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# Rétention de grossesse: hystéroscopie ou aspiration?

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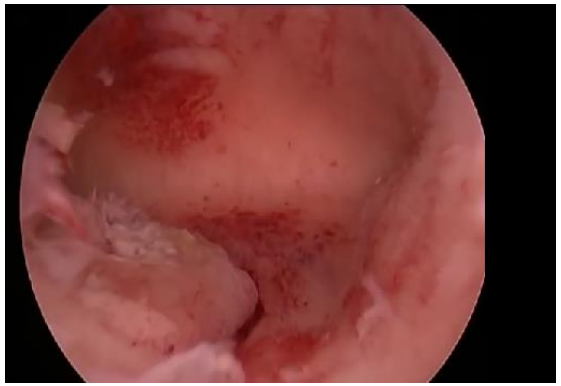
# Conflits d'Intérêts

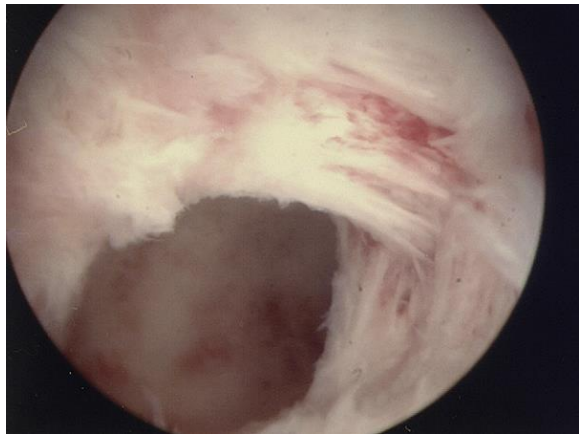




# INTRODUCTION

- Rétention persistante : risque d'adhérences

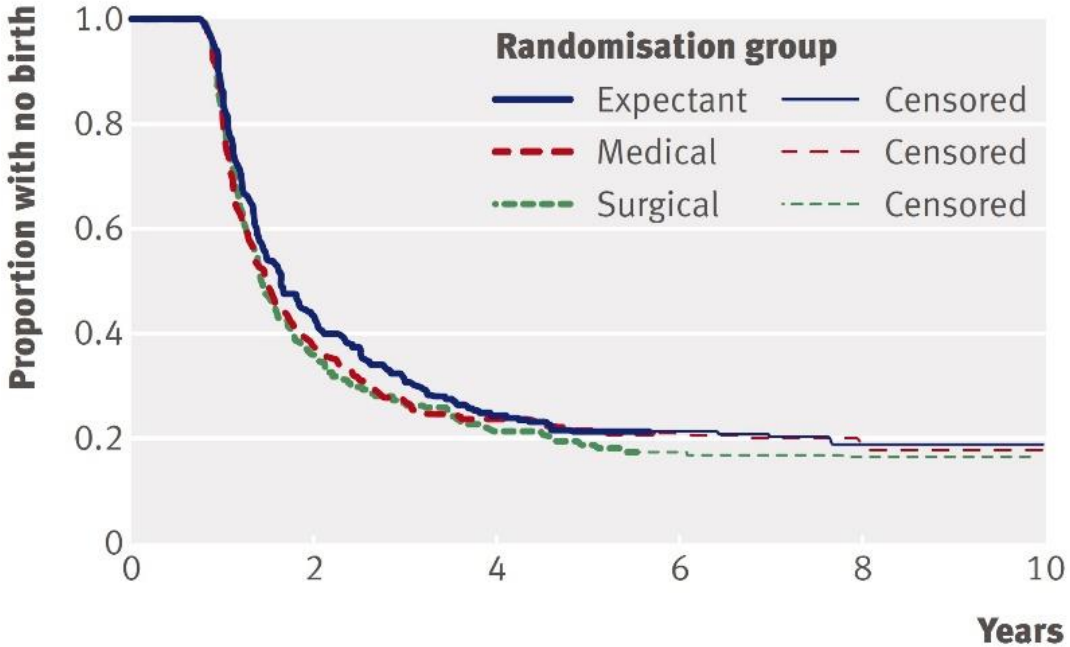




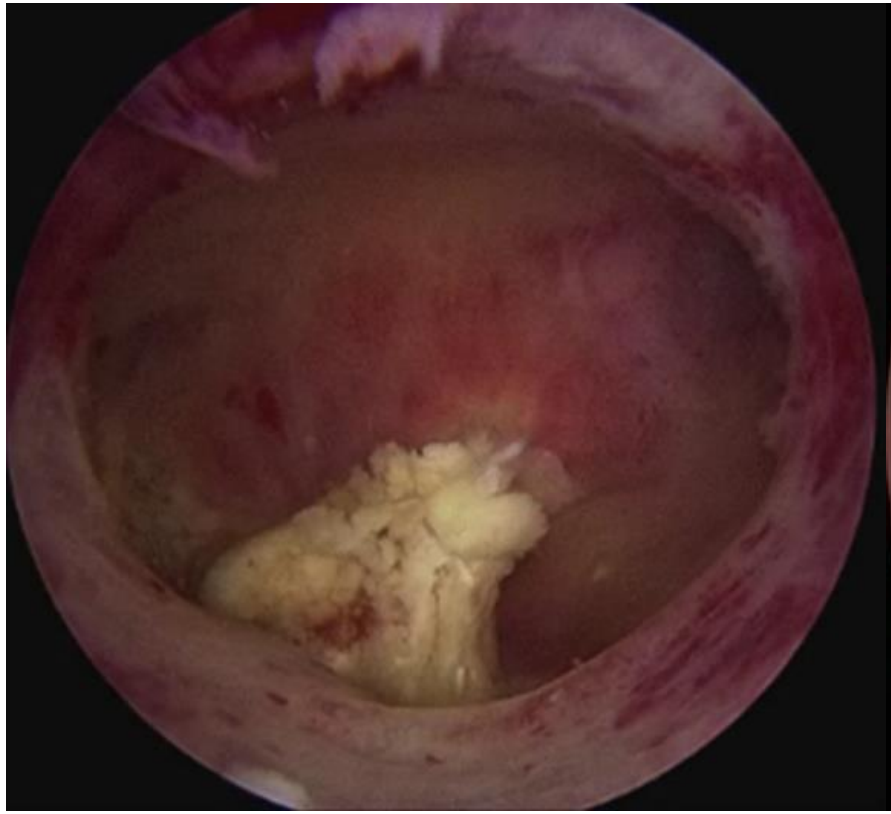
- Aspiration : 19% d'adhérences
  - traumatisme endomètre sain
  - laisse rétention
- Aspirations répétées : 40% d'adhérences
- Hooker, *Human Reproduction Update*, 2013

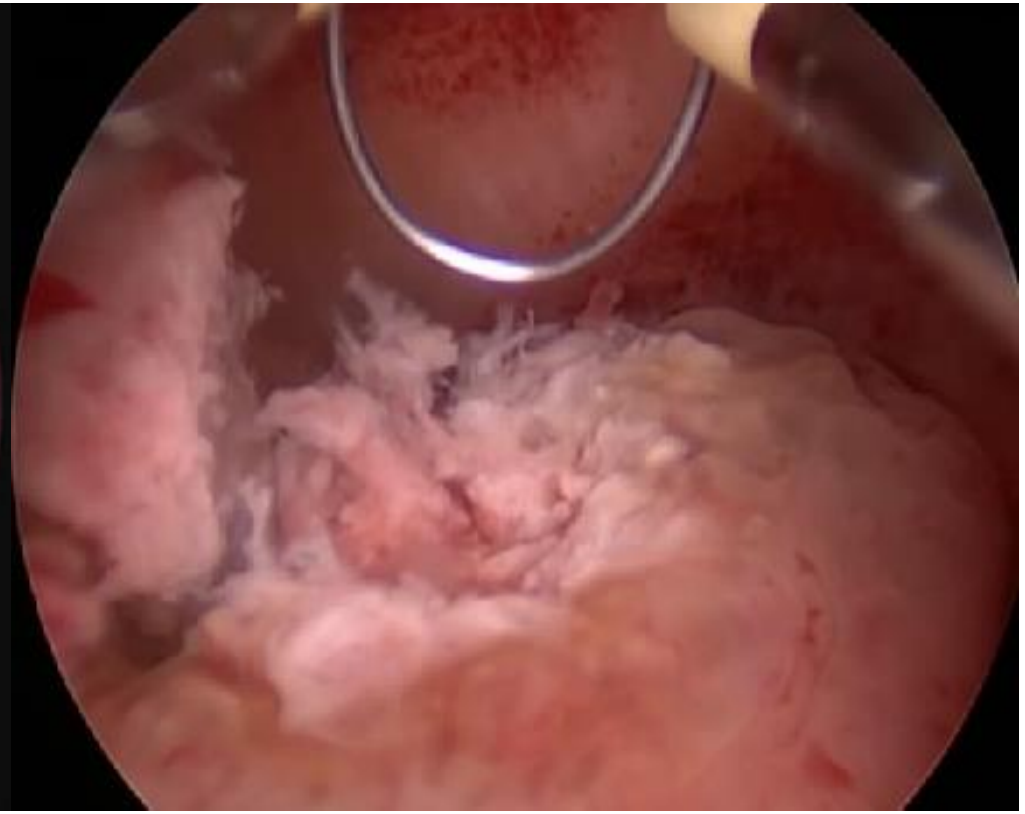
- Adhérences inflammatoires, fibrose : syndrome d'Asherman (aménorrhée, infertilité, tb placentation)

