Anomalies d'insertion placentaire (AIP) : un nouveau challenge pour l'anesthésiste

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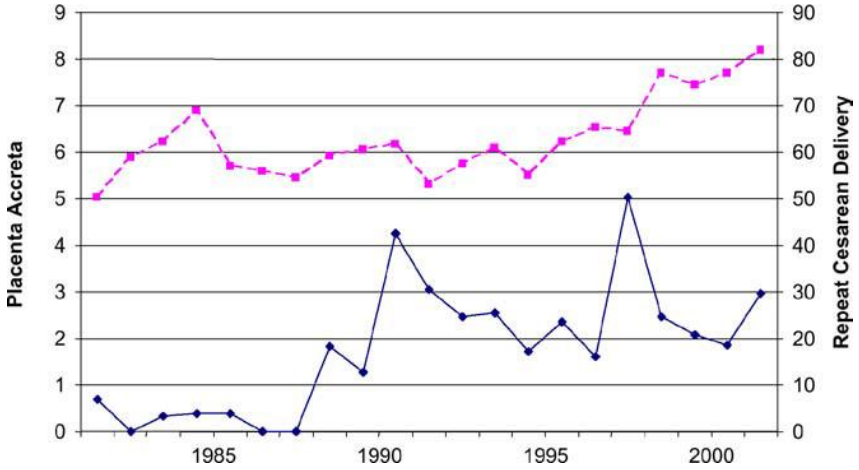
INCIDENCE

- Incidence en augmentation: corrélée au taux croissant de césariennes.



  - Wu et al. Abnormal Placentation: Twenty-year Analysis. Am J Obstet Gynecol. 2005;192:1458-61.
- Incidence variable en fonction de la population et de la période étudiées.
  - 1/2510 grossesses
    - Miller et al. Clinical Risk Factors For Placenta Previa-Placenta Accreta. Am J Obstet Gynecol. 1997;177:210-4.
  - 1/533 grossesses
    - Wu et al. Abnormal Placentation: Twenty-year Analysis. Am J Obstet Gynecol. 2005;192:1458-61.
  - 1,7/10000 grossesses (95% CI 1,4-2)
    - Fitzpatrick et al. The Management And Outcomes Of Placenta Accreta, Increta, And Percreta In The UK: A Population-Based Descriptive Study. BJOG. 2014;121:62-71.

MORBIDITES ASSOCIEES

- HPP
- CIVD
- Hystérectomie
- Lésions urétérales/vessie/viscérales
- ARDS
- IR
- Décès

Décès maternels, effectifs et répartition en %, et taux pour 100 000 naissances vivantes par causes de décès détaillées, France entière 2007-2009

Causes de décès	Effectifs	%	Taux de mortalité[1]
DIRECTES	147	57,9	6,0
Hémorragies	46	18,1	1,9
Consécutive à grossesse ectopique	5	2,0	
Consécutive avortement	2	0,8	
Placenta prævia,	2	0,8	
Placenta accreta/perccreta	7	2,8	
Hématome rétro placentaire	3	1,2	
Hémorragie du postpartum	21	8,3	0,9
Rupture utérine	3	1,2	
Plaies chirurgicales et lésions	3	1,2	

Enquête nationale confidentielle sur les morts maternelles France, 2007-2009

Rapport du comité national d'experts sur la mortalité maternelle (CNEMM)

Octobre 2013

PRISE EN CHARGE

- Critères suggérés devant être présents dans un « centre d'excellence »
  - Equipe multidisciplinaire
    - Obstétricien
    - Expert en US
    - Spécialiste en chirurgie pelvienne
    - Anesthésiste spécialisé en obstétrique
    - Urologue
    - Radiologue spécialisé en interventionnelle
    - Néonatologue

PRISE EN CHARGE

- Critères suggérés devant être présents dans un « centre d'excellence »
  - Services disponibles 24h/24
    - Radiologie interventionnelle
    - USI
    - NICU
  - Banque de sang
    - Devant assurer transfusion massive (produits sanguins et dérivés)
    - Cell saver/perfusionnistes
    - Expert en transfusion
    - Protocole transfusion massive

    - Silver et al. Center Of Excellence For Placenta Accreta. AJOG. 2015;212(5):561-8

PRISE EN CHARGE

Maternal Morbidity in Cases of Placenta Accreta Managed by a Multidisciplinary Care Team Compared With Standard Obstetric Care

Alexandra G. Eller, MD, MPH, Michele A. Bennett, MD, Margarita Sharshiner, MD, Carol Masheter, PhD, Andrew P. Soisson, MD, Mark Dodson, MD, and Robert M. Silver, MD

- Avantages de la prise en charge multidisciplinaire
  - Eller et al. Etude rétrospective, 1996-2008.
    - 141 cas placenta accreta
    - 79: management multidisciplinaire
    - 62: management standard

