# Preliminary evaluation of maternal and perinatal outcome in women with a caesarean section in the last pregnancy; data from global survey

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# Introduction

**<u>Caesarean section:</u>**

- WHO recommendations: 5% to 15%.

- 1970s: rate of C-section 5%.

- 1990s: rate closely to 50%.

- Latin America: 850,000 unnecessary C-sections performed per year.

- Repercussions in maternal and neonatal health, although a clear causal relationship has not yet been demonstrated.

# WHO Global Survey on Maternal and Perinatal Health 2005

- Objective: to fill the existing gap of evidence on the association between caesarean section and medium/long-term maternal outcomes.

- Results: C-section in the current pregnancy is associated with worse maternal and perinatal outcomes

# Objective: Compare

**Maternal complications and outcome**

**Neonatal outcome**

**Women with and without Caesarean section in the last pregnancy**

**Characteristics**

**Mode of delivery**

# Material and Methods

- **<u>Country selection:</u>** 54 randomly selected countries using a multistage stratified sampling procedure.

- Identified a sample of geographic areas, capital city, province and state (randomly-selected administrative areas).

-  A representative sample of care units.

- Census of hospitals that reported more than 1000 deliveries in the previous year.

- They were included all women admitted for delivery during a fixed data of 2-3 month.

- Data was collected from medical records in an individual form.
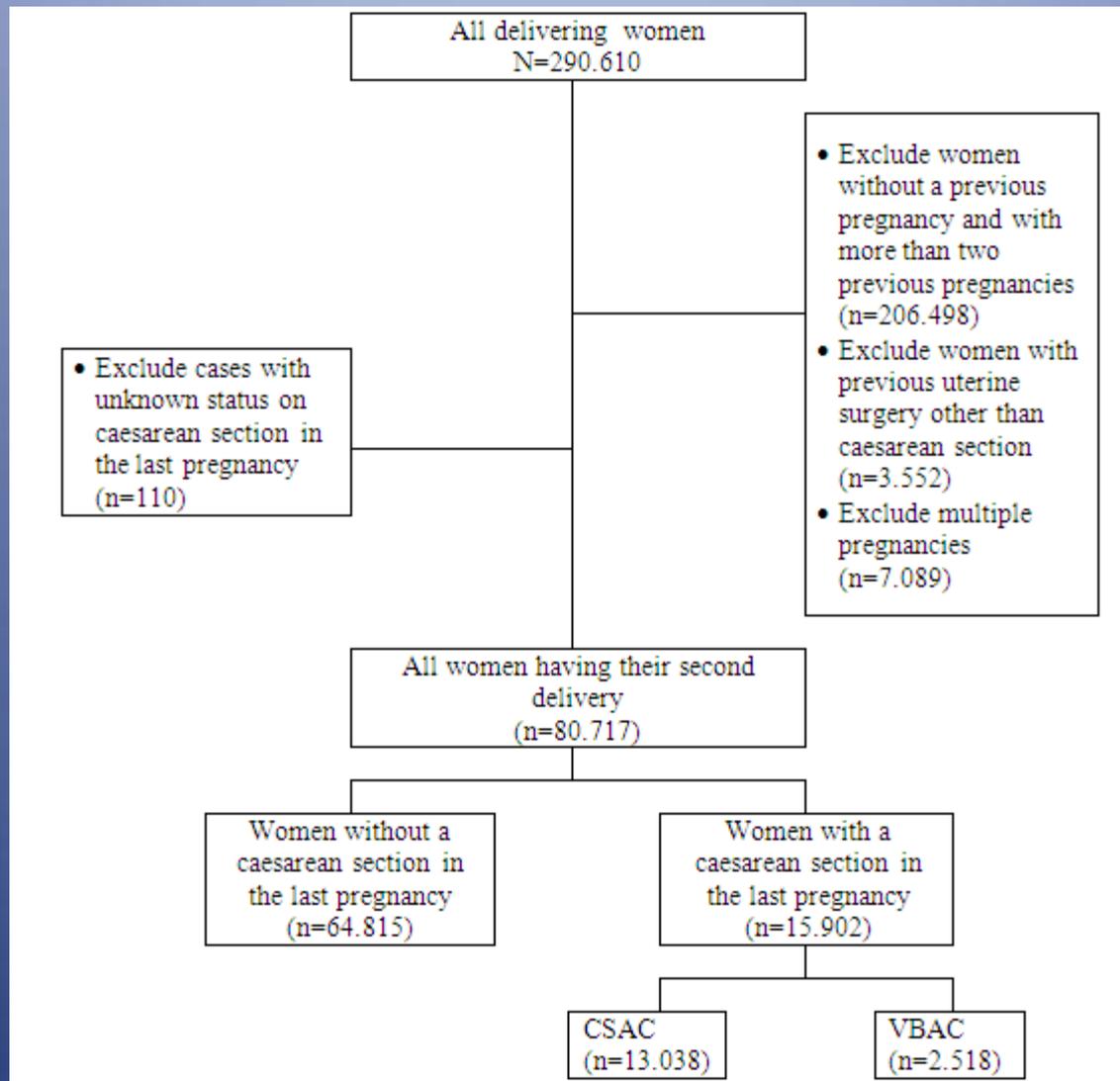
# Results