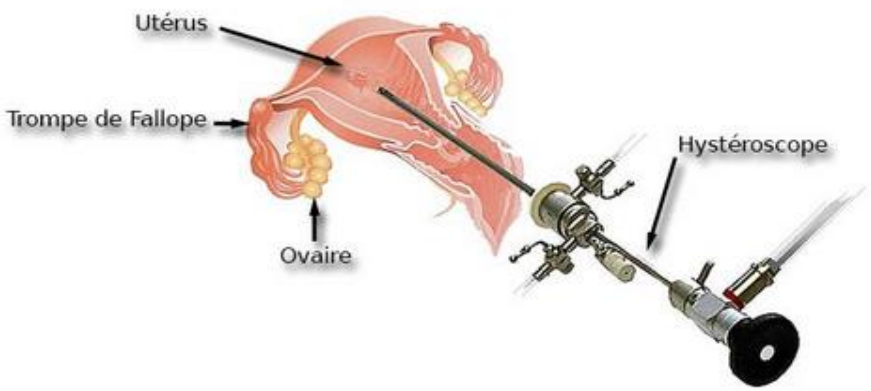
- Fertilité après FCS : 60% à 2 ans, 80% à 5 ans
- Smith, *BMJ*, 2009




- **alternative à l'aspiration** (aveugle)
- **hystéroscopie opératoire** (visualisation cavité utérine)






Utérus
Trompe de Fallope
Ovaire
Hystéroscope

European Journal of Obstetrics & Gynecology and Reproductive Biology 173 (2014) 19–22

Contents lists available at ScienceDirect

European Journal of Obstetrics & Gynecology and Reproductive Biology

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# Hysteroscopic management of retained products of conception: meta-analysis and literature review

Noam Smorgick*, Oshri Barel, Noga Fuchs, Ido Ben-Ami, Moty Pansky, Zvi Vaknin

*Departments of Obstetrics and Gynecology, Assaf Harofe Medical Center, Affiliated with the Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*

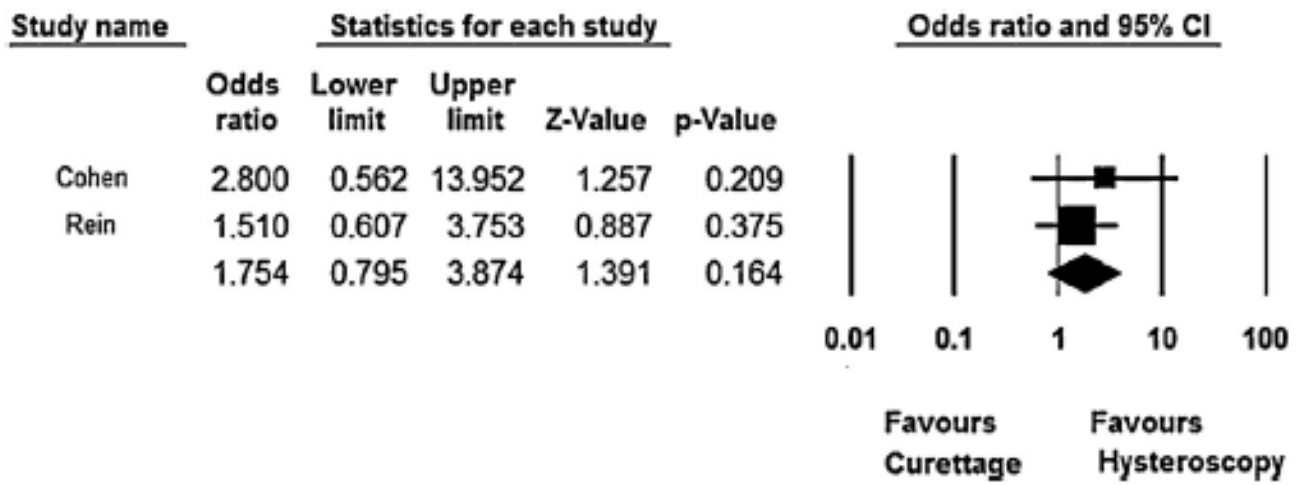



**Fig. 2.** Forest plot comparison of subsequent pregnancies in women undergoing hysteroscopy versus curettage.

# Des résultats discordants?

## Long-term complications and reproductive outcome after the management of retained products of conception: a systematic review

Angelo B. Hooker, M.D.,[a,b] Humeyra Aydin, M.D.,[b] Hans A. M. Brölmann, M.D., Ph.D.,[b] and Judith A. F. Huirne, M.D., Ph.D.[b]

[a] Department of Obstetrics and Gynaecology, Zaans Medisch Centrum, Zaandam; and [b] Department of Obstetrics and Gynaecology, VU University Medical Center, Amsterdam, the Netherlands

**TABLE 2**

**Distribution of pregnancy preceding RPOC and the extent of IUAs.**

| Pregnancy preceding RPOC | HR (%) | D&C | P[a] |
|---|---|---|---|
| First or second trimester | 23 (15.6) | 10 (5.2) | <.0001 |
| Delivery | 71 (48.3) | 140 (72.9) | <.01 |
| Not reported | 53 (36.1) | [illegible] | <.01 |
| Total | [illegible] (43.4) | 192 (56.6) | |
| Clinical category of IUAs | HR (n = 141) | D&C (n = 189) | |
| Mild | 10 | 21 | NS |
| Moderate | 5 | 29 | <.001 |
| Severe | 3 | 6 | NS |
| Total | 18 (12.8) | 56 (29.6) | <.001 |

[a] Fisher's exact test.

*Hooker. Long-term outcome after RPOC. Fertil Steril 2016.*

**TABLE 3**

**Characteristics of the studies reporting on reproductive outcome in women treated for RPOC.**

| Study | Design | Study period | Characteristics of the women | Follow-up, months | Treatment | Time to conception | Case no. | Conception rate (%) | Ongoing pregnancy/live birth rate | Miscarriage rate |
|---|---|---|---|---|---|---|---|---|---|---|
| Ben-Ami (2014) | Retro | 2000–2010 | RPOC after abortion or delivery, histological confirmed | NR<br>NR | HR<br>D&C | 7.4 (SD, 7)<br>12.9 (SD, 16.8) | 83<br>94 | 77 (92.8)<br>87 (92.6) | 67 (87.0)<br>83 (95.4) | 16 (20.8)<br>11 (12.6) |
| Golan (2011) | Retro | 2001–2007 | RPOC after medical TOP, D&C, or delivery. | 36 | HR | NR | 28 | 23 (82.1) | 21 (91.3) | 1 (4.3) |
| Rein (2011) | Pros | 2004–2007 | RPOC after D&E for first- or second-trimester miscarriage or term delivery | 24 (8–38) | HR<br>D&C | 27 (7–39)<br>34 (10–36) | 45<br>37 | 31 (68.9)<br>22 (59.5) | 26 (83.9)<br>19 (77.3) | 3 (9.7)<br>3 (13.6) |
| Faivre (2009) | Pros | '96–'06 | RPOC after spontaneous miscarriage, after D&E, medical TOP, or term delivery. | 43 (23–69) | HR | NR | 30 | 23 (76.7) | 21 (91.3) | NR |
| Jimenez (2009) | Retro | '01–'08 | RPOC after abortion or delivery | NR | HR | 8.4 (SD, 7.1) | 30 | 24 (80) | 19 (62.5) | 4 (16.7) |
| Cohen (2001) | Retro | '97–'00 | RPOC after D&C or delivery | 6 (6–42) | HR<br>D&C | 7.3 (SD, 6.7)<br>11.0 (SD, 6.4) | 17<br>16 | 14 (82.4)<br>10 (62.5) | 13 (71.4)<br>7 (70) | 1 (7.1)<br>3 (30) |
| Total | | | | | | | 380 | 311/380 (81.8) | 278/380 (73.2) | 42/350 (12) |

*Note:* NR = not reported; Pros = prospective study; Retro = retrospective study.