Table 3. Maternal Morbidity in Cases of Placenta Accreta Stratified by Delivery Site

	Multidisciplinary Care Center (n=79)	Standard Care Center (n=62)	*P*
Estimated blood loss (L)	2.0 (0.15–10)	2.5 (0.1–23)	.391*
Maternal admission to intensive care unit	23 (43)	22 (36)	.383
Early reoperation (among those originally delivered by cesarean)	2 (3)	16 (36)	<.001†
Coagulopathy‡	23 (29)	21 (34)	.419
Blood transfusion			
1 or more units of packed red cells	65 (82)	55 (89)	.186
4 or more units of packed red cells	34 (43)	38 (61)	.031
Ureteral injury	5 (6)	5 (8)	.749†
Infectious complications	24 (30)	14 (23)	.754†
Wound infection	9 (11)	4 (6)	
Intraabdominal infection	6 (8)	3 (5)	
Vaginal cuff cellulitis	2 (3)	3 (5)	
Pyelonephritis	5 (6)	2 (3)	
Pneumonia	2 (3)	2 (3)	
Postoperative length of stay (d)			.632
4 or fewer	39 (49)	36 (58)	
5–8	31 (39)	19 (31)	
9 or more	9 (11)	7 (11)	
Length of stay (d)	5 (3–13)	4 (2–54)	
Hospital readmission within 6 wk	8 (10)	8 (13)	.582
Delayed reoperation§	7 (9)	9 (15)	.293
Early composite morbidity‖	41 (52)	41 (66)	.089
Late composite morbidity¶	15 (19)	14 (23)	.600

Data are median (range) or n (%) unless otherwise specified.

* Fisher-Pitman permutation test.

† Fisher exact test.

‡ Defined as the occurrence of one of the following: platelet nadir less than 100,000/microliters, fibrinogen nadir less than 200 mg/dL, international normalized ratio more than 1.2.

§ Defined as reoperation performed more than 7 days postpartum due to complications of delivery.

‖ Defined as the occurrence of one or more of the following: maternal admission to intensive care unit for more than 24 hours, transfusion of 4 or more units of packed red blood cells, coagulopathy, ureteral injury, or the need for reoperation within 24 hours.

¶ Defined as the occurrence of one or more of the following: intra-abdominal infection, hospital readmission, or the need for delayed reoperation more than 7 days after delivery.

Table 4. Maternal Morbidity in Cases of Suspected Accreta Stratified by Delivery Site

	Multidisciplinary Care Center (n=60)	Standard Care Center (n=23)	*P*
Estimated blood loss (L)	2.6 (0.15–9)	4.0 (0.6–23)	.096*
Maternal admission to intensive care unit	18 (30)	9 (39)	.427
Early reoperation	2 (3)	9 (41)	<.001†
Coagulopathy‡	17 (28)	9 (41)	.278
Large-volume blood transfusion			
4 or more units of packed red cells	25 (42)	16 (70)	.023
Cystotomy	22 (37)	10 (43)	.568
Ureteral injury	4 (7)	4 (17)	.208†
Infectious complications	18 (30)	5 (23)	.590†
Wound infection	8 (13)	4 (18)	
Intraabdominal infection	4 (7)	0	
Vaginal cuff cellulitis	2 (3)	0	
Pyelonephritis	4 (7)	1 (5)	
Pneumonia	0	0	
Postoperative length of stay (d)	4 (3–13)	5 (2–26)	.280
4 or fewer	31 (52)	11 (48)	
5–8	24 (40)	6 (26)	
9 or more	5 (8)	6 (26)	
Hospital readmission within 6 wk	7 (12)	3 (13)	1.000†
Delayed reoperation§	5 (8)	3 (13)	.679†
Early composite morbidity‖	28 (47)	17 (74)	.026
Late composite morbidity¶	12 (20)	5 (22)	1.000†

Data are median (range) or n (%) unless otherwise specified.

* Fisher-Pitman permutation test.

† Fisher exact test.

‡ Defined as the occurrence of at least one of the following: platelet nadir less than 100,000/microliter, fibrinogen nadir less than 200 mg/dL, international normalized ratio more than 1.2.

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¶ Defined as the occurrence of one or more of the following: intra-abdominal infection, hospital readmission, or the need for delayed reoperation more than 7 days after delivery.

