Quoi de neuf En Anesthésie obstétricale?

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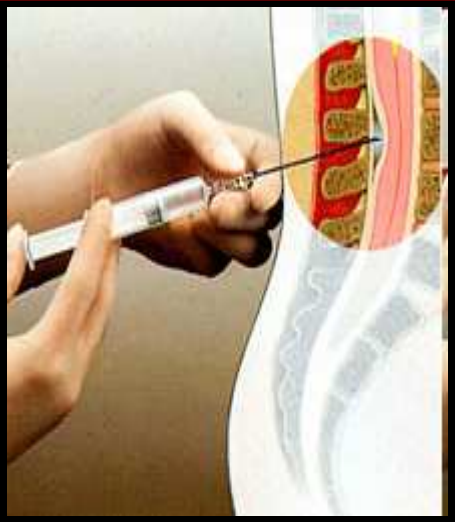
Analgésie obstétricale

- Analgésie neuraxiale
  - Impact obstetrical
  - AL: Bupivacaine vs Ropivacaine
  - Adjuvants: Clonidine
- Remifentanil



Anesthesiology 2009; 111:871–80

Epidural Analgesia in the Latent Phase of Labor and the Risk of Cesarean Delivery

A Five-year Randomized Controlled Trial

FuZhou Wang, Ph.D., M.Sc., XiaoFeng Shen, M.Sc., M.P.H.,† XiRong Guo, M.D.,‡ YuZhu Peng, M.D., M.P.H.,‡ XiaoQi Gu, M.D.,§ The Labor Analgesia Examining Group (LAEG)||*

Nanjing Medical University, Nanjing, China.

- *Péri ≥ 1cm vs ≥ 4cm Mépéridine*
- *N = 12.793 Nullipares T.spont,*
- *Ropivacaine 0.125% + Sufentanil0.3µg/ml 15ml + PCEA bolus: 10ml*

	Précoce	**Différée**	**p**
Dilatation (cm)	*1.6*	*5.1*	*< 0.0001*
Durée travail (h)	*11.3*	*11.8*	*ns*
Durée Péri	*12.6*	*4.8*	*0.02*
Césarienne (%)	*23.2*	*22.8*	*ns*
VB Instrumentée	*11.8*	*12.7*	*ns*
Allaitement à 6 sem	*70.1%*	*77.8%*	*<0.0001*

Anesthesiology, V 111, No 4, Oct 2009

Anaesthesia
Journal of the Association of Anaesthetists of Great Britain and Ireland

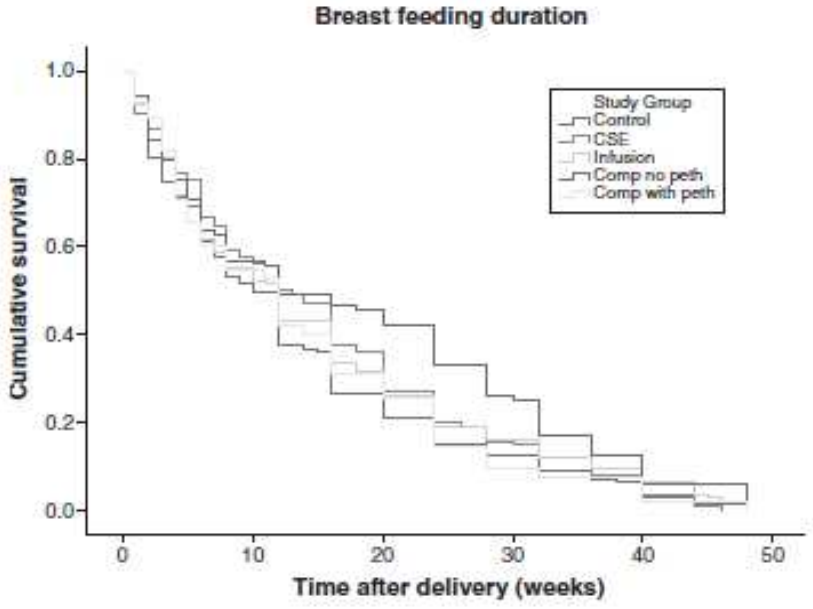
Anaesthesia, 2010, **65**, pages 145–153 doi:10.1111/j.1365-2044.2009.06136.x