*Hooker. Long-term outcome after RPOC. Fertil Steril 2016.*

CLINICAL TRIAL

# Hysteroscopic morcellation vs. curettage for removal of retained products of conception: a multicenter randomized controlled trial

Liselot P. Wagenaar, M.D.,[a] Tjalina W. Hamerlynck, M.D., Ph.D.,[b,c] Celine M. Radder, M.D., Ph.D.,[d] Louisette W. Peters, M.D.,[d] Steven Weyers, M.D., Ph.D.,[b,c] Benedictus C. Schoot, M.D., Ph.D.,[a,b] and Huib A. van Vliet, M.D., Ph.D.[a,b]

**TABLE 3**

**Postoperative course.**[a]

| Primary outcome | HM (73) | EVA (80) | Difference (95% CI) |
|---|---|---|---|
| Postoperative complications | 2 (2.7) | 1 (1.3) | 1.4 (−3.1 to 6)[b] |
| Hemorrhage (>500 cc) | 2 (2.7) | 0 (0) | |
| Other | 0 (0) | 1 (1.3) | |
| Rehospitalization | 2 (3.1) | 1 (1.5) | 1.2 (−3.5 to 6.0)[b] |
| Second-look hysteroscopy performed | 63 (86.3) | 64 (80) | 6.3 (−5.5 to 18.1)[b] |
| Completeness of removal at second-look hysteroscopy | 60 (95.2) | 52 (82.5) | −14 (−24.9 to −3.1)[b] |
| Additional treatment | 8 (12.5) | 21 (32.8) | −20.1 (−34.3 to −6)[b] |
| Operative hysteroscopy | 8 (12.5) | 21 (32.8) | |
| For RPOC | 3 (4.7) | 9 (14.1) | |
| For IUAs | 6 (9.4) | 13 (20.3) | |
| Vacuum curettage | 1(1.6) | 0 (0) | |
| Laparoscopic repair | 0 (0) | 1 (1.6) | |

CI = confident interval; EVA = electric vacuum aspiration; HM = hysteroscopic morcellation; IUAs = intrauterine adhesions; RPOC = retained products of conception.
[a] Data are mean ± standard deviation, median (interquartile range [25%–75%], or n (%) unless otherwise specified. Percentage excluded patients with missing values.
[b] Absolute risk differences and 95% CIs were estimated.

*Wagenaar. Hysteroscopic morcellation of RPOC: RCT. Fertil Steril 2023.*

- Toutes rétentions..
- Curetage aspiratif immédiat vs Hystéro morcellateur à plus de 8 semaines…

**TABLE 4**

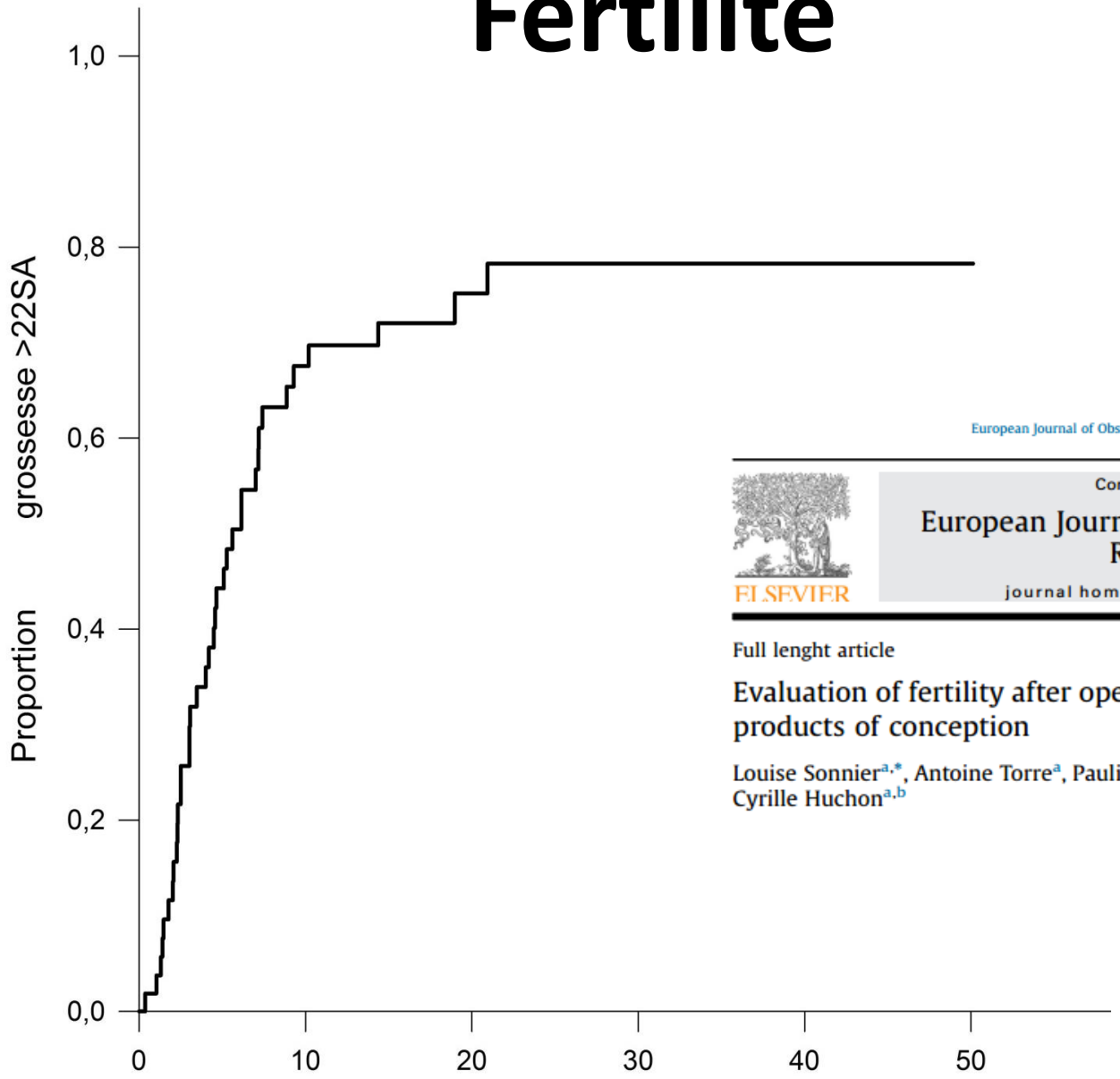
**Primary outcome.**[a]

| Primary outcome | HM (63)[b] | EVA (64)[b] | Difference (95% CI) | *P* value |
|---|---|---|---|---|
| Presence of IUAs[c] | 9 (14.3) | 13 (20.6) | −6 (−19.1 to 7.1)[d] | .348 |
| Mild | 4 (44.4) | 3 (23.1) | | |
| Moderate | 3 (33.3) | 6 (46.2) | | |
| Severe | 2 (22.2) | 4 (30.8) | | |

CI = confident interval; EVA = electric vacuum aspiration; HM = hysteroscopic morcellation; IUAs = intrauterine adhesions.
[a] Data are mean ± standard deviation, median (interquartile range [25%–75%]), or n (%) unless otherwise specified. Percentage excluded patients with missing values. All *P* values are from chi-square test unless otherwise specified.
[b] The number of patients who underwent second-look procedure.
[c] Presence of IUAs as diagnosed with second-look hysteroscopy after at least 1 menstruation or after a minimum period of 4 weeks after removal of the placental remnants.
[d] Absolute risk differences and 95% CIs were estimated.

*Wagenaar. Hysteroscopic morcellation of RPOC: RCT. Fertil Steril 2023.*

# Fertilité




European Journal of Obstetrics & Gynecology and Reproductive Biology 211 (2017) 98–102

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European Journal of Obstetrics & Gynecology and Reproductive Biology

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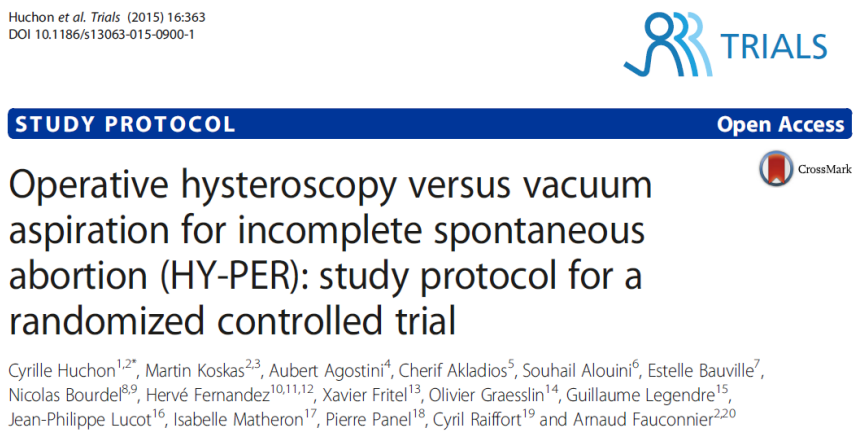
Full lenght article

