


## PERIPARTUM HYSTERECTOMY AND ARTERIAL EMBOLISATION IN BELGIUM

Results of the Belgian Obstetric Surveillance System

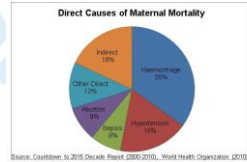
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Sponsored by the Belgian College Mother and Child



## Background

- **Massive obstetric hemorrhage**  
Important cause of maternal death
- **Hysterectomy and Embolisation**  
Life saving interventions



## Objectives

- to investigate the **prevalence** of peripartum hysterectomy and arterial embolisation in Belgium
- to assess **risk factors, management** and **outcomes** for mother and child



## Methods



Belgian Obstetric Surveillance System

## Belgian Obstetric Surveillance System



- Registration and analysis
- Rare obstetric complications
- Financed by the Doctors College of Mother and Newborn
- 2012-2013
- Methodology based on UKOSS
- www.b-oss.be

## Definition

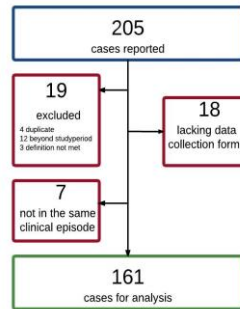
Any woman giving birth to a fetus or infant and undergoing a **hysterectomy** and /or **embolization** of the uterine arteries in the same clinical episode.

## Results

- Participation **97%** of Belgian maternities (n=113)
- Coverage **98,6%** (253 382) deliveries



## Results - Reported cases

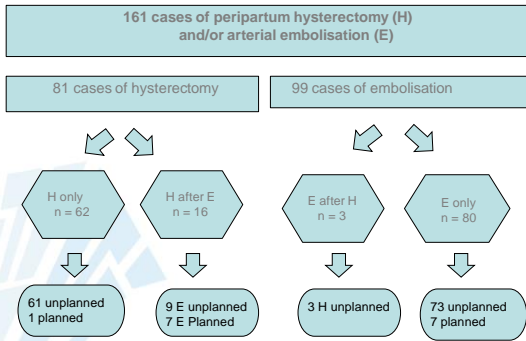


## Results - Prevalence

	UKOSS	LEMMoN	B.OSS
Registration length	13 mnd	24 mnd	24 mnd
Total number of deliveries	852 206	371 021	252 272
Hyst &/or Emb	318 (9)	205	161
Prevalence / 10 000 deliveries	3.7 (CI 3,4-4,0)	5.7 (CI 5,0-6,0)	<b>6.4</b> (CI 5.5-7.4)

## Results - Prevalence

	B.OSS (n=161)	LEMMoN (n=205)
Hysterectomy total (n, prevalence)	81 (3.2/10 000, CI 2.5-3.9)	108 (3.0/10 000, CI 2.4-3.6)
Embolisation total (n, prevalence)	99 (3.9/10 000, CI 3.2-4.7)	114 (3.2/10 000, CI 2.6-3.8)
Hysterectomy only (n, %)	62 (38.5%)	91 (44%)
Embolisation only (n, %)	80 (49.7%)	97 (47%)
Hysterectomy after embolisation (n, %)	16 (9.94%)	17 (8%)
Embolisation after hysterectomy (n, %)	3 (18.6%)	-



### Results – Cause of hemorrhage

Cause of haemorrhage	Number of women			RR (95% CI)
	Total N=161 N, %	Hysterectomy only N=62 N, %	Embolization only N=80 N, %	
Uterine atony	88 (54.7)	29 (46.8)	51 (63.8)	0.7 (0.5-1.0)
Abnormal placentation	56 (34.8)	23 (37.1)	20 (25.0)	1.5 (0.9-2.4)
- Praevia	18 (11.2)	7 (11.3)	11 (13.7)	0.8 (0.3-1.9)
- AIP and AIP+ praevia	38 (23.6)	16 (25.8)	9 (11.2)	2.5 (1.2-5.4) <sup>†</sup>
Placental remnants or retention	23 (14.3)	6 (9.68)	16 (20.0)	0.4 (0.2-1.1)
Iatrogenic during surgery	13 (8.07)	7 (11.3)	5 (6.2)	1.8 (0.6-5.4)
Genital tract laceration	12 (7.45)	1 (1.61)	10 (12.5)	0.1 (0.01-0.9) <sup>†</sup>
Uterine rupture	12 (7.45)	12 (19.4)	0	32 (1.9-532) <sup>†</sup>
Coagulation disorders	5 (3.11)	1 (1.61)	4 (5)	0.3 (0.03-2.7)