ORIGINAL ARTICLE

Epidural analgesia and breastfeeding: a randomised controlled trial of epidural techniques with and without fentanyl and a non-epidural comparison group

M. J. A. Wilson,[1] C. MacArthur,[2] G. M. Cooper,[3] D. Bick,[4] P. A. S. Moore[5] and A. Shennan[6] on behalf of the COMET Study Group UK

- Taux allaitement 24-48h:
  - Idem: 65%
- Durée d'allaitement:
  - idem

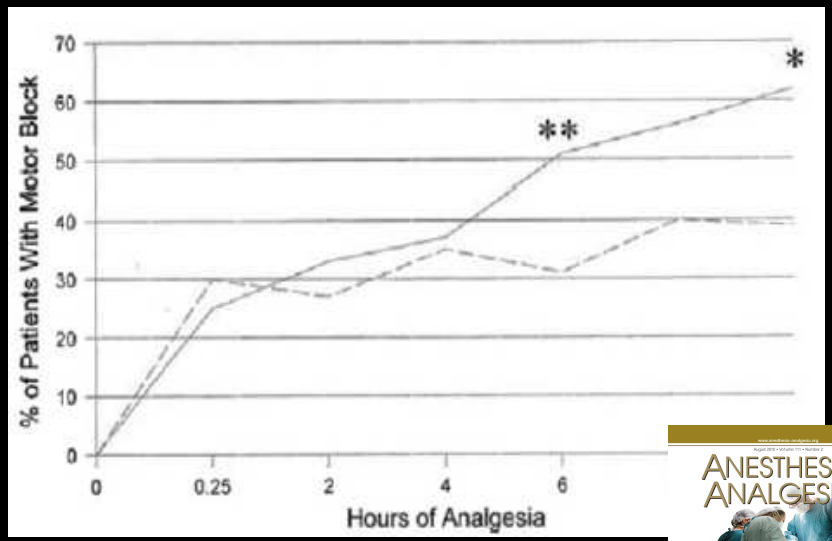


Ropivacaine Versus Bupivacaine for Epidural Labor Analgesia

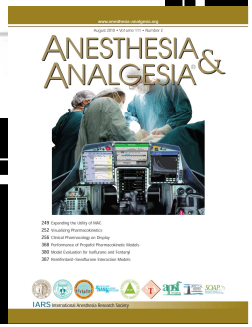
Yaakov Beilin, MD,* and Stephen Halpern, MD†

August 2010 • Volume 111 • Number 2

- Puissance relative
  - EC 50 (MLAC)
    - Analgésie: 60%
    - Bloc Moteur: 65-75%
- Toxicité: Non
  - [0.0625%- 0.1%]
- Pronostic maternel et obstétrical
  - Réduction du BM avec Ropivacaine
    - Considérer les ≠ces de puissance
    - Surtout lors de travail long
    - Cliniquement peu pas significative
      - Progression du travail
      - Mode d'accouchement
      - Satisfaction maternelle
      - Déambulation
- Pronostic néonatal
  - Apgar & pH : idem
- Coût
  - X10 (par mg) USA



analgesia. We found that there is no advantage to the routine use of ropivacaine for labor analgesia. (Anesth Analg 2010;111:482–7)



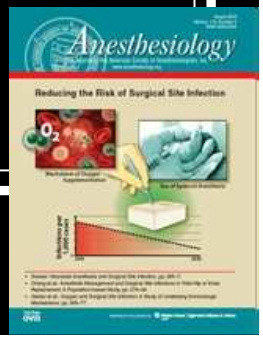
Determination and Comparison of Graded Dose–Response Curves for Epidural Bupivacaine and Ropivacaine for Analgesia in Laboring Nulliparous Women

Warwick D. Ngan Kee, M.B., Ch.B., M.D., F.A.N.Z.C.A., F.H.K.A.M.,* Floria F. Ng, R.N., B.A.Sc.,†
Kim S. Khaw, M.B.B.S., F.R.C.A., F.H.K.A.M.,‡ Anna Lee, M.P.H., Ph.D.,‡
Tony Gin, M.B., Ch.B., M.D., F.R.C.A., F.A.N.Z.C.A., F.H.K.A.M.*

- EC50 (MLAC)
  - Ropi : Bupi = 0.6
  - Méthode up and down
  - Outcome binaire: efficacité
- Courbe dose-réponse complète non définie
- EC 90-95: non définies
  - Intérêt clinique
  - Rapport de puissance identique?