PRISE EN CHARGE

Multidisciplinary Management of Invasive Placenta Previa

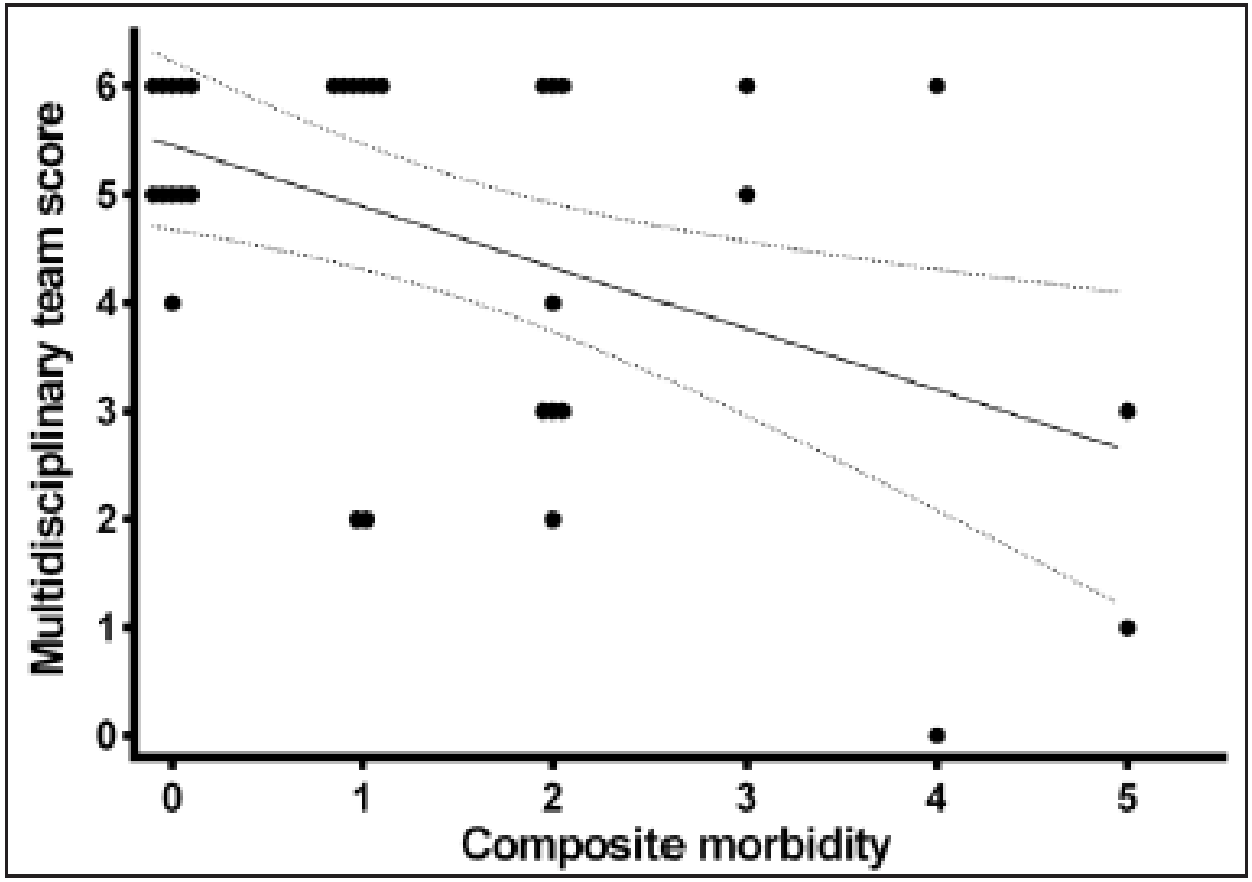
Melissa G. Walker, MSc,[1,2] Lisa Allen, MD, FRCSC,[1,2] Rory C. Windrim, MB, FRCSC,[1,2]
John Kachura, MD, FRCPC,[1,3] Lindsay Pollard, RN,[1,2] Sophia Pantazi, MD, FRCPC,[1,4]
Sarah Keating, MD, FRCPC,[1,5] Jose C.A. Carvalho, MD, PhD,[1,6] John C.P. Kingdom, MD, FRCSC[1,2]

- Avantages de la prise en charge multidisciplinaire
  - Walker et al. Etude prospective, 2008-2012.
  - 33 cas de placenta praevia et increta-percreta
  - Étude de l'utilisation par l'obstétricien de 6 composantes d'équipe
    - Consult prénatale en médecine foeto-maternelle
    - Consult chir gynécologique
    - IRM prénatale
    - Consult en Rx interventionnelle + ballons
    - Planification date chir/ consult anesthésie
    - Chirurgie menée par les membres de « AIP team »
    - JOCG. 2013; 35: 417-25

PRISE EN CHARGE

- Avantages de la prise en charge multidisciplinaire
  - Score composite de morbidité
    - Admission USI
    - Transfu > 2 CG
    - AG
    - Temps opératoire > 125 min
    - Complications postop significatives

Figure 1. Composite morbidity score categorized by the number of multidisciplinary team components present in the patient's care showing regression line with 95% CI (n = 33, R^2 = 0.228, P = 0.005).