| Variables | PCLP (n=15.902) | VDLP (n=64.815) | Crude Odds Ratio |
|---|---|---|---|
| *Maternal age* | | | |
| <20 years | 847 | 4.004 | 0,91 (0,84-0,98) |
| 20-34 years | 13.010 | 55.693 | 1,00 |
| ≥35 years | 2.034 | 4.973 | **1,75** (1,66-1,85) |
| *Education (n years)* | | | |
| <7 years | 3.067 | 16.984 | **0,49**(0,46-0,52) |
| 7-12 years | 8.880 | 36.522 | **0,66** (0,63-0,69) |
| >12 years | 3.277 | 8.916 | 1,00 |
| *Marital status n (%)* | | | |
| No partner | 1.543 | 6.328 | 0,99(0,93-1,05) |
| With partner | 14.331 | 58.299 | 1,00 |
| *Antenatal care (%)* | | | |
| 0-3 | 2.744 | 19.034 | **0,50** (0,47-0,52) |
| ≥4 | 12.302 | 42.324 | 1,00 |

# Results

| Variables (n=80.670) | PCLP (n=15.902) | VDLP (n=64.815) | Crude Odds Ratio |
|---|---|---|---|
| **Hypertensive disorders** | 1.325 | 3.151 | **1,78** (1,66- 1,90) |
| **Cardiac/Renal disease** | 96 | 268 | **1,46** (1,16-1,85) |
| **Respiratory condition** | 127 | 394 | **1,32** (1,08-1,61) |
| **Diabetes mellitus** | 259 | 360 | **2,96** (2,52-3,48) |
| **Serious anemia** | 150 | 486 | **1,26** (1,05-1,51) |
| **Urinary infection** | 1.320 | 3.574 | **1,55** (1,45-1,66) |
| **HIV/AIDS** | 13 | 61 | 0,87 (0,48-1,58) |
| **Uterine Low Height** | 158 | 529 | **1,22** (1,02-1,46) |
| **Premature Rupture of membranes** | 1.579 | 6.153 | 1,05 (0,99-1,09) |

Serious anemia: Sickle cell anemia, Severe anemia, Thalassemia

# Results

| Variables (n=80.670) | PCLP (n=15.902) | VDLP (n=64.815) | Crude Odds Ratio |
|---|---|---|---|
| **Mode of delivery** | | | |
| Spontaneous | 2.518 | 54.477 | 1,00 |
| Assisted Vaginal (n=58.448) | 314 | 1.139 | **5,94** (5,23-6,80) |
| C- Section (n=79.164) | 13.038 | 9.131 | **30,89** (29,44-32,41) |

# Results

| Variables (n=80.670) | PCLP (n=15.902) | VDLP (n=64.815) | Crude Odds Ratio |
|---|---|---|---|
| **Severe Maternal Outcome** | | | |
| Maternal death Blood transfusion | 380 | 771 | **2.03** (1.79-2.30) |
| Hysterectomy | 31 | 50 | **2.53** (1.62-3.96) |
| Admission to ICU | 706 | 828 | **3.59** (3.24-3.98) |
| Laparotomy for ruptured uterus | 23 | 19 | **26.19** (14.24-48.15) |
| **Neonatal outcomes** | | | |
| Preterm neonate (GA<37wks) n=71409 | 105 | 487 | 0.86 (0.69-1.06) |
| LBW< 2500 g | 1403 | 5678 | 1.02 (0.96-1.09) |
| VLBW< 1500 g | 160 | 702 | 0.94 (0.79- 1.12) |
| Macrossomia | 887 | 2833 | **1,29** (1.20-1.40) |
| Admission NICU | 2113 | 4372 | **2.11** (2.00-2.23) |
| Early neonatal death | 95 | 403 | 0.96 (0.76-1.20) |

# Results

| Variables | CSAC (n=13038) | VBAC (n=2518) | Odds Ratio Crude |
|---|---|---|---|
| **Maternal age** | | | |
| <20 yr | 614 | 213 | 0,58 (0,49-0,68) |
| 20-34 yr | 10.601 | 2.127 | 1,00 |
| ≥35yr | 1.815 | 175 | **2,08** (1,77-2,44) |
| **Education (n years)** | | | |
| <7 years | 2.354 | 639 | **0,43** (0,37-0,49) |
| 7-12 years | 7.251 | 1.420 | **0,59** (0,67-0,52) |
| >12 years | 2.893 | 335 | 1,00 |
| **Marital status n (%)** | | | |
| No partner | 1.158 | 348 | 0,60 (0,53-0,69) |
| With partner | 11.862 | 2.161 | 1,00 |
| **Antenatal care (%)** | | | |
| 0-3 | 2.031 | 643 | **0,52** (0,47-0,58) |
| ≥4 | 10.333 | 1.704 | 1,00 |