- Objectifs:
  - Courbes dose-réponse pour la bupi. et la ropi.
  - Comparer leur pente
  - Comparer leur puissance
- N= 300 (12X25)
  - ∅ ≤ 5cm, EVA ≥ 50
- Randomisation
  - Bupivacaine 20ml
    - 5-10-15-20-30-40 mg
  - Ropivacaine 20ml
    - 7-15-20-30-45-60 mg
- Reduction EVA (%) T30

Anesthesiology 2010; 113:445-53



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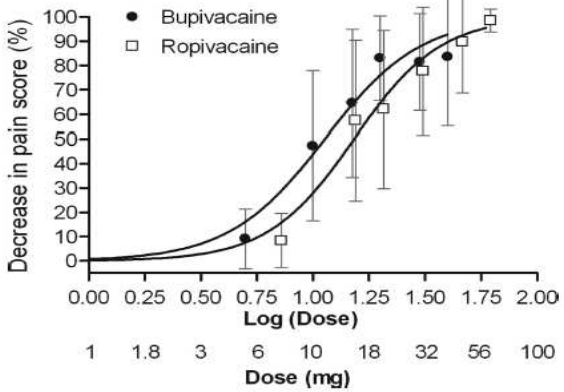
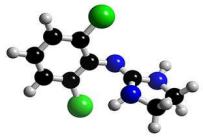


	Bupi	Ropi	p
ED 50 (95% CI)	11.3 mg (10-12.7)	15.3 mg (13.7-17.1)	0.0003
ED 90 (95% CI)	33.4 mg (26.2-40.7)	40.6 mg (32.4-51.1)	0.29

- Pas de ≠ce de puissance aux doses correspondants à ED 90 (cliniquement utiles)
  - Pas d'adjuvants ⇒
  - Doses !
- Augmentation dose
  - Niveau sensitif
  - Durée analgésie
  - Hypotension
- Bloc moteur
  - Incidence faible et similaire

Side effects of the addition of clonidine 75 µg or sufentanil 5 µg to 0.2% ropivacaine for labour epidural analgesia



P.Y. Dewandre, V. Decurninge, V. Bonhomme, P. Hans, J.F. Brichant

Department of Anaesthesia and Intensive Care Medicine, CHR de la Citadelle, Liege University Hospital, Liege, Belgium

ABSTRACT

Background: Sufentanil 5 µg and clonidine 75 µg produce a similar reduction in minimum local anaesthetic concentration of ropivacaine. The aim of the present study was to compare the side effects of two equianalgesic solutions by combining 0.2% ropivacaine with either sufentanil 5 µg or clonidine 75 µg for labour epidural analgesia.

Methods: In a prospective double-blind study, 60 women at ⩽5 cm cervical dilatation were randomly allocated to receive 0.2% ropivacaine with either sufentanil 5 µg or clonidine 75 µg to initiate labour analgesia. The analgesic efficacy and side effects of the two mixtures were compared.

Results: Onset, duration and quality of analgesia and subsequent ropivacaine consumption were similar in the two groups. Hypotension was significantly more frequent and severe with clonidine than with sufentanil (systolic blood pressure <100 mmHg: 17/26 vs. 6/24, $P < 0.05$; systolic blood pressure <90 mmHg: 5/26 vs. 0/24, $P < 0.05$) resulting in more frequent ephedrine administration (11/26 vs. 2/24, $P < 0.05$) and larger fluid requirements (1696 ± 583 mL vs. 1264 ± 407 mL, $P < 0.05$). Conversely, pruritus was more frequent with sufentanil than with clonidine (6/26 vs. 1/24, $P < 0.05$).

Conclusions: Hypotension occurs more frequently when clonidine is added to epidural ropivacaine instead of an equianalgesic dose of sufentanil. Therefore, clonidine cannot be recommended for routine administration for labour epidural analgesia.