PRISE EN CHARGE

ORIGINAL ARTICLE

Invasive placental disease: the impact of a multi-disciplinary team approach to management

John C. Smulian[1,2], Ana-Liza Pascual[1], Helai Hesham[1], Emma Qureshey[1], M. Bijoy Thomas[1,2], Amy M. Depuy[1,2], Amanda B. Flicker[1,2], and William E. Scorza[1,2]

- Avantages de la prise en charge multidisciplinaire
  - Smulian et al. Etude rétrospective 2007-2014
  - 47 AIP dont 66% suspi anténatale
  - 19: prise en charge multidisciplinaire
    - The journal of Maternal-Fetal & Neonatal Medicine, DOI: 10.1080/14767058.2016.1216099

Table 2. Intraoperative outcomes compared based on whether a multidisciplinary team (MDT) approach was used.

	MDT ($N = 19$)	No MDT ($N = 28$)	p
EGA admission (weeks)	32.3 ± 4.0	34.4 ± 5.2	0.13
EGA delivery (weeks)	33.2 ± 3.8	35.1 ± 4.7	0.16
Delivery situation			0.08
Unscheduled	1 (5.3%)	8 (28.6%)	
Scheduled-emergent	5 (26.3%)	3 (10.7%)	
Scheduled-planned	13 (68.4%)	17 (60.7%)	
Cesarean delivery	19 (100%)	24 (85.7%)	0.28
Surgical time (min)	260 ± 68	181 ± 57	0.0001
Lowest temp (°C)	35.7 ± 1.1	35.3 ± 1.5	0.18
Lowest MAP (mmHg)	57 (40, 94)	48 (21, 98)	0.002
EBL (mL)	1200 (500, 7500)	2500 (300, 10 000)	0.009
Crystalloid (mL)	6200 (2000, 13 000)	5450 (2000, 13 000)	0.57
Blood products	9 (47.4%)	24 (85.7%)	0.005
PRBC (units)	0 (0, 16)	4 (0, 25)	0.02
FFP (units)	0 (0, 16)	0 (0, 12)	0.50
Platelets (SD packs)	0 (0, 3)	0 (0, 3)	0.62
Cryoprecipitate (units)	0 (0, 0)	0 (0, 20)	0.09
Factor VII (doses)	0 (0, 1)	0 (0, 3)	0.14

Data presented as either mean ± SD, median (range) or N (%).
EGA, estimated gestational age; EBL, estimated blood loss; PRBC, packed red blood cells; FFP, fresh frozen plasma; SD, single donor.

STRATEGIE ANESTHESIQUE

- Consultation préopératoire
- Optimalisation hématocrite
- Installation en salle d'opération
- AG vs ALR
- Gestion du risque hémorragique

CONSULT PREOP

- ASAP
- Concertation avec l'équipe obstétricale sur la prise en charge opératoire
- Explications des différentes techniques d'anesthésie/ risque conversion
- Evaluation airway
- Explication de l'installation au bloc opératoire (monitoring invasif,…)
- Surveillance postopératoire (USI,…)
- Risque hémorragique: détermination groupe sanguin, RAI, Hb préop, cell saver, alerte banque de sang (risque transfu massive), convictions religieuses

OPTIMALISATION HEMATOCRITE

- La prévention et le traitement anténatal de l'anémie sont recommandés
- Détermination du taux Hb de départ/ferritine
- Supplémentation par Fer oral (première intention)
- Si nécessaire: Fer IV +/- EPO (permet ↑ Ht en 2 semaines)

INSTALLATION/MONITORING

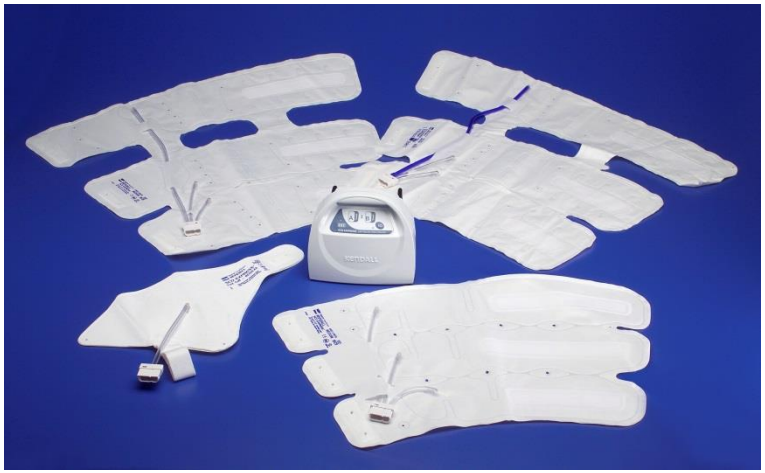
- Salle d'opération adéquate
- Vérification disponibilité des produits sanguins

