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## Cochrane Central Register of Controlled Trials

# Carbetocin versus oxytocin for prevention of postpartum haemorrhage: a randomised controlled trial

Embase

Lancet, 2014, 383, S51- | added to CENTRAL: 30 September 2016 | 2016 Issue 9

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## Abstract

**Background** Postpartum haemorrhage (PPH) is the leading cause of maternal death worldwide. Prophylactic uterotonics are effective in reducing PPH, and the drug of choice is oxytocin. Carbetocin, a newer analogue of oxytocin, has a greater biological effect and longer half-life. It is also more heat-stable than oxytocin, which is of crucial importance to resource-poor settings. We compared the efficacy of carbetocin with oxytocin. **Methods** In this randomised controlled trial in a tertiary maternity hospital in Mexico, pregnant women with at least one risk factor for PPH were randomly assigned by a central computer-generated list of random numbers in a 1:1 ratio with no masking either to carbetocin 100 µg as a single intravenous bolus or to oxytocin 20 IU as a 6-h

infusion, both administered immediately after childbirth. The primary outcome was PPH with blood loss exceeding 500 mL. Secondary outcomes were the volume of blood loss, severe PPH (blood loss >1000 mL), change in haemodynamic and clinical variables within 24 h of childbirth, and the need for additional uterotonic treatment. Comparisons were done by intention-to-treat analysis. This trial is registered with Instituto Mexicano del Seguro Social (IMSS), number R-2011-3606-1. Findings 1210 women were included with 602 assigned to carbetocin and 608 assigned to oxytocin. Blood loss exceeding 500mL was lower in women assigned to carbetocin than in women assigned to oxytocin (18.4% [111/602] vs 25.8 [157/208], relative risk [RR] 0.67, 95% CI 0.54-0.83; number needed to treat [NNT] 14, 95% CI 8-37). Mean blood loss was less with carbetocin than with oxytocin (366 mL [SE 7.8] vs 400 [7.6],  $p<0.001$ ). The frequency of blood transfusion was similar in the two groups (1.7% [10/602] vs 2.6% [16/608]; RR 0.67, 95% CI 0.31-1.38). The frequency of severe PPH did not differ between the two groups (1.3% [8/602] vs 1.6% [7/608]; 1.15, 0.42-3.16). Fewer participants receiving carbetocin than receiving oxytocin required additional uterotonics (1.5% [9/602] vs 5.8% [35/608], adjusted RR 0.3, 95% CI 0.14-0.61), and fluid resuscitation (20.6% [124/602] vs 24.2% [147/608]; 0.77, 0.62-0.95). No significant difference in the haemodynamic variables was found. Interpretation To our knowledge, this is the largest trial comparing carbetocin with oxytocin. An updated meta-analysis, combining the results from six randomised trials, including this study, found that carbetocin was associated with a reduction of PPH compared with oxytocin.

## Information

### **Database:**

Cochrane Central Register of Controlled Trials (CENTRAL)

### **Date Added to CENTRAL:**

30 September 2016

### **Issue Added to CENTRAL:**

2016 Issue 9

### **Source:**

Lancet

**Year of Publication:**

2014

**Volume:**

383

**Pages:**

S51-

**Correspondence Details:**

Birmingham Women's Hospital, Edgaston, Birmingham, United Kingdom

**Conference Details:**

Spring Meeting for Clinician Scientists in Training 2014 London United Kingdom.

CONFERENCE START: 2014 Feb 26 CONFERENCE END: 2014 Feb 26

**Accession Number:**

EMBASE 72342334

**Language:**

English

**Publication Type:**

Journal: Conference Abstract

**ID Number:**

CN-01179216

## Keywords

**Embase Keywords**

\*human; \*prevention; \*postpartum hemorrhage; \*randomized controlled trial; \*scientist; bleeding; female; risk factor; childbirth; infusion; computer; pregnant woman; meta analysis; Mexico; hospital; heat; half life time; intention to treat analysis; biological activity; blood transfusion; fluid resuscitation; maternal mortality