## Evaluation of fertility after operative hysteroscopy to remove retained products of conception

Louise Sonnier[a,*], Antoine Torre[a], Pauline Broux[a], Arnaud Fauconnier[a,b], Cyrille Huchon[a,b]

# Hypothèse

**L'hystéroscopie opératoire serait une technique chirurgicale plus efficace et moins dangereuse que le curetage aspiratif intra-utérin pour le traitement des avortements spontanés incomplets**



Huchon *et al. Trials* (2015) 16:363
DOI 10.1186/s13063-015-0900-1

TRIALS

STUDY PROTOCOL Open Access

Operative hysteroscopy versus vacuum aspiration for incomplete spontaneous abortion (HY-PER): study protocol for a randomized controlled trial

Cyrille Huchon[1,2*], Martin Koskas[2,3], Aubert Agostini[4], Cherif Akladios[5], Souhail Alouini[6], Estelle Bauville[7], Nicolas Bourdel[8,9], Hervé Fernandez[10,11,12], Xavier Fritel[13], Olivier Graesslin[14], Guillaume Legendre[15], Jean-Philippe Lucot[16], Isabelle Matheron[17], Pierre Panel[18], Cyril Raiffort[19] and Arnaud Fauconnier[2,20]

# Critères d'inclusion

- Patiente majeure de moins de 45 ans, assurée sociale, présentant une rétention intra-utérine après avortement spontané incomplet du premier trimestre (<14 SA) d'une grossesse désirée.

- Rétention intra-utérine diagnostiquée à l'échographie pelvienne transvaginale retrouvant une image hétérogène ou un sac entre 15 et 50 mm d'épaisseur.

- Décision de prise en charge chirurgicale de l'avortement spontané incomplet par l'équipe soignante et la patiente.

# Critères de non inclusion

- Patiente porteuse d’une malformation utérine connue.
- Patiente ayant déjà bénéficié d’un traitement chirurgical pour la rétention intra-utérine en cours.
- Patiente nécessitant un geste hémostatique en urgence pour métrorragies abondantes.
- Patiente porteuse d’un dispositif intra-utérin.
- Grossesse évolutive ou extra-utérine.
- Rétention intra-utérine consécutive à une IVG.
- Grossesse obtenue par assistance médicale à la procréation.

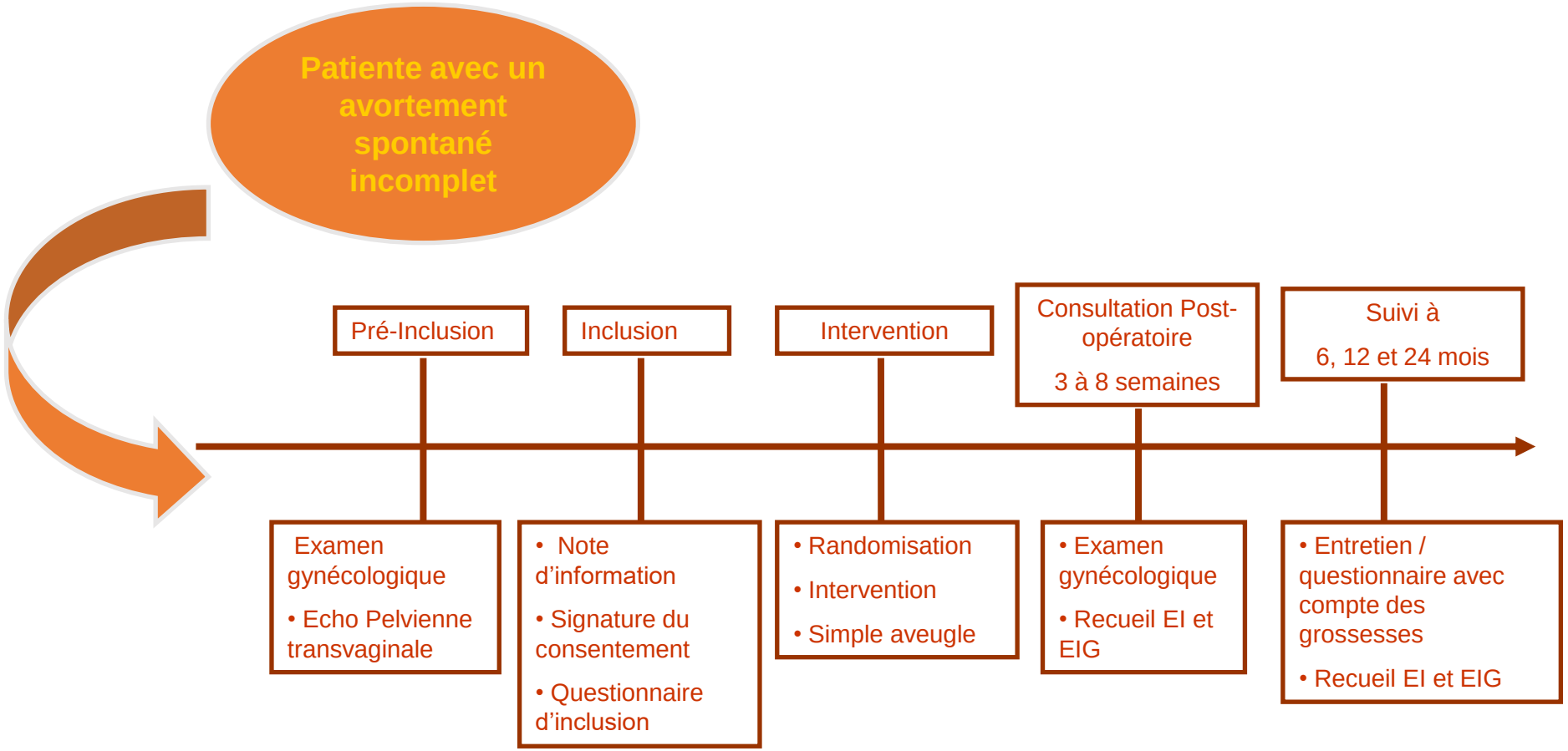
# Design

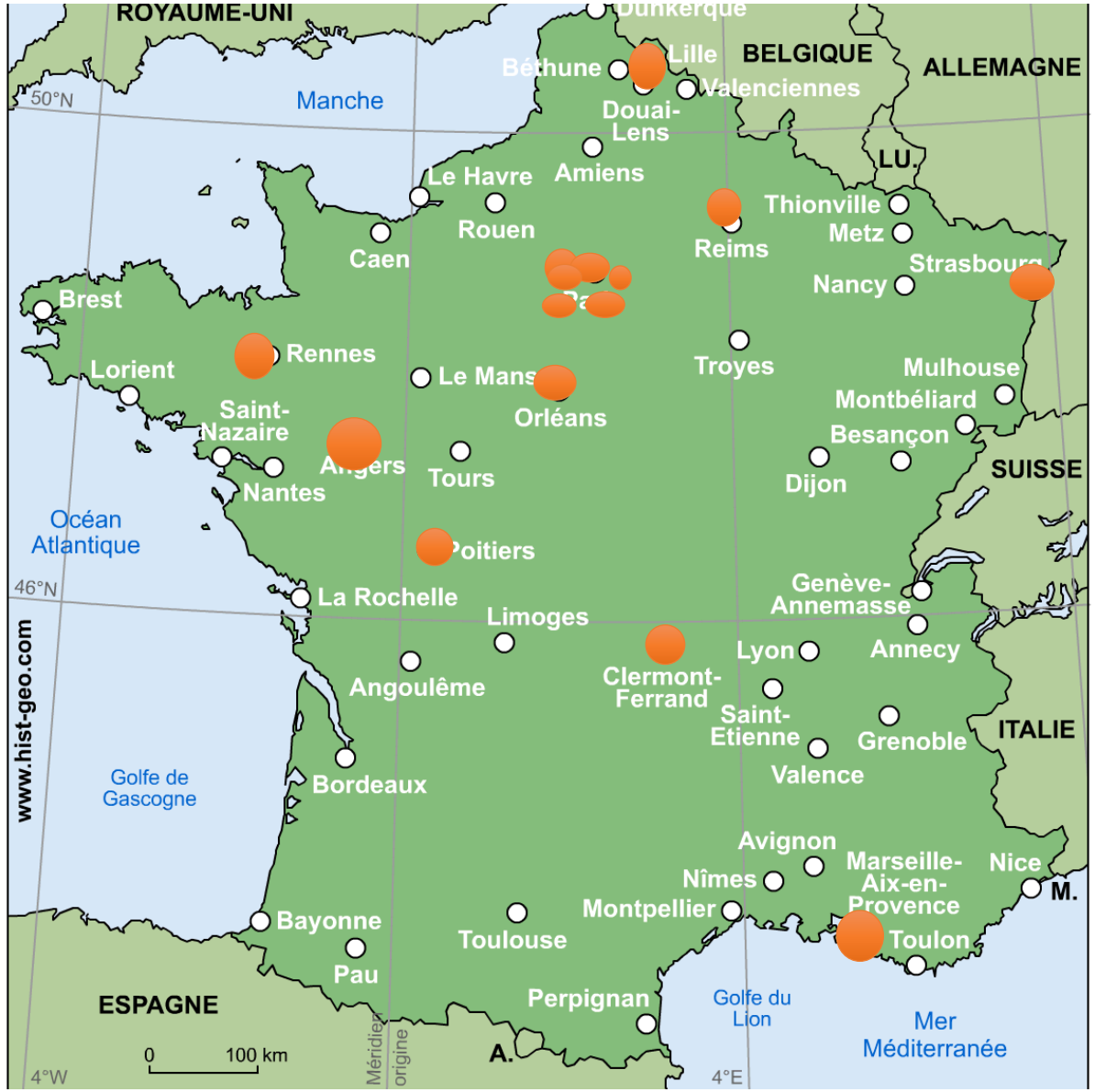
- **Essai, multicentrique randomisé de suivi de deux bras de patientes traitées chirurgicalement pour un avortement spontané incomplet soit par curetage aspiratif, soit par hystéroscopie opératoire.**