INSTALLATION/MONITORING

- 2 VVP de bon calibre
- Pression artérielle invasive

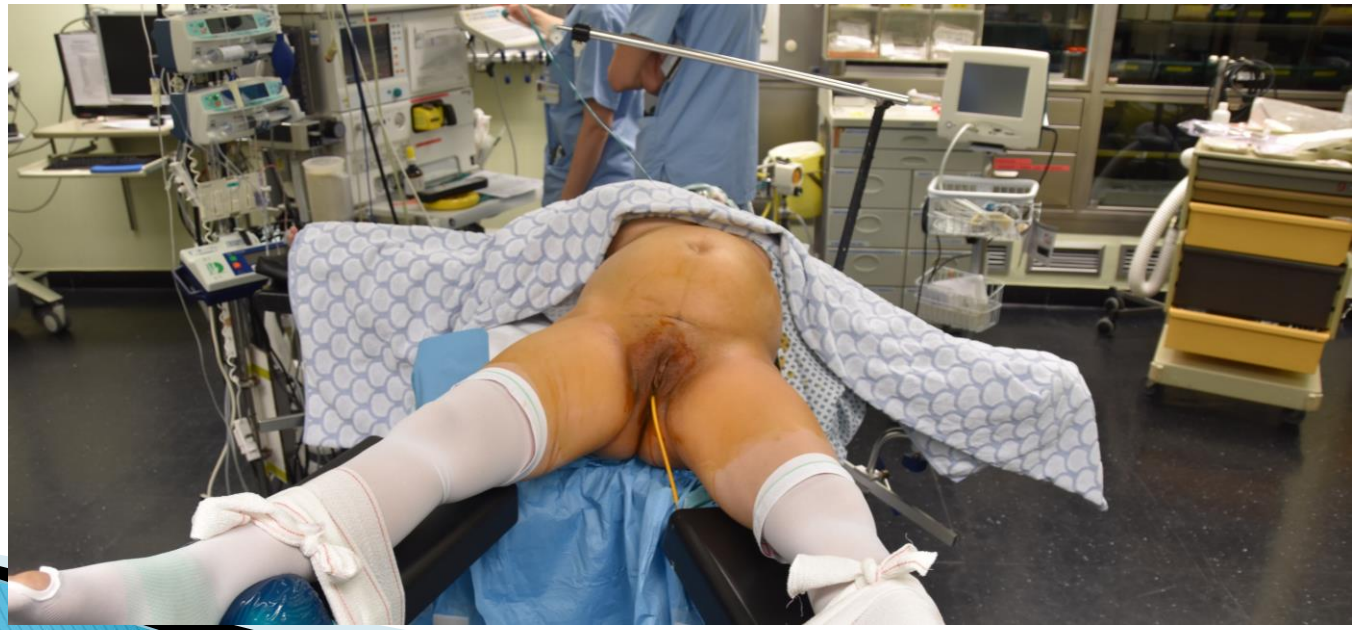
INSTALLATION/MONITORING

- Bottes compression pneumatique
- Prévention et lutte contre l'hypothermie: matelas/couverture chauffante



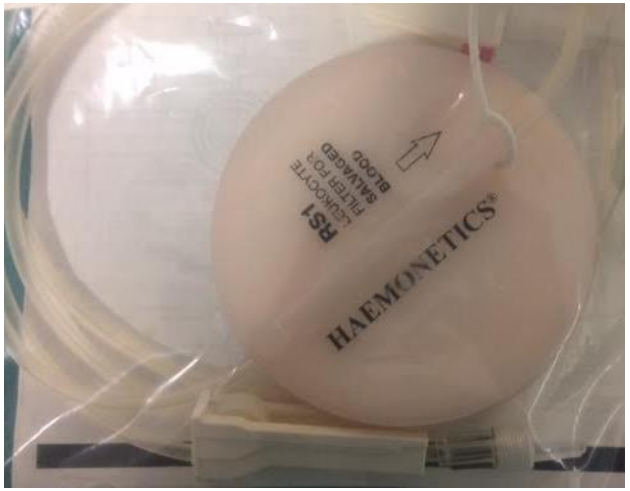
INSTALLATION/MONITORING

- Installation en positon gynécologique + tilt gauche
- Prévention compression nerveuse
- Antibioprophylaxie



INSTALLATION/MONITORING

- Réchauffeur/transfuseur rapide disponible
- Cell saver disponible/Filtres à déleucocyter



TECHNIQUE: ALR vs AG

TECHNIQUE: ALR vs AG

Caesarean section for placenta praevia: a retrospective study of anaesthetic management