### Results - Risk factors

SOCIODEMOGRAPHIC FACTORS	Peripartum Hysterectomie /embolisatie 2012-2013 (n=161) N, %	Background population 2012-2013 (n=252 272) N, %	Unadjusted RR (95% CI)	p-value
Maternal age ≥ 35 years	68 (42.2)	43 256 (17.1)	2.48 (2.07-2.97)	< 0.0001
BMI at booking ≥ 30 kg/m <sup>2</sup>	12 (7.5)	29 453 (11.6)	0.64 (0.37-1.1)	0.1223

OBSTETRIC FACTORS	Cases (n=161) N, %	Background (n=252 272) N, %	Unadjusted RR (95% CI)	p-value
Parity ≥ 3	30 (18.6)	18 855(7.4)	2.49 (1.8-3.44)	<0.0001
Nulliparity	43 (26.7)	110 711(43.9)	0.61 (0.47-0.79)	<0.0001
Multiplerts (twin)	12 (7.5)	4690 (1.8)	4.01 (2.32-6.91)	<0.0001
Previous caesarean delivery	60 (37.3)	27 007 (10.7)	3.48 (2.85-4.25)	<0.0001
Number of previous CD	1 cs: n=35 (21.7)			
	2 cs: n=17 (10.6)			
	3 cs: n=5 (3.1)			
	4 cs: n=3 (1.9)			
Delivery Mode	(≥22 wks) (n= 159)			
- Caesarean delivery	92 (57.1)	51 211 (20.3)	2.81 (2.46-3.22)	<0.0001
- Vaginal delivery	66 (41)	201 061 (79.7)	0.51 (0.43-0.62)	<0.0001
Artificial Reproductive Technology (IVF/ICSI)	22 (13.7)	9233 (3.7)	3.73 (2.53-5.51)	<0.0001
Abnormal placentation (Previa en/of AIP)	56 (34.8)			
Hemorrhage in previous pregnancies	11 (6.8)			

### Results - Management

	Total N = 161 (%)	H N=81 (%)	H only N=62 (%)	E only N=80 (%)	RR H vs E only (95%CI)	RR H only vs E only (95%CI)
UTEROTONICA	131 (81.4)	53 (65.4)	40 (64.5)	78 (97.5)	0.67 (0.57-0.79) <sup>†</sup>	0.66 (0.55-0.8) <sup>†</sup>
PRESSURE	62 (38.5)	22 (27.2)	17 (27.4)	40 (50.0)	0.54 (0.36-0.83) <sup>†</sup>	0.55 (0.36-0.87) <sup>†</sup>
OVERSEWING	30 (18.6)	17 (21)	14 (22.6)	13 (16.3)	1.29 (0.67-2.48)	1.39 (0.71-2.74)
BALLOON	33 (20.4)	8 (9.8)	6 (9.4)	25 (31.3)	0.3 (0.1-0.6) <sup>†</sup>	0.3 (0.1-0.6) <sup>†</sup>
LIGATION / B-LYNCH	8 (4.9)	7 (8.6)	7 (11.2)	1 (1.2)	6.8 (0.8-54)	8.7 (1.1-69.2) <sup>†</sup>
IV CLOTTING FACTORS	23 (14.3)	15 (18.5)	12 (19.4)	8 (10.0)	1.85 (0.83-4.12)	1.94 (0.84-4.44)

### Results - Outcome

- ICU admission -----113 (70.2%)
  - Mean stay at ICU (dys) 2.8 (1-18)
  - Mean hospital stay (dys) 12.7 (2-33)
- Transfusion -----136 (84.4%)
  - >4 units PC (n=66, 41%) 7.6 (1-31)units
  - FFP (n=108, 67%) 5.2 (1-27)units
  - Platelets (n=57, 35%) 4.14 (1-29)units
- Complications -----42 (26%)
  - Renal (5) , Pulmonary (9), Cardiac (n=2), Hepatic (n=1), Clotting (33)
  - Relaparotomy (3)
- Maternal death -----1 (0.6%, 0.1-3.4)

## Conclusion

- **Prevalence in Belgium**  
of massive obstetric hemorrhage requiring peripartum hysterectomy and/or arterial embolization is **6.4/10 000**
- **Significant risk factors** (in univariate analysis) are  
Caesarean delivery in previous current pregnancy  
Caesarean delivery in current pregnancy,  
Maternal age  $\geq$  35 years,  
Multiparity, Twins and ART.

## Conclusion

- **Choice of intervention depended largely on cause of hemorrhage**  
AIP and uterine rupture : hysterectomy  
Lacerations of genital tract: embolization
- **Successful embolization could possibly preserve fertility in 49.3% of women.**

**Thank you.**