- **Procédure de randomisation informatisée au bloc opératoire en simple aveugle pour la patiente**

# Schéma de l'étude

## Outcome= Take-home baby

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# Objectif principal d'HYPER

**Démontrer que le traitement chirurgical par hystéroscopie opératoire des rétentions après avortements spontanés incomplets permet d'augmenter la fertilité comparativement au curetage aspiratif.**

# Objectifs secondaires de l'étude

- **Comparer les délais d'obtention de grossesse entre les deux traitements**

- **Démontrer que l'hystéroscopie opératoire entraine une diminution des complications per et postopératoires**

- **Démontrer que l'utilisation de l'hystéroscopie opératoire diminue le taux de réinterventions chirurgicales**

# Critères de jugement

**Principal:**

Grossesses intra-utérines évolutives > 22 SA dans les deux ans après prise en charge.

| Grade | |
|---|---|
| 1 | Any deviation from the normal postoperative course without the need for pharmacological treatment or surgical, endoscopic and radiological interventions.<br>Acceptable therapeutic regimens are: drugs as antiemetics, antipyretics, analgetics, diuretics and electrolytes and physiotherapy.<br>This grade also includes wound infections opened at the bedside. |
| 2 | Requiring pharmacological treatment with drugs other than such allowed for grade I complications. Blood transfusions, antibiotics and total parenteral nutrition are also included. |
| 3 | Requiring surgical, endoscopic or radiological intervention |
| 3a | Intervention under regional/local anesthesia |
| 3b | Intervention under general anesthesia |
| 4 | Life-threatening complication requiring intensive care/intensive care unit management |
| 4a | Single organ dysfunction |
| 4b | Multi-organ dysfunction |
| 5 | Patient demise |

**Secondaires:**

- Délai d'obtention de grossesse
- Fausses couches spontanées et grossesses extra-utérines dans le suivi des patientes
- Taux de complications chirurgicales selon la classification de Clavien-Dindo
- Réinterventions chirurgicales secondaires à la prise en charge de la rétention intra-utérine.

# Nombre de Sujets nécessaires

- En prenant un **taux de naissance vivante moyen à 2 ans de 60%**
- Hypothèse que **l'hystéroscopie augmente d'au moins 20% ce taux**
- Puissance=80%; risque a=0,05 (bilatéral),
- Inclusion de **260 patientes par bras**.
- **Estimation de 10% de perdues de vue**,
- Inclusion de **572 patientes** (286 par bras).

Research

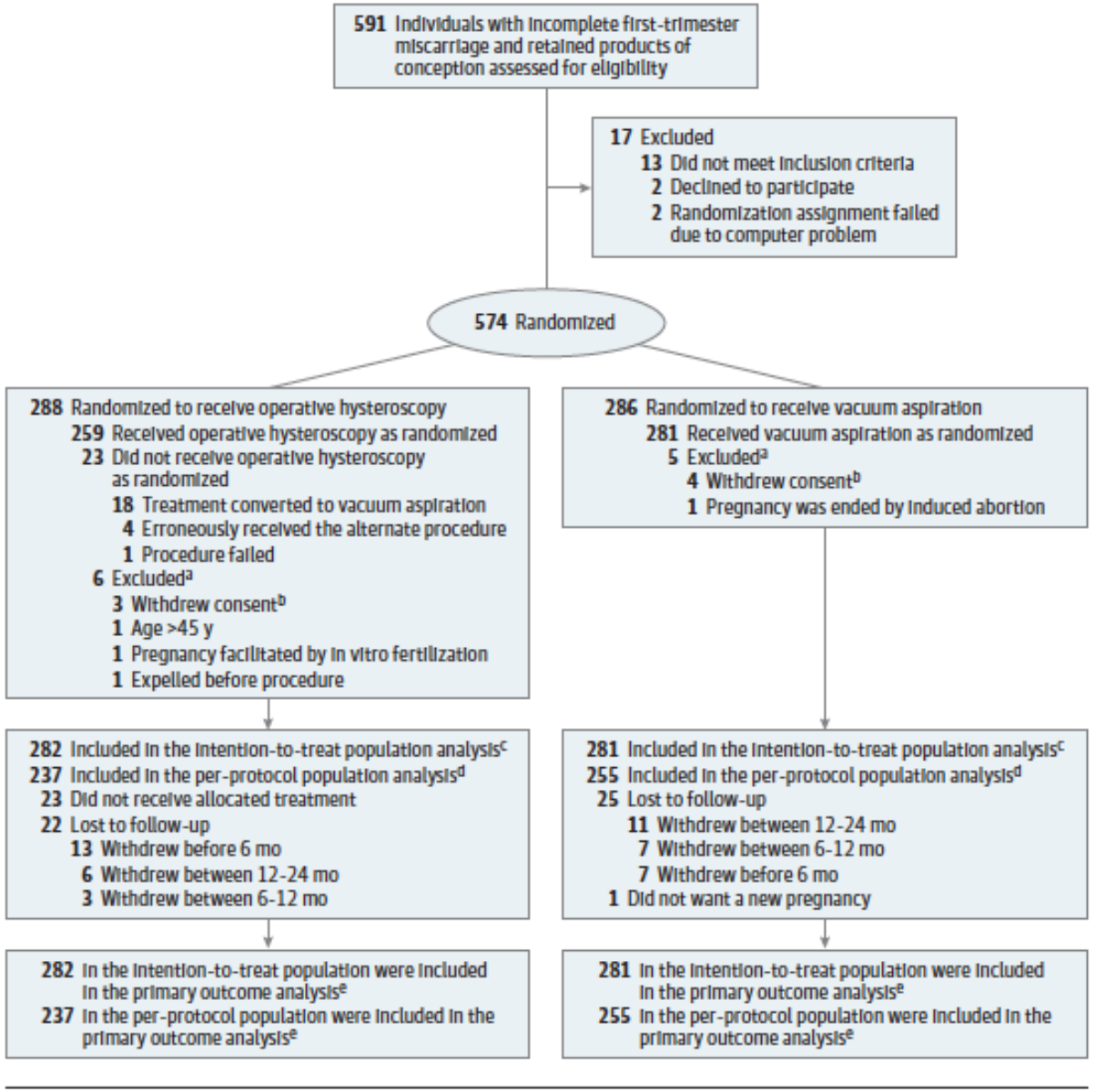
JAMA | Original Investigation

# Operative Hysteroscopy vs Vacuum Aspiration for Incomplete Spontaneous Abortion
## A Randomized Clinical Trial

Cyrille Huchon, MD, PhD; Hocine Drioueche, MSc; Martin Koskas, MD, PhD; Aubert Agostini, MD, PhD; Estelle Bauville, MD; Nicolas Bourdel, MD, PhD; Hervé Fernandez, MD, PhD; Xavier Fritel, MD, PhD; Olivier Graesslin, MD, PhD; Guillaume Legendre, MD, PhD; Jean-Philippe Lucot, MD; Pierre Panel, MD; Cyril Raiffort, MD; Géraldine Giraudet, MD, PhD; Laurence Bussières, PhD; Arnaud Fauconnier, MD, PhD

# FLOW CHART

**Figure 1. Recruitment, Randomization, and Follow-up in the HY-PER Trial**




[a] Eleven participants were excluded after randomization and excluded from all further analyses (6 from the hysteroscopy group; 5 from the vacuum aspiration group).

[b] According to the French law, participants who have withdrawn their consent cannot be included in the analysis.

[c] The intention-to-treat analysis was performed according to the treatment group to which the patients were assigned at randomization, regardless of the procedure they received and the duration of their follow-up. Individuals denoted as *excluded* were not included in the intention-to-treat analysis.