N. Parekh[1], S. W. U. Husaini[2] and I. F. Russell[3]*

- Parekh et al. Etude rétrospective 1984-1998
  - 350 *placenta praevia*
  - 210: gr. rachi (60%)
  - 140: gr. AG
  - 2 complications sévères gr. AG
  - Hypotension: n=13 gr. rachi/n=7 gr. AG
  - Césarienne urgente: séniors 40% AG/ juniors 71% AG
  - 7 placenta accreta (5 hystérectomies): 3 AG/ 4 rachi dt 2 conversions

TECHNIQUE: ALR VS AG

Anaesthesia for abnormally invasive placenta: a single-institution case series

N.J. Taylor, R. Russell

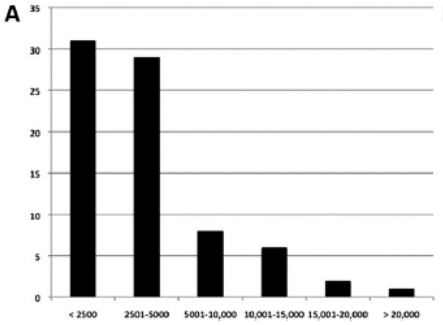
- Taylor et al. Etude rétrospective 2011-2016
  - 40 placenta accreta
  - 60% césarienne-hystérectomie/ 5% hystérectomie différée/ 35% traitement conservateur
  - 95% ALR
  - 45% conversion

TECHNIQUE: ALR VS AG

- En résumé:
  - Choix de l'anesthésiste en charge
  - Pas d'évidence de supériorité d'une technique par rapport à l'autre
  - Si ALR choisie au départ, s'assurer de la possibilité de pouvoir convertir en AG rapidement et en toute sécurité
  - Si ALR: péri ou CSE

RISQUE HEMORRAGIQUE

FIGURE 1
Blood loss in women with placenta accreta



B

EBL	Total patients
≤ 2500	31 (40.3%)
≤ 5000	60 (77.9%)
≤ 10,000	68 (88.3%)
≤ 15,000	74 (96.1%)
≤ 20,000	76 (98.7%)

Blood loss displayed **A,** graphically and **B,** by cumulative blood loss.
EBL, estimated blood loss.
Wright. Massive blood loss in placenta accreta. Am J Obstet Gynecol 2011.

Wright et al. 2011

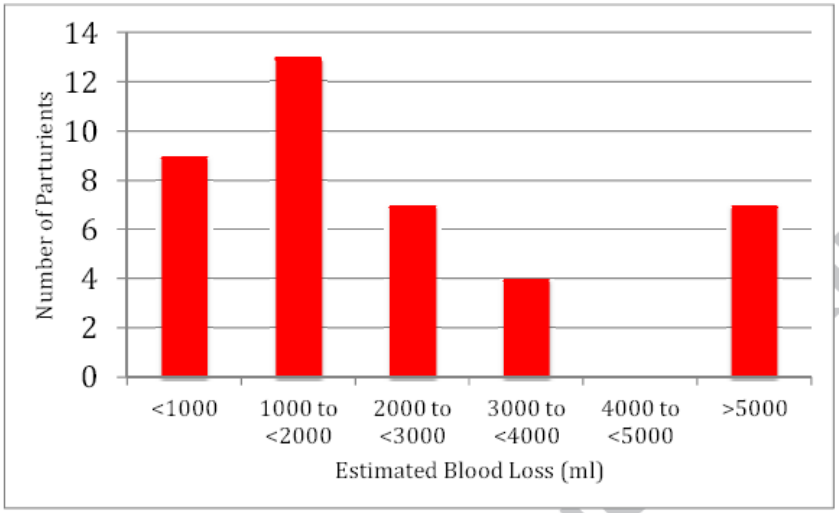


Figure 1. Categories of estimated blood loss amongst parturients with AIP

Taylor et al. 2017

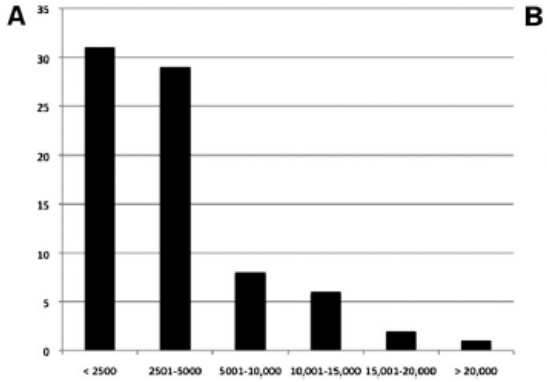
RISQUE HEMORRAGIQUE

Predictors of massive blood loss in women with placenta accreta

Jason D. Wright, MD; Shai Pri-Paz, MD; Thomas J. Herzog, MD; Monjri Shah, MD; Clarissa Bonanno, MD; Sharyn N. Lewin, MD; Lynn L. Simpson, MD; Sreedhar Gaddipati, MD; Xuming Sun, MS; Mary E. D'Alton, MD; Patricia Devine, MD