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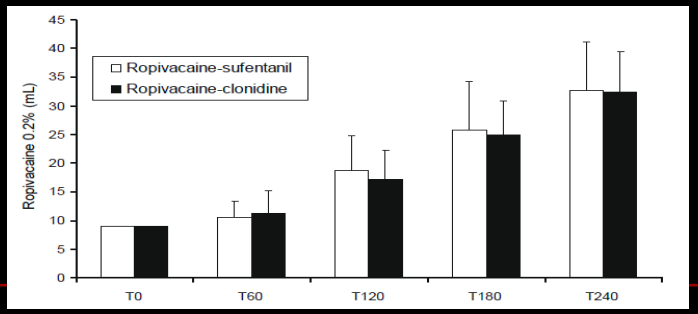
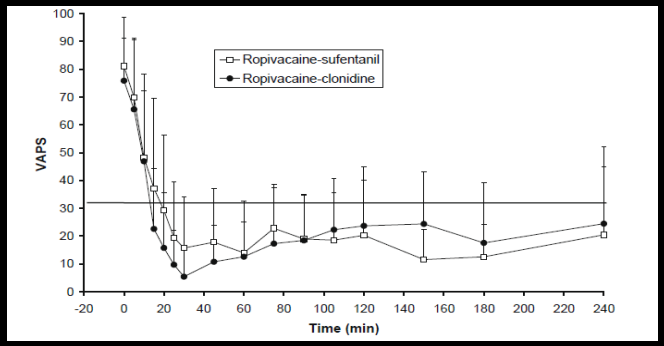
Table 4 Side effects

	Group RS (n = 24)	Group RC (n = 26)
Systolic pressure <100 mmHg		
Patients	6	17*
Events	10/357	43/386*
Systolic pressure <90 mmHg		
Patients	0	5*
Events	0/357	8/386*
Bradycardia <60 beats/min	3	4
< 50 beats/min	1	1
Ephedrine requirement		
Patients	2	11*
Dose/patient (mg)	0.4 ± 1.4	4.8 ± 8.5*
Fluid requirement (mL)	1264 ± 407	1696 ± 583*
Pruritus score 1	6	1*
>1	0	0
Sedation score 1	7	8
>1	0	0
SaO_2 <95%	2	5
< 90%	0	0
Nausea	7	8
Vomiting	0	0
Motor block		
Bromage score: 1	9	11
2	1	2
>2	0	0
FHR abnormalities	6	9





- Equi-analgésie
- Clonidine 75 µg
  - Hypotension
  - Ephedrine
  - Remplissage
- Sufentanil 5µg
  - Prurit modéré

Effects of a continuous low-dose clonidine epidural regimen on pain, satisfaction and adverse events during labour: a randomized, double-blind, placebo-controlled trial

Florent Wallet, Henri Jacques Clement, Carine Bouret, Felix Lopez, Françoise Broisin, Corine Pignal, Mathieu Schoeffler, Edith Derre, Bruno Charpiat, Cyril Huissoud, Frédéric Aubrun and Jean Paul Viale

Background and objective Epidural clonidine has been proposed as an adjunct for anaesthetic mixtures during labour. Administered as a bolus, clonidine may have side effects such as sedation and hypotension; its continuous infusion could be attractive in this respect. We, therefore, conducted a randomized, double-blind trial using patient-controlled epidural analgesia with a background infusion using a low dose of clonidine during labour.

Methods A total of 128 healthy parturients in active labour received a patient-controlled epidural analgesia solution of 0.0625% levobupivacaine and sufentanil 0.25 $\mu g\,ml^{-1}$ with or without clonidine 2 $\mu g\,ml^{-1}$. Ninety-five parturients were analysed. The pain score over time was evaluated as well as drug volume utilization; supplementation bolus and side effects were recorded. The primary endpoint was maternal satisfaction [ClinicalTrials.gov Identifier (NCT00437996)].

Results Three patients in the control group failed to achieve satisfactory epidural analgesia owing to a technical issue. Although the primary endpoint was not statistically significant, analgesia was more pronounced and obtained earlier in the clonidine group. The area under the curve for the visual analogue pain score was significantly lower in the clonidine group. In this group, hourly doses of levobupivacaine and sufentanil were reduced (13.9 ± 4.3 vs. 16.3 ml ± 4.0; $P = 0.005$) as well as rescue supplementation and pruritus incidence (18 vs. 46%; $P = 0.004$). Maternal blood pressure was significantly lower, over time, in the clonidine group but remained within the normal range. Sedation was similar in both groups (4.3 vs. 2.0%; not significant).