[d] The per-protocol analysis included all randomized patients except for those who did not receive the complete allocated surgery after randomization and the patients lost to follow-up.

[e] The intention-to-treat population and per-protocol population were used to assess the primary outcome. The primary outcome was the occurrence of an intrauterine pregnancy with a duration beyond 22 weeks of gestation in the 2 years after the randomization.

# PATIENTES

| | Hystéroscopie N=282 | Aspiration N=281 |
|---|---|---|
| Age, années, (Moyenne, DS) | 33,2 (5,4) | 32,1 (5,4) |
| Gestité (Mediane, Min-Max) | 2 (1-10) | 2 (1-11) |
| Parité (Mediane, Min-Max) | 1 (0-9) | 1 (0-6) |
| ATCD FCS (%) | 89 (32%) | 98 (35%) |
| ATCD curetage , N (%) | 36 (12,8%) | 36 (12,8%) |
| Semaines d'aménorrhées, (Moyenne, DS) | 11,4 (2,5) | 11,8 (3,0) |
| Métrorragies, N(%) | 151 (54%) | 134 (48%) |
| Douleurs, N (%) | 79 (28%) | 84 (30%) |
| Epaisseur rétention, (Moyenne, DS) | 30,3 (10,8) | 29,3 (10,3) |

**Table 2. Outcomes at 2 Years for Included Randomized Patients[a]**

| | No. (%) | | | |
|---|---|---|---|---|
| | Hysteroscopy (n = 282)[b] | Vacuum aspiration (n = 281)[b] | Difference, % (95% CI) | *P* value |
| Primary outcome[c] | | | | |
| Ongoing pregnancy lasting beyond wk 22 of gestation | 177 (62.8) | 190 (67.6) | −4.8 (−13.0 to 3.0)[d] | .23[e] |
| Secondary outcomes | | | | |
| Time to conception, median (IQR), mo | 5.7 (2.8 to 11.0) | 4.9 (3.2 to 9.5) | 0.4 (−0.4 to 1.2)[f] | .40[g] |
| Surgical reintervention to empty uterus | 7 (2.5) | 1 (0.4) | 2.1 (0.3 to 4.5)[d] | .07[h] |
| Subsequent miscarriage | 47 (16.7) | 36 (12.8) | 3.9 (−2.0 to 9.7)[d] | .20[e] |
| Subsequent ectopic pregnancy | 3 (1.1) | 4 (1.4) | −0.4 (−2.4 to 1.6)[d] | .72[h] |
| Clavien-Dindo surgical complication grade ≥3 at surgery or during the 2-y follow-up[i] | 10 (3.5) | 9 (3.2) | 0.3 (−2.7 to 3.5)[d] | .82[e] |
| Other outcomes | | | | |
| Duration of surgery, median (IQR) [No.], min | 30.0 (20.0 to 45.0) [272] | 11.5 (8.0 to 15.0) [270] | 17.0 (15.0 to 20.0)[f] | <.001[g] |
| Duration of hospitalization, median (IQR) [No.], d[j] | 0.0 (0.0 to 0.0) [271] | 0.0 (0.0 to 0.0) [266] | 0.0 (0.0 to 0.0)[f] | .03[g] |
| Duration of hospitalization ≥1 d, No./total (%)[j] | 37/271 (13.7) | 21/266 (7.9) | 5.8 (0.5 to 11.1)[d] | .03[e] |

[a] Among the 574 patients randomized, 11 patients were excluded postrandomization: 4 due to eligibility (1 excluded due to age >45 years, 1 due to pregnancy facilitated by in vitro fertilization, 1 due to expulsion before procedure, 1 due to retention after induced abortion) and 7 due to withdrawn consent according to the French law.

[b] Indicates the number of patients except for categories in which another numeric value is reported.

[c] Ongoing pregnancy of at least 22 weeks' duration during the 2-year follow-up. Ongoing pregnancies beginning during the 2-year follow-up but with a duration of less than 22 weeks of gestation by the end of the follow-up did not fulfill the primary outcome definition, even if a pregnancy that began during the follow-up resulted in a live birth after the 2-year follow-up period.

[d] Absolute risk differences and 95% CIs were estimated using a generalized linear model.

[e] Calculated using the $\chi^2$ test.

[f] Calculated using the Hodges-Lehmann confidence interval estimator for median differences.

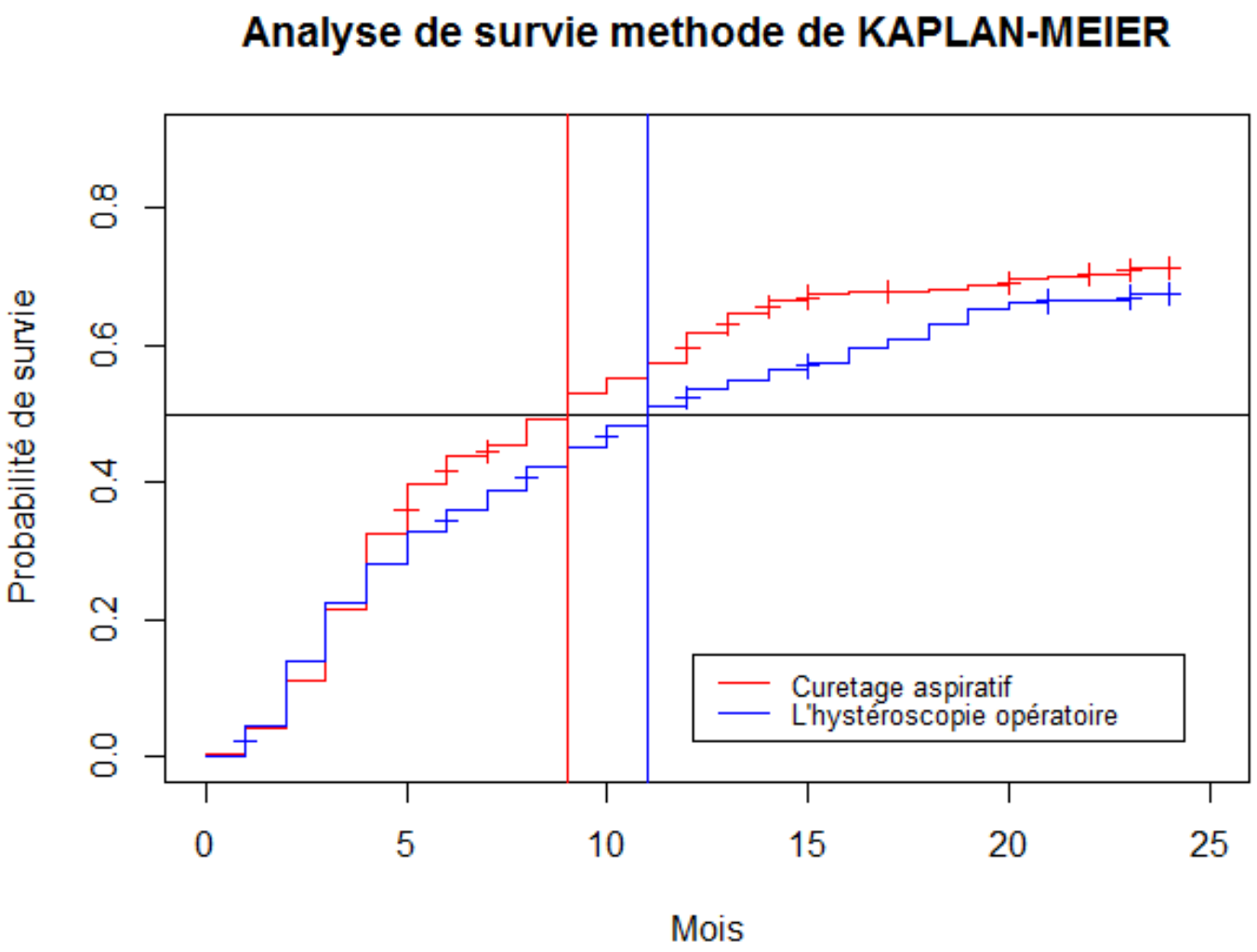
[g] Calculated using the Wilcoxon-Mann-Whitney test.

[h] Calculated using the Fisher exact test.

[i] The Clavien–Dindo classification is a standardized grading system of surgical complications.[17] Grade 1 is defined as any deviation from the normal postoperative course without the need for pharmacological treatment or surgical, endoscopic, or radiological interventions. Grade 2 is defined as complications requiring pharmacological treatment with drugs other than those permitted for grade 1 complications. Grade 3 is defined as surgical complications requiring surgical, endoscopic, or radiological intervention (3a without general anesthesia and 3b under general anesthesia). Grade 4 is defined as a life-threatening complication that requires management in a high dependency.