- Prédicteurs d'une hémorragie massive chez les patientes présentant un placenta accreta
  - Wright et al. Etude rétrospective 2000-2010
  - 77 patientes

FIGURE 1
Blood loss in women with placenta accreta



B

EBL	Total patients
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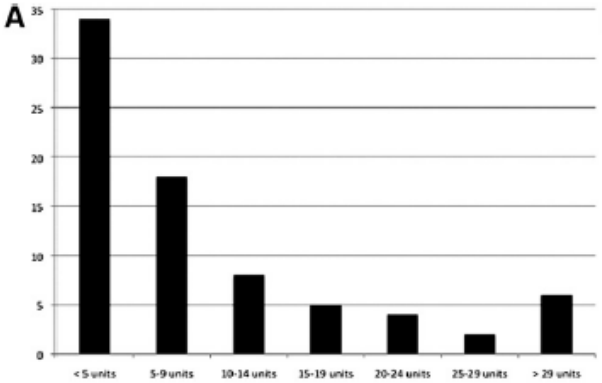
≤ 15,000	74 (96.1%)
≤ 20,000	76 (98.7%)

Blood loss displayed **A**, graphically and **B**, by cumulative blood loss.
EBL, estimated blood loss.
Wright. Massive blood loss in placenta accreta. Am J Obstet Gynecol 2011.

FIGURE 2
Transfusion in women with placenta accreta



B

Units	Total patients
< 5	34 (44.2%)
< 10	52 (67.5%)
< 15	60 (77.9%)
< 20	65 (84.4%)
< 25	69 (89.6%)
< 30	71 (92.2%)
< 35	74 (96.1%)
< 50	75 (97.4%)

Transfusion requirements displayed **A**, graphically and **B**, by cumulative transfusion requirement.
Wright. Massive blood loss in placenta accreta. Am J Obstet Gynecol 2011.

RISQUE HEMORRAGIQUE

- Prédicteurs d'une hémorragie massive chez les patientes présentant un placenta accreta

Univariable analysis of factors associated with massive estimated blood loss and large volume transfusion

Variable	Estimated blood loss, mL					Units transfused				
	<5000		≥5000			<10		≥10		
	n	%	n	%	*P* value	n	%	n	%	*P* value
Ultrasound scan result					.01					.03
Positive	28	58.3	20	41.7		28	58.3	20	41.7	
Negative	22	88.0	3	12.0		21	84.0	4	16.0	
Indeterminate	0	—	1	100		0	—	1	100	
Diagnosis					.02					.003
2000-2005	23	82.4	6	17.7		29	85.3	5	14.7	
2006-2010	25	58.1	18	41.9		23	53.5	20	46.5	
Gestational age, wk					.01					.008
<34	16	55.2	13	44.8		15	51.7	14	48.3	
34-37	19	65.5	10	34.5		19	65.5	10	34.5	
>37	18	94.7	1	5.3		18	94.7	1	5.3	

Peu de marqueurs prédictifs fiables

RISQUE HEMORRAGIQUE

- Evaluation des pertes sanguines, paramètres vitaux maternels, diurèse
- Tests labo standards: Hb-Ht, Pl, APTT, INR, fibrinogène
- Place du TEG/ROTEM à déterminer
  - Intérêt FIBTEM
  - Rapidité
  - Mais: interprétation difficile si inexpérimenté

RISQUE HEMORRAGIQUE

- Stratégie transfusionnelle
  - Pas de données sur le ratio optimal dans l'HPP
  - Ce qui est recommandé en cas d'hémorragie massive (polytrauma):
    - 1CG/1PFC

- Hb greater than 80 g/l
- platelet count greater than 50 × 10^9/l
- prothrombin time (PT) less than 1.5 times normal
- activated partial thromboplastin time (APTT) less than 1.5 times normal
- fibrinogen greater than 2 g/l.

RCOG 2016

RISQUE HEMORRAGIQUE

- Cell Saver
  - Utilisation encouragée si risque d'hémorragie >1500ml et disponibilité (OAA-RCOG-NICE-ACOG)

Cell salvage may be considered in women at high risk of massive haemorrhage and especially in women who would refuse donor blood. D

D

RCOG-NICE 2011

6.4.2 Suspected placenta accreta

Cross-matched blood and blood products should be readily available in anticipation of massive haemorrhage. Where available, cell salvage should be considered and if the woman refuses donor blood it is recommended that she be transferred to a unit with a cell saver.

D

RCOG-NICE 2011

sive hemorrhage. Autologous blood salvage devices have proved safe, and the use of these devices may be a valuable adjunct during the surgery (21).

ACOG 2012

Intraoperative cell salvage should be considered for emergency use in PPH associated with caesarean section and with vaginal delivery. [*New 2016*]

D

RCOG 2016

RISQUE HEMORRAGIQUE

- Cell Saver
  - Risques:
    - Embolie amniotique (prévention: filtre à déleucocyter)
    - Allo-immunisation (prévention: Ig anti-D)
  - Utilisation recommandée de filtres à déleucocyter
    - Elimination leucocytes/cellules trophoblastiques
    - Cellules fœtales toujours présentes
    - Catling et al. IJOG. 1998;8;79-84
  - Utilisation d'une autre aspiration jusque la délivrance placentaire

RISQUE HEMORRAGIQUE

The use of cell salvage in women undergoing cesarean hysterectomy for abnormal placentation

A. Elagamy,[a,c] A. Abdelaziz,[b] M. Ellaithy[b]

- Cell saver
  - Elagamy et al. Etude prospective 2011-2012.
  - 41 placenta accreta dt 20 césariennes-hystérectomies
  - 15 transfusions autologues après utilisation cell saver
  - Volume transfusion autologue= 1476± 247mL
  - Pas de cas rapportés d'embolie amniotique, d'hypotension, de sepsis ou de coagulopathie
  - 86,7% (13/15): pas de transfusion complémentaire

RISQUE HEMORRAGIQUE

Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with post-partum haemorrhage (WOMAN): an international, randomised, double-blind, placebo-controlled trial

*WOMAN Trial Collaborators**

Lancet,2017

- Acide Tranexamique
  - Etude randomisée, double-aveugle, 2010-2016
  - HPP: n=10051 1g TA (à répéter 1X si persistance dans les 30 min à 24 h) vs n=10009 placebo
  - Décès en relation avec l'hémorragie: n=155 (TA) vs n=191 (placebo) RR 0,81 95% CI 0,65-1 p=0,045
  - Si traitement endéans 3 h après naissance: n=89 (TA) vs n=127 (placebo) RR 0,69 95% CI 0,52-0,91 p= 0,008

RISQUE HEMORRAGIQUE

Interpretation Tranexamic acid reduces death due to bleeding in women with post-partum haemorrhage with no adverse effects. When used as a treatment for postpartum haemorrhage, tranexamic acid should be given as soon as possible after bleeding onset.

RISQUE HEMORRAGIQUE

- Radiologie interventionnelle

Interventional Radiologic Procedures ACOG 2012

Current evidence is insufficient to make a firm recommendation on the use of balloon catheter occlusion or embolization to reduce blood loss and improve surgical outcome, but individual situations may warrant their use. Despite initial enthusiasm about the utility of balloon catheter occlusion, available data are unclear regarding its efficacy. Although some investigators have reported reduced blood loss (26), there have been other reports of no benefits (27) and even of significant complications (28).

6.5 When is interventional radiology indicated? RCOG 2011

Interventional radiology can be life saving for the treatment of massive postpartum haemorrhage, and therefore having this facility available locally is desirable. If a woman is suspected of having placenta accreta and she refuses donor blood, it is recommended that she be transferred to a unit with an interventional radiology service. D

The place of prophylactic catheter placement for balloon occlusion or in readiness for embolisation if bleeding ensues requires further evaluation. D

RISQUE HEMORRAGIQUE

- Radiologie interventionnelle
  - Mise en place préventive de ballons d'occlusion artériels
    - Salim et al. Etude randomisée 2009-2015
    - 27 placenta accreta: n=13 gr. ballons/ n=14 gr. contrôle
    - C/H: n=6 gr. ballons/ n=7 gr. Contrôle
    - Pas de différence en terme de: CG transfusés, pertes de sang calculées, pertes de sang calculées >2500mL, PFC transfusés, complications chirurgicales, temps opératoire.
    - Taux de complications lié au placement: 15,4%

CONCLUSION

- Intérêt du dépistage afin de permettre une prise en charge MULTIDISCIPLINAIRE
- Consultation anesthésique préopératoire
- ALR possible
- Se tenir prêt à la gestion d'une HPP

Un bon article de synthèse…

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ELSEVIER MASSON

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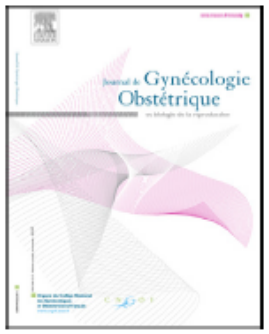

HÉMORRAGIE DU POST-PARTUM

Prise en charge des placenta praevia et accreta

Management of placenta previa and accreta

G. Kayem[a,*,b], H. Keita[c,d]