

# **Benefits and risks of abortion physiological and reproductive outcome**

**Sophie GAUDU, Philippe FAUCHER,  
Michel TOURNAIRE**

**Saint Vincent de Paul Hospital**

**Paris France**

**[m.tournaire@svp.aphp.fr](mailto:m.tournaire@svp.aphp.fr)**

# Reproductive outcome after induced abortion

- **Surgical abortion**

1. **Fertility**

2. **Uterus**

3. **Miscarriage**

4. **Ectopic pregnancy**

5. **Placenta**

6. **Prematurity**

7. **Preeclampsie**

- **Medical abortion**

# Abortion / Subfertility

Epoch	Location	Number	Results
1973-74	Greece	249	↗ RR 3.4 (1.4, 8.4)
1974-75	Denmark	7,720	No association
Before 1984	Hungary/ Korea	448	No association
1979-81	USA	395	No association
1973-83	England	140	No association
1987-88	Greece	252	↗ RR 2.1 (1.1, 4.0)
1976-87	England	1,468	No association

THORP J.M. et al, 2002, Review Obstet and Gynecol Survey,  
Trichopoulos D et al, Obel E et al, WHO, Daling J et al, Mackenzie  
L et al, Tzomou A et al.

# **Abortion / intra uterine adhesions**

**FRIEDLER G et al 1992**

**Curetage for spontaneous abortion**

<b>1 curetage</b>	<b>16.3 % adhesion</b>
<b>2</b>	<b>14 %</b>
<b>3</b>	<b>32 %</b>

**TAM WH et al 2002**

**After suction**                      **7,7 % adhesions**

**→ Hysteroscopy if menstrual disorders**

# Abortion / subsequent spontaneous abortion

Epoch	Location	Number	Findings
1987-89	Canada	1324	No association
1990-95	Italy	2325	No association
1975-77	Germany	3042	No association
1980-82	USA	3110	No association
1974-82	USA	989	No association
2000-03	Denmark/China		↑ risk if < 3 months

Infante Rivard C et al, Parazzimif et al, Obele et al,  
Bracken M et al, Kline J et al, Zhou W et al.

# Abortion / subsequent ectopic pregnancy I

Epoch	Location	Number	Findings
1976-78	USA	583	No association
1975-80	USA	102,320	No association
1976-78	USA	2,788	No association
1986-87	Greece	140	No association
1992-94	Italy	559	Relative risk of ectopic pregnancy increased 2.9 (1.6-5.3)

.../...

# Abortion / subsequent ectopic pregnancy II

Epoch	Location	Number	Findings
1987-90	Finland	289	No association
1988-90	USA	1,238	No association
1987-92	Norway	3,754	No association
1989-91	France	1,955	Relative risk of ectopic pregnancy increased 1.4 (1.0-2.0). → 7 STUDIES ; 2 ↗

Levin A et al, Chung C et al, Burkman R et al,  
Kalandidi A et al, Parazzini F et al, Skjeldestad F et al,  
Atrash H et al, Tharaux-Deneux C et al.

# Abortion / subsequent placenta previa

Epoch	Location	Number		Findings
1979-80	USA	3,184	↗	
1984-87	USA	2,084	↗	(OR = 1.30)
1993-97	Thailand	16,169	↗	(OR = 2.1)
1982-02	USA	64,359		Risk factors : Abortion NS (2 or more cs ↗) (Advancing maternal age ↗)

Barret J et al, Wu S et al, Taylor V et al, Hendricks MS et al, Harlap S et al, Mandelin M et al, Obel E et al, Levin A et al.



# Abortion / subsequent preterm birth I

**25 studies**

- **13 association RR 1.3 – 2**  
    ↗ with ↗ number of abortion
- **12 NS**
- ↗ in most recent studies

**THORP JM et al, review 2002**

# Abortions / subsequent preterm birth II

Length of gestation	n	% of previous induced abortions	OR	95% CI	Ajusted OR	95% CI
<b>Reference group</b> <b>(39-40 weeks)</b>	<b>618</b>	<b>10.2</b>	<b>1</b>		<b>1.0</b>	
<b>33-34 weeks</b>	<b>276</b>	<b>15.6</b>	<b>1.6</b>	<b>1.1-2.5</b>	<b>1.4</b>	<b>0.9-2.1</b>
<b>28-32 weeks</b>	<b>1490</b>	<b>14.6</b>	<b>1.5</b>	<b>1.1-2.0</b>	<b>1.4</b>	<b>1.0-1.9</b>
<b>22-27 weeks</b>	<b>453</b>	<b>17.9</b>	<b>1.9</b>	<b>1.3-2.7</b>	<b>1.7</b>	<b>1.2-2.5</b>

**MOREAU C et al, France, BJOG 2005**

# Abortion / subsequent preeclampsia

## SEIDMAN DS et al 1989

9771 women

	Preeclampsia
-Primigavida	2.9 %
-Second birth	1.5 %
-Previous induced abortion	↘ (P=0.038)
-Previous spontaneous abortion	NS

## ERAS JL et al 2000

Previous induced or spontaneous abortion	RR 0.35 (0.01-1.01)
--	------------------------

## SAFTLAS AF et al 2003

Previous abortion same partner	RR 0.54 (0.31-0.97)
Previous abortion new partner	RR 1.03 (0.72-1.47)

# **Reproductive outcome medical / surgical abortions**

## **VIRK J et al Denmark 2007**

<b>Medical abortion</b>	<b>11 814</b>	<b>/</b>	<b>Surgical</b>	<b>9104</b>
<b>Spontaneous abortion</b>	<b>12.2 %</b>		<b>12.7 %</b>	<b>NS</b>
<b>Ectopic pregnancy</b>	<b>2.2 %</b>		<b>2.3 %</b>	<b>NS</b>
<b>Preterm birth</b>	<b>5.4 %</b>		<b>6.7 %</b>	<b>NS</b>
<b>Low birth weight</b>	<b>4 %</b>		<b>5.1 %</b>	<b>NS</b>

# Reproductive outcome medical / surgical abortions

GAM C et al, CHINA

Int J Gynecol Obstet 2008

Meta analysis 12 484 cases

Abortion	Medical (%)	Surgical (%)	OR (95% CI)
Miscarriage	2.64	3.9	<u>0.48</u> (0.25-0.92)
Placenta previa	0.70	1.27	<u>0.72</u> (0.29-1.79)
Placental abruption	0.39	0.20	<u>1.63</u> (0.21-12.44)
Pregnancy induced hypertension	0.78	1.05	<u>0.74</u> (0.50-1.1)
Post partum hemorrhage	2.54	4.16	0.60 (0.37-0.98)
Preterm delivery	2.92	2.99	0.98 (0.78-1.22)
Prolonged pregnancy	2.78	2.26	0.85 (0.49-1.48)
Fetal distress	5.45	7.23	0.85 (0.49-1.22)

# Conclusion I abortion / reproductive outcome

**Association** ↗ uterine adhesions  
↗ placenta previa  
↘ preeclampsia

**No association** subfertility (except 1 study)  
spontaneous abortions (except < 3 months)

**Doubt** ectopic pregnancy 7 = ; 2 ↗  
preterm delivery 12 = ; 13 ↗

# Conclusion II

## Comparison medical / surgical abortion

**Difference**

- placenta previa
- placental abruption
- pregnancy induced hypertension
- post partum hemorrhage

**No difference**

- preterm delivery
- prolonged pregnancy
- fetal distress

**Doubt**

Miscarriage ↘ Meta analysis  
= VIRK et al, ZHOU et al