

Carbetocin: A cost effective tool to save lives!

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Declaration of Interests

- None

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Introduction

- Atonic Postpartum haemorrhage (PPH) is one of the major contributors to maternal morbidity and mortality worldwide
- Prophylactic uterotonics should routinely be offered in the management of the third stage of labour in all women as they reduce the risk of PPH
- Current RCOG guidance recommends using Oxytocin (5iu by slow IV injection) as prophylaxis for delivery by Caesarean Section
- Ergometrine-oxytocin (Syntometrine) reduces the risk of minor PPH and can be considered in patients at increased risk of PPH in the absence of hypertension

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Introduction

- Carbetocin is a longer acting oxytocin derivative, which is licenced in the UK specifically for the prevention of PPH in the context of caesarean delivery
- Use of Carbetocin has shown a statistically significant reduction in the need for further uterotonics
- The cost of Carbetocin at £17.64 is significantly higher than that of Syntocinon and Syntometrine with a price of 80p and £1.57 respectively

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Objective

- To demonstrate the use of Carbetocin as a cost effective prophylactic tool in the prevention of PPH at caesarean section

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Method

- Retrospective analysis of patients undergoing caesarean section

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- Patients were initially divided into three groups (Data set 1):

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 - Group A: Use of Carbetocin only

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Method

- Retrospective analysis of patients undergoing caesarean section
- Patients were initially divided into three groups (Data set 1):
 - Group A: Use of Carbetocin only
 - Group B: use of Carbetocin + other uterotonics

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Method

- Retrospective analysis of patients undergoing caesarean section
- Patients were initially divided into three groups (Data set 1):
 - Group A: Use of Carbetocin only
 - Group B: use of Carbetocin + other uterotonics
 - Group C: Other uterotonics

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Method

- Retrospective analysis of patients undergoing caesarean section
- Patients were initially divided into three groups (Data set 1):
 - Group A: Use of Carbetocin only
 - Group B: use of Carbetocin + other uterotonics
 - Group C: Other uterotonics
- Amount of blood loss and the cost involved in procuring and administering of the drugs and blood transfusion was compared between the three groups

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Method

- A second round of retrospective data analysis of patients undergoing elective caesarean section without the use of Carbetocin (Data set 2)

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Method

- A second round of retrospective data analysis of patients undergoing elective caesarean section without the use of Carbetocin (Data set 2)
- The amount of blood loss and units of blood transfusion required were compared between data set 1 and 2

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Results

DATA SET 1

- 1114 patients were analysed

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Results

DATA SET 1

- 1114 patients were analysed

EBL	Group A <i>n</i> = 459	Group B <i>n</i> = 321	Group C <i>n</i> = 354
0-499ml	270 (59%)	81 (27%)	135 (38%)
500 – 999ml	163 (36%)	151 (50%)	153 (43%)
1000 – 1499ml	20 (4%)	44 (15%)	31 (9%)
>1500ml	6 (1%)	25 (8%)	35 (10%)

Results

DATA SET 1

- 1114 patients were analysed

EBL	Group A +B <i>n = 760</i>	Group C <i>n = 354</i>
0-499ml	351 (46%)	135 (38%)
500 – 999ml	314 (41%)	153 (43%)
1000 – 1499ml	64 (9%)	31 (9%)
>1500ml	31 (4%)	35 (10%)

Results

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Results

- 79 units of blood were required during this period of time
 - 25 units used for group A+B
 - 54 units used for group C

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Results

- 79 units of blood were required during this period of time
 - 25 units used for group A+B
 - *25 units for 760 patients (ratio 1:30)*
 - 54 units used for group C
 - *54 units for 354 patients (ratio 1:6.5)*

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Results

- 79 units of blood were required during this period of time
 - 25 units used for group A+B
 - *25 units for 760 patients (ratio 1:30)*
 - 54 units used for group C
 - *54 units for 354 patients (ratio 1:6.5)*
- Cost of transfusion
 - Group A+B = £5,000
 - Group C = £10,800

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Results

- 79 units of blood were required during this period of time
 - 25 units used for group A+B
 - *25 units for 760 patients (ratio 1:30)*
 - 54 units used for group C
 - *54 units for 354 patients (ratio 1:6.5)*
- Cost of transfusion
 - Group A+B = £5,000
 - Group C = £10,800
- Cost of drugs + transfusion
 - Group A+B = £8,213
 - Group C = £12,390

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Results

DATA SET 2

- 1120 patients were analysed

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Results

DATA SET 2

- 1120 patients were analysed

EBL	Patients
0-499ml	286 (25%)
500 – 999ml	603 (53.8%)
1000 – 1499ml	96 (8.6%)
>1500 ml	135 (12.1%)

Results

DATA SET 2

- 1120 patients were analysed

EBL	Data Set 1 <i>n = 1114</i>	Data Set 2 <i>n = 1120</i>
0-499ml	486 (43%)	286 (25%)
500 – 999ml	467 (42%)	603 (53.8%)
1000 – 1499ml	95 (9%)	96 (8.6%)
>1500ml	66 (6%)	135 (12.1%)

Results

DATA SET 2

- 1120 patients were analysed

EBL	Group A+B <i>n = 760</i>	Data Set 2 <i>n = 1120</i>
0-499ml	351 (46%)	286 (25%)
500 – 999ml	314 (41%)	603 (53.8%)
1000 – 1499ml	64 (9%)	96 (8.6%)
>1500ml	31 (4%)	135 (12.1%)

Results

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Results

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500 – 999ml	314 (41%)	603 (53.8%)
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>1500ml	31 (4%)	135 (12.1%)

Results

- 153 units of blood were transfused
 - 153 units for 1120 patients (ratio 1:7)

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Results

- 153 units of blood were transfused
 - 153 units for 1120 patients (ratio 1:7)
 - *Group A+B: 25 units for 760 patients (ratio 1:30)*
 - *Odds ratio 0.2096 (CI 0.1359 – 0.3232)*

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Results

- 153 units of blood were transfused
 - 153 units for 1120 patients (ratio 1:7)
- Total cost of transfusion = £30,600

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Results

- 153 units of blood were transfused
 - 153 units for 1120 patients (ratio 1:7)
- Total cost of transfusion = £30,600
 - Average cost per Caesarean Section = £27.32

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Results

- 153 units of blood were transfused
 - 153 units for 1120 patients (ratio 1:7)
- Total cost of transfusion = £30,600
 - Average cost per Caesarean Section = £27.32
 - *Average cost per caesarean section Group A+B = £6.58*
 - *Average cost per caesarean section Group C = £30.51*

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Conclusion

- The use of Carbetocin was better at keeping blood loss <500ml
- The incidence of major postpartum haemorrhage (EBL >1500ml) was lower in the groups that received Carbetocin
- A reduction in the incidence of major postpartum haemorrhage will reduce the requirement of blood transfusion
- Reducing the requirement of blood transfusions will offset the increased initial cost of Carbetocin as the prophylactic agent of choice

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Conclusion

- A cochrane review demonstrated that Carbetocin reduces the need for further uterotonic agents, which offers further cost savings
- Reducing the incidence of PPH will reduced the other associated co-morbidities and psychological sequelae patients suffer

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Conclusion

- In developing and the developed world alike, Carbetocin could prove to be an invaluable and cost effective tool to save lives.

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Questions?

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