Conclusion The addition of clonidine to epidural levobupivacaine and sufentanil for patient-controlled epidural analgesia in labour improved analgesia, reduced the supplementation rate and reduced pruritus without improvement in maternal satisfaction. Blood pressure was significantly lower in the clonidine group over time but without clinical consequence.

Eur J Anaesthesiol 2010;27:441–447

Keywords: clonidine, epidural analgesia, levobupivacaine, sufentanil

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- Ephedrine: 26.5% vs 6.5% (p= 0.01)

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Remifentanil

Focused Review

Systemic Remifentanil for Labor Analgesia

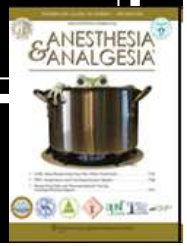
Anelia Hinova, FRCA*

Roshan Fernando, FRCA†

From the *Department of Anesthesia, St. Mary's Hospital; and †Department of Anesthesia, University College London Hospitals NHS Foundation Trust, London, UK.

- Pharmacocinétique
  - µ-agoniste
  - Ultra-courte durée d'action
  - BB Equilibration 1.2 min
  - Métabolites inactifs
  - Estérases pl et tissulaires
  - ½ vie contextuelle: 3.5 min
  - ½ vie analgésique 6 min
  - Onset T 30-60 sec,
    - Peak 2.5min
  - Durée contraction ~= 70 sec
    - Timing du bolus PCIA
- Parturiente
  - ⇑ Vol distribution
  - ⇑ Clearnce
    - ⇒ ⇓ (1/2) concentration pl.
- Passage transplacentaire
  - UV/MA: 0.88
- Redistrib. & métab. fœtale rapide
  - UA/UV: 0.29
- Indications
  - Contrindications ALR
  - Refus ALR
  - Non disponibilité ALR

Vol. 109, No. 6, December 2009



Systemic Remifentanil for Labor Analgesia

- Efficacité analgésique
  - incomplète
  - Particulièrement 2e stade (>80)
- Efficacité
  - > mépéridine,
  - >N2O/O2 (association décrite)
- Conversion APM 10%
- Satisfaction maternelle

- Modalités d'administration
- PCIA ± basal rate?
  - Bolus 0.5 µg/kg [0.2- 0.9]
  - LO:1-3min
  - Infusion: 0.025-0.1 µg/kg/min
  - Dose fixe?
  - Adaptation à la réponse?
    - Vs sous & surdosage
  - Adaptation à l'évolution de D*?

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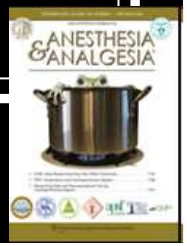

Systemic Remifentanil for Labor Analgesia

- Effets 2e maternels
- Sédation
  - Rarement excessive
- Hypoventilation
- Désaturation:
  - Fréquente,
  - Seuil (90-95%)?
  - O2?
- N*,V*: 0-60%

- Effets fœtaux et néonataux
- Pas d'⇑ ARCF
- Apgar: Nx
- Gaz sanguins ombilicaux: Nx
- Naloxone:0

- Surveillance
  - 1/1,
  - SaO2

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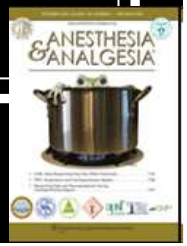


Obstetric analgesia: a comparison of patient-controlled meperidine, remifentanil, and fentanyl in labour

M. R. Douma[1]*, R. A. Verwey[2], C. E. Kam-Endtz[3], P. D. van der Linden[4] and R. Stienstra[5]

- EPRDA, N= 180 (3X60) ⇒159
- Remifentanil (52)
  - Dose de charge: 40 µg
  - Bolus: 40 µg
  - Interdiction: 2min
  - Max: 1200 µg/h
- Fentanyl (54)
  - Dose de charge 50 µg
  - Bolus: 20 µg
  - Interdiction: 5 min
  - Max: 240 µg/h
- Meperidine (53)
  - Dose de charge: 50 mg
  - Bolus: 5 mg
  - Interdiction: 10 min
  - Dose totale Max: 200 mg

- Possibilité de changer pour APD
- Surveillance constante par investigateur
- Arrêt à dilatation complète
- VAPS
- PA, FC, FR, SaO2
- Sedation
- Satisfaction
- N*, V*

- Cardiotocographe: ns
- Apgar 1 & 5 min: ns
- Gaz du sang cordon: ns
- NACS: ns
- Naloxone
- O2

British Journal of Anaesthesia **104** (2): 209–15 (2010)

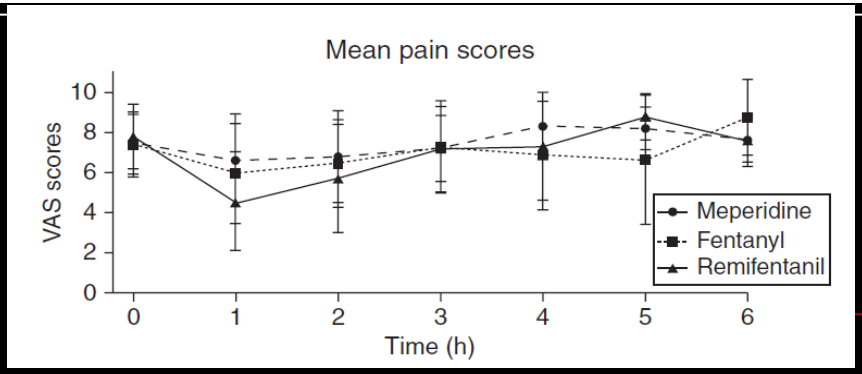


Table 3 Intra- and intergroup comparison pain. Data are means (SD). NS, not significant; R *vs* P, remifentanil *vs* meperidine; R *vs* F, remifentanil *vs* fentanyl; P *vs* F, meperidine *vs* fentanyl; DELTA, change in VAS score relative to the VAS score at inclusion

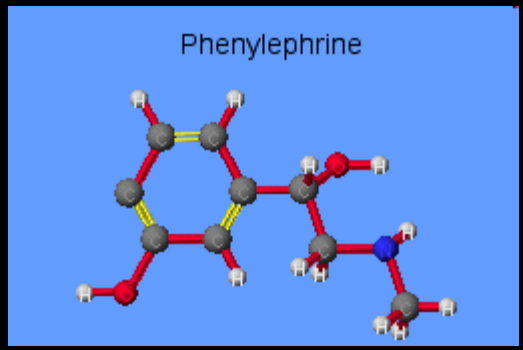
	Meperidine	Fentanyl	Remifentanil	*P*-value
Intragroup				
VAS at inclusion	7.41 (1.5), *n*=53	7.40 (1.6), *n*=54	7.8 (1.6), *n*=52	
VAS at 1 h	6.61 (2.3), *n*=53	5.96 (2.5), *n*=54	4.56 (2.4), *n*=52	
P VAS 1 *vs* VAS 0	<0.02	<0.001	<0.0001	
VAS at 2 h	6.78 (2.3), *n*=31	6.47 (2.2), *n*=39	5.70 (2.7), *n*=38	
P VAS 2 *vs* VAS 0	NS	<0.05	<0.001	
VAS at 3 h	7.19 (1.7), *n*=17	7.26 (2.3), *n*=23	7.16 (2.1), *n*=27	
P VAS 3 *vs* VAS 0	NS	NS	NS	
Intergroup				
VAS at inclusion	7.41 (1.5), *n*=53	7.40 (1.6), *n*=54	7.8 (1.6), *n*=52	NS
DELTA VAS 1 h	−0.8 (2.2), *n*=53	−1.4 (2.4), *n*=52	−3.2 (2.9), *n*=52	R *vs* P, <0.001; R *vs* F, <0.01; P *vs* F, NS
DELTA VAS 2 h	−0.5 (2.8), *n*=31	−0.9 (2.6), *n*=39	−2.0 (3.1), *n*=38	NS
DELTA VAS 3 h	−0.1 (2.2), *n*=17	−0.4 (2.6), *n*=23	−0.5 (2.3), *n*=27	NS

Conclusions. The efficacy of meperidine, fentanyl, and remifentanil PCA for labour analgesia varied from mild to moderate. Remifentanil PCA provided better analgesia than meperidine and fentanyl PCA, