the midwife
 - You may be asked to prescribe **morphine**, and this is usually given subcutaneously. A typical dose is 0.1mg/kg to a maximum of 10mg subcutaneously every 4 hours. However, this dosing needs to account for the patient's weight, age, previous opiate exposure, and level of pain
 - Due to the risk of neonatal respiratory depression, we try to avoid giving morphine when the delivery is expected to be imminent
 - g Don't give it to a woman who is 9cm dilated or a multiparous woman who is 6cm and has had a previous precipitous birth
 - Furthermore, there is the option of an **epidural**, which the anaesthetist will site
 - The anaesthetist will expect you to have sited a 16 G cannula and to have performed an FBC and group and hold before the epidural is sited

4. Antibiotics. Common indications include:

- Preterm Premature Rupture of Membranes (PPROM), for which **erythromycin** is commonly used
- Women who have a positive Group B Streptococcus genital swab, for which **benzylpenicillin** is used in labour
- Other indications include intrapartum or postpartum fever and urinary tract infection
- The type of antibiotics used depends on the source of fever suspected, but also varies between health districts, so make sure you check your specific hospital policy
- There are a few antibiotics to avoid, as some antibiotics are contraindicated in pregnancy

- Trimethoprim is contraindicated in the first trimester as it is a folate antagonist, so can increase the rate of neural tube defects
- Tetracyclines such as doxycycline are contraindicated as they effect the calcification of bones and cause discolouration of teeth
- If you are in any doubt, always ask a senior or check AMH before prescribing antibiotics

5. Antiemetics

- Nausea and vomiting are very common in pregnancy, particularly in the first trimester when beta-HCG levels peak, and is a very common cause for presentation to the Emergency Department or a complaint in the antenatal clinic
- For most, the nausea and vomiting tends to subside or improve after the first trimester
- Before pharmacological management, it is important to consider non-pharmacological measures such as eating small but frequent low-fat meals, snacking on high protein foods, avoiding spicy foods, eating plain biscuits and crackers
- When pharmacological management is needed, some of the drugs we use for nausea and vomiting differ from those used in your other rotations
 - According to eTG guidelines, we would first commence pyridoxine, which is vitamin B6, 12.5mg orally in the morning and midday, and 25mg at night in addition to doxylamine 25mg at night, an antihistamine which can cause sedation
 - If these pharmacological and non-pharmacological measures don't work well enough, we can add in metoclopramide, ondansetron, prochlorperazine, or promethazine, at the doses you would be used to
- Always make sure you take a thorough medication history in the antenatal clinic
 - Women may be on blood pressure medications that they shouldn't be taking in pregnancy
 - It is important to ensure all the medications are safe in pregnancy and stop them if not

Take home messages

- If you are not comfortable prescribing a medication, do not do so and check with a senior
- Take a thorough medication history
 - Often women may be on supplements or herbal remedies which do not have safety data; the easiest recommendation is to cease these

- It is important women are educated about what they are taking and are aware of existing or lack of evidence for these medications
- If you are in doubt about whether a medication is safe to use in pregnancy and want more information, you can contact Mothersafe which provides comprehensive reviews on medication safety profiles in pregnancy

References

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