# Results

| Variables | CSAC (n=13.038) | VBAC (n=2.518) | Odds Ratio Crude |
|---|---|---|---|
| Hypertensive disorders | 1155 | 150 | **1.53** (1.29-1.83) |
| Cardiac/Renal disease | 85 | 10 | **1.65** (0.85-3.17) |
| Respiratory condition | 117 | 10 | **2.27** (1.19-4.34) |
| Diabetes mellitus | 241 | 15 | **3.14** (1.86-5.30) |
| Serious anemia | 124 | 20 | 1.20 (0.75-1.93) |
| Urinary infection | 1069 | 227 | 0.90 (0.77-1.05) |
| HIV/AIDS | 12 | 1 | **2.32** (0.30-17.84) |
| Premature Rupture of membranes | 1259 | 267 | 0.90 (0.78-1.04) |
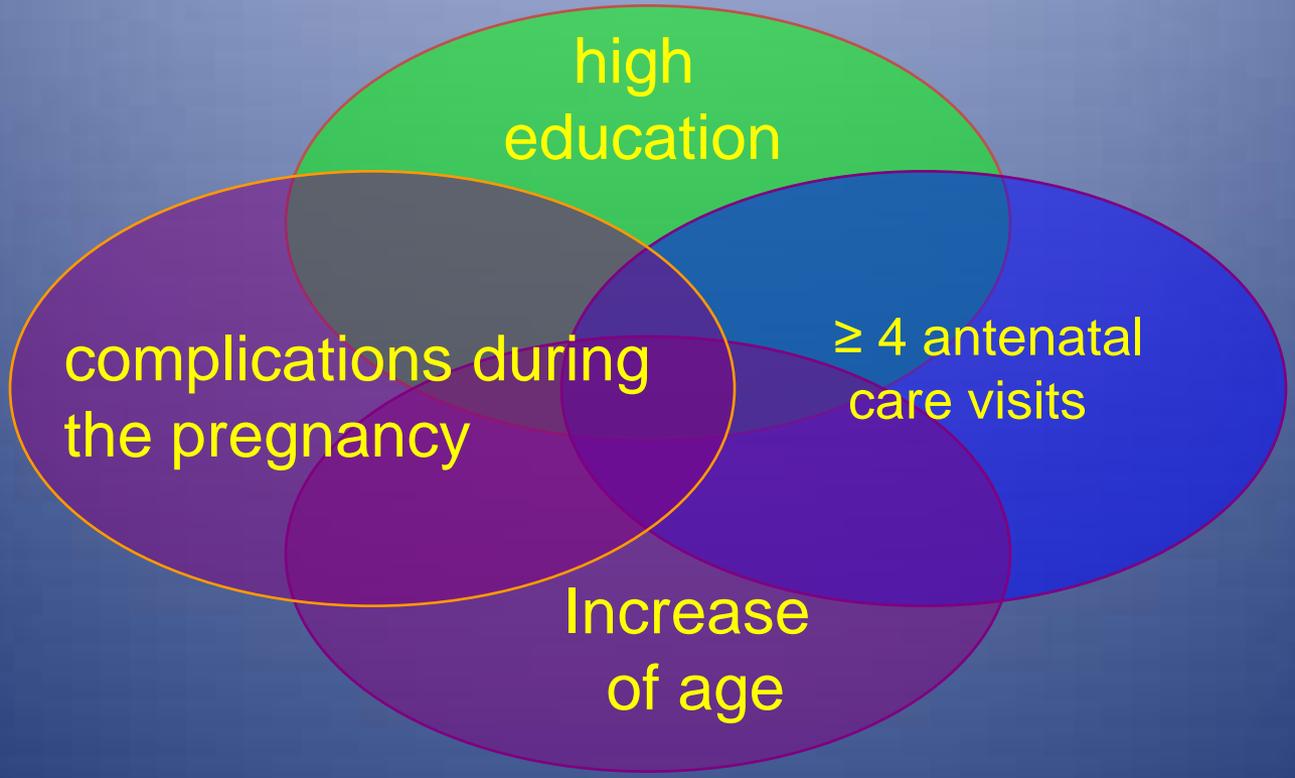
# Conclusion

✓ monitoring women in their first pregnancy and also during the labour induction

✓ monitoring the hospitals with obstetric care

✓ avoid poor maternal and neonatal outcome

✓ Complement the current analysis:

       * maternal mortality

       *isolate the effect (adjusted OR)