[j] All patients were hospitalized in gynecologic departments, and no cases were managed in emergency departments. The majority of patients were hospitalized in day surgery. The number of days of hospitalization thus corresponds with the number of nights spent in hospital for the surgical management of the incomplete spontaneous abortion.

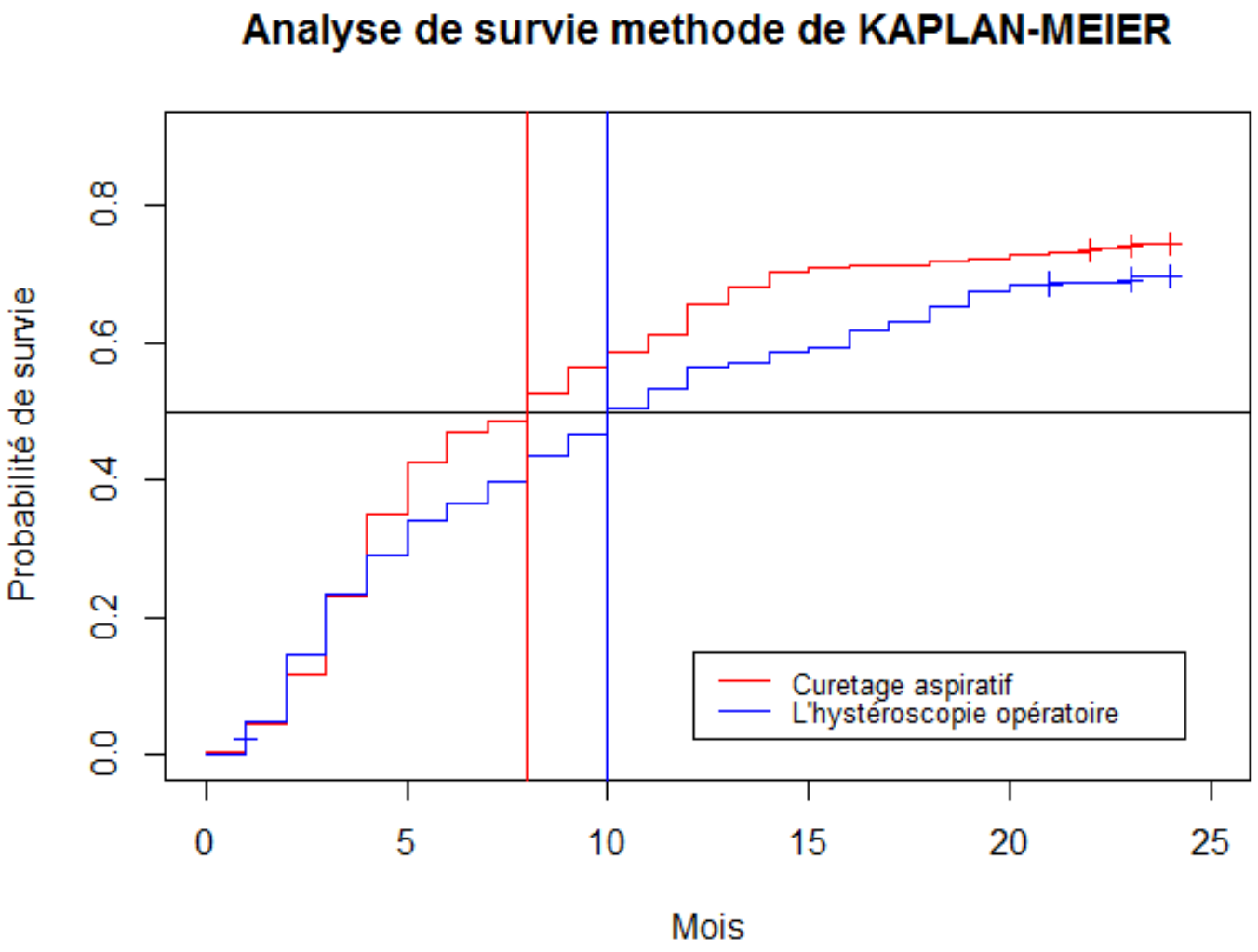
# ANALYSE DE SURVIE ITT




**HR: 0,87, 95% CI 0,71-1,07**

**P=0,18**

# ANALYSE DE SURVIE PERPROTOCOLE




**HR: 0,85; 95% CI: 0,69-1,04**

**P=0,11**

# COMPLICATIONS

**Table 3. Summary of Adverse Events at 2 Years for Included Randomized Patients[a]**

| | No. (%) | | |
|---|---|---|---|
| | Hysteroscopy (n = 282)[b] | Vacuum aspiration (n = 281)[b] | Difference, % (95% CI) |
| Intraoperative adverse events | | | |
| Failure of the planned procedure, No./total (%)[c] | 19/278 (7) | 0/281 (0) | 6.8 (4.1 to 10.4)[d] |
| Uterine perforation | 4 (1.4) | 1 (0.4) | 1.1 (−0.5 to 3.0)[d] |
| Hemorrhage ≥500 mL[e] | 2 (0.7) | 3 (1.1) | −0.4 (−2.4 to 1.6)[d] |
| Postoperative adverse events | | | |
| Intervention to treat uterine synechia | 2 (0.7) | 5 (1.8) | −1.1 (−3.4 to 1.0)[d] |
| Intervention for tubal infertility or adhesion | 1 (0.4) | 0 | 0.4 (−1.0 to 2.0)[d] |

[a] Among the 574 patients randomized, 11 patients were excluded postrandomization: 4 due to eligibility (1 excluded due to age >45 years, 1 due to pregnancy facilitated by in vitro fertilization, 1 due to expulsion before procedure, 1 due to retention after induced abortion) and 7 due to withdrawn consent according to the French law.

[b] Indicates the number of patients except for categories in which another numeric value is reported.

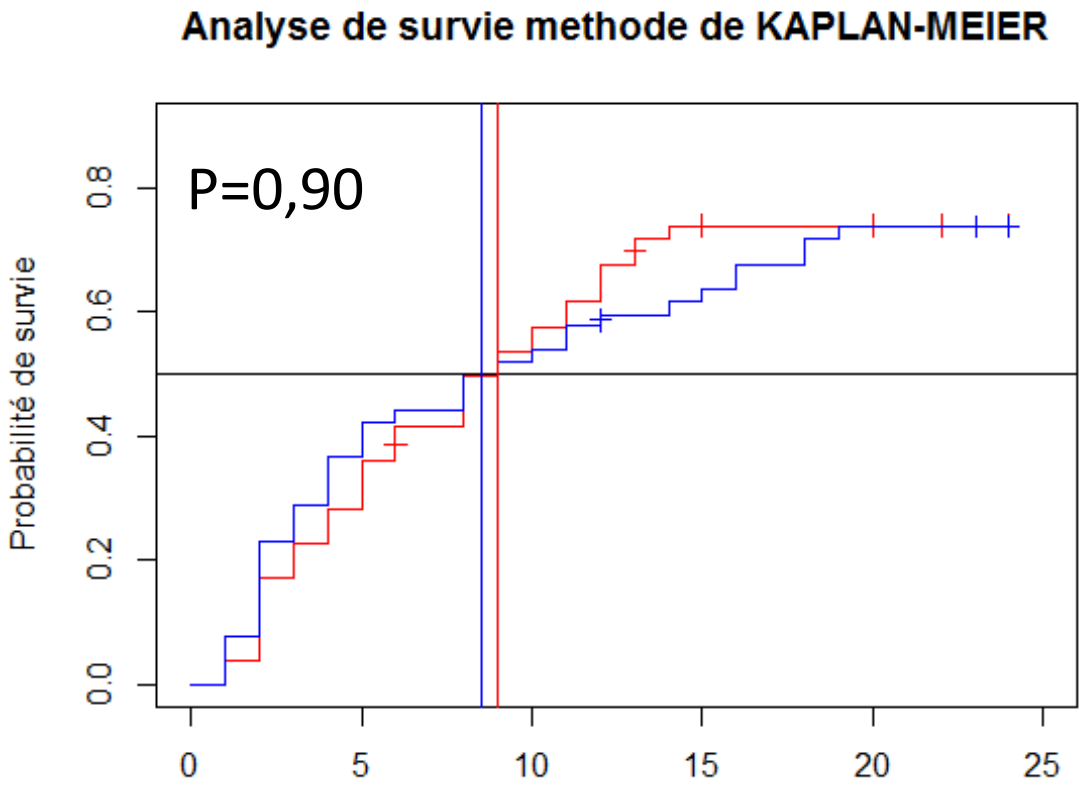
[c] Indicates procedure with conversion to a different procedure or failure.

[d] Absolute risk difference and 95% CIs were estimated using a generalized linear model.

[e] Hemorrhage was quantified using quantification of aspiration and/or a subgluteal bleeding collection bag.

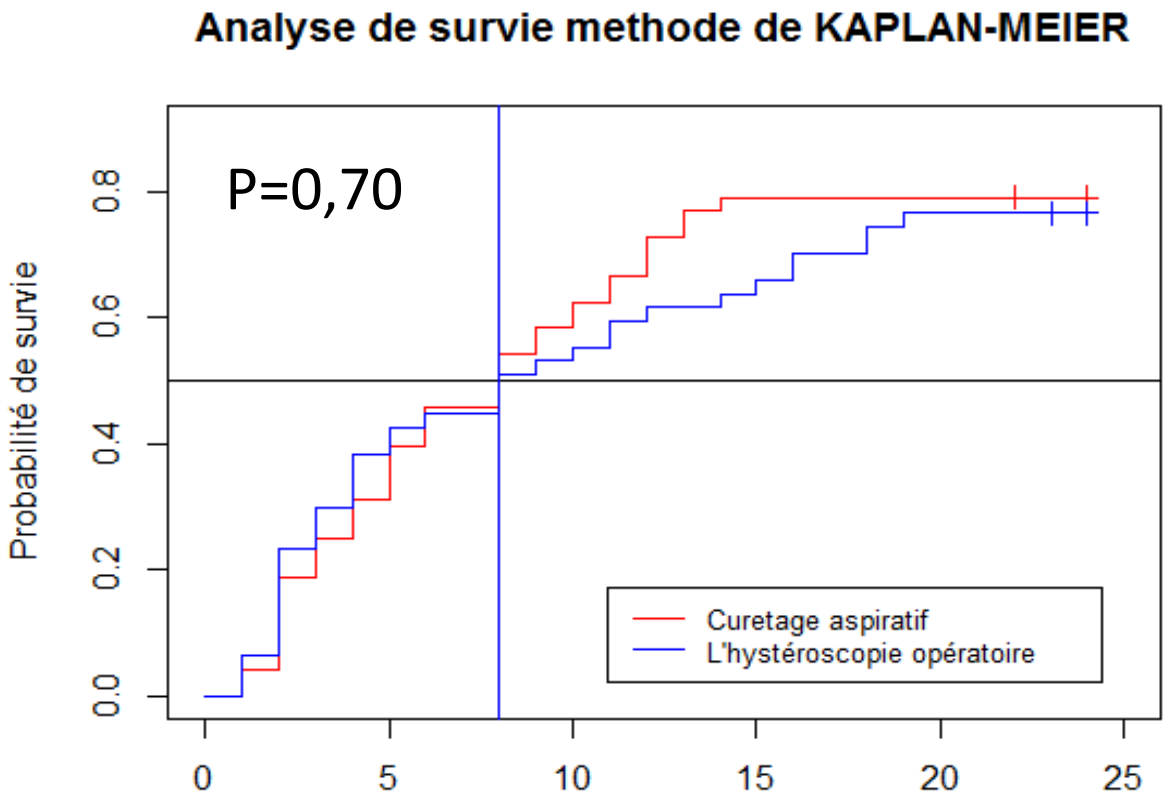
# ANALYSE RETENTION SANS SAC

## ITT



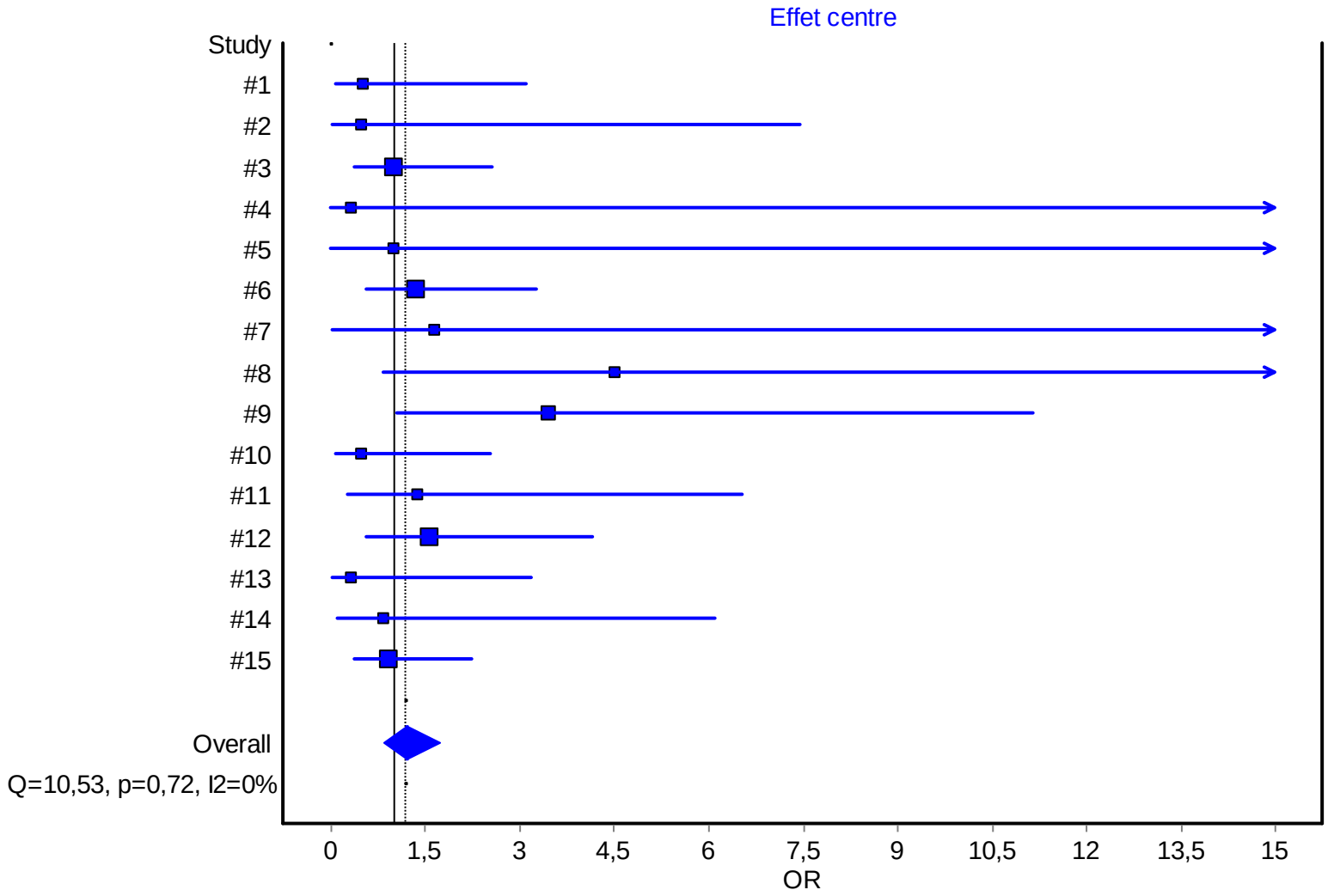

| | Curetage | Hystéroscopie | p |
|---|---|---|---|
| Grossesse>22SA | 70,4% | 69,1% | 0,88 |

## PER PROTOCOLE




| | Curetage | Hystéroscopie | p |
|---|---|---|---|
| Grossesse>22SA | 79,2% | 76,6% | 0,76 |

# EFFET CENTRE?



# AJUSTEMENT

## ITT

| | OR | IC 95% |
|---|---|---|
| Hystéroscopie | 0,81 | 0,57-1,14 |
| Age | 0,9 | 0,86-0,93 |
| Barrière antiadhérentielle | 1,52 | 0,57-4,75 |
| HSC diag | 0,36 | 0,13-0,96 |

## PER PROTOCOLE

| | OR | IC 95% |
|---|---|---|
| Hystéroscopie | 0,77 | 0,52-1,15 |
| Age | 0,87 | 0,84-0,91 |
| Barrière antiadhérentielle | 1,57 | 0,49-6,98 |
| HSC diag | 0,26 | 0,09-0,68 |

# DISCUSSION

- ESSAI CHIRURGICAL Français RANDOMISE
- Inclusions et perdues de vue conforme aux prévisions
- Taux de grossesse attendu avec CJP « parlant » aux patientes

- ESSAI NEGATIF: Attention aux extrapolations de séries sans comparatifs: LAAC trial, LION study,…
- Aucun centre n’a de meilleur résultat avec l’hystérocopie…..
- Essai ne permettant pas d’évaluer les barrières antiadhérentielles et la place de l’hystéroscopie diagnostique postopératoire

# Conclusion

- L'hystéroscopie opératoire n'est pas plus performante que le curetage aspiratif pour la prise en charge des avortements spontanés incomplets:
  - Pas plus de grossesses évolutives
  - Pas d'amélioration des délais d'obtention de grossesse
  - Pas de diminution des complications per et postopératoires
  - Pas de diminution du taux de réinterventions chirurgicales

- Merci à tous les centres participants!