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Carbetocin versus oxytocin in the prevention of post-partum haemorrhage at caesarean section: a retrospective analysis

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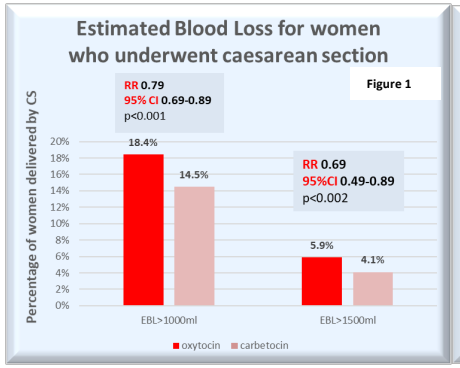
Introduction

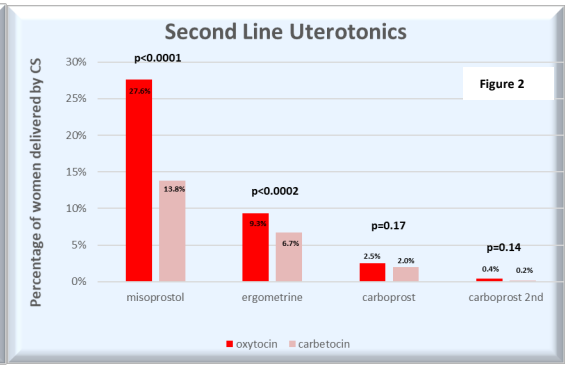
- We introduced carbetocin (100mcg IV bolus) in 2018 to replace oxytocin (5iu IV bolus + 40iu/4 hours IV infusion) as the first line prophylactic uterotonic administered routinely at caesarean delivery for the prevention of postpartum haemorrhage (PPH).
- Our aims: to address safety incidents reported with uterotonics, simplify uterotonic administration, reduce use of second-line uterotonics, reduce the risk of PPH and improve maternal experience. We reviewed whether these aims had been met.

Methods

- Retrospective analysis of electronic patient record (K2 Medical Systems) for all women having caesarean section (CS) from August 2017 to December 2021
- **Two groups allocated** according to the first-line uterotonic: **carbetocin** or **oxytocin**
- Data collected: second-line uterotonics administered, estimated blood loss (EBL), presence of PPH >1000ml or >1500ml, demographic data (age, parity, height, weight, BMI, urgency of CS).
- Online survey of (n=30) anaesthetists working in our unit, rating ease of use of the two uterotonic regimes on a 0-10 scale and describing side effects seen.

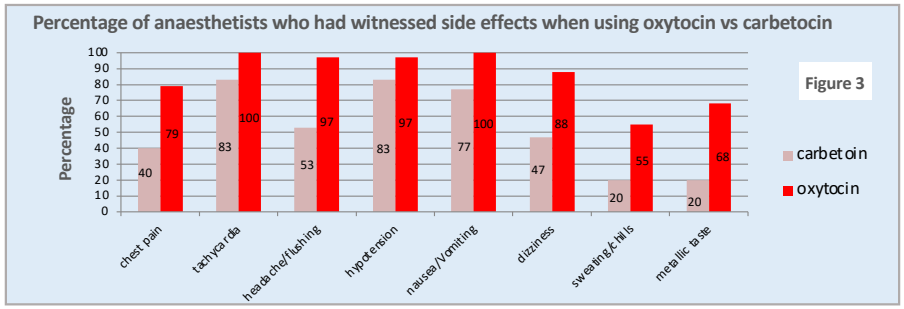
Results





- **2674 women received oxytocin and 2747 women received carbetocin.**
- The groups were statistically similar in age, parity, height, weight, BMI and urgency of CS.

- There was a **reduction in mean EBL** for **women receiving carbetocin** versus oxytocin during CS: 663ml vs 737ml, mean difference 74ml [95% CI 52-95ml, p<0.001].
- There was a **reduction in use of all second line uterotonics** (Figure 2)
- **Carbetocin was rated as easier to use** compared with oxytocin (9.4/10 versus 4.4/10).
- **All side** effects were **reported to be less common with carbetocin** (chest pain, hypotension, tachycardia, flushing/headache, dizziness, sweating/chills, metallic taste and nausea/vomiting).
- **No safety incidents** involving **carbetocin** have been reported since its introduction.



Discussion

- We have seen a **statistically significant reduction in blood loss, massive haemorrhage and second -line uterotonic** use since carbetocin was introduced routinely at CS.
- We cannot be certain this is caused purely by the choice of uterotonic, as the two groups were delivered over differing timeframes. However, our **findings are in keeping with randomised trial data[1].**
- Anaesthetists reported **fewer side effects** after carbetocin administration and rated it **easier to use**.
- The **introduction of carbetocin was cost-neutral** in our unit when taking into account the equipment and disposables needed for the oxytocin infusion.
- A **reduction in massive haemorrhage** and **secondary uterotonic side effects**, including fever, **may further reduce costs** whilst **improving safety and experience for women**.

References

1. Rosales-Ortiz S, Aguado RP, Hernandez RS, et al. Carbetocin versus oxytocin for prevention of postpartum haemorrhage: a randomised control trial. The Lancet 2014; 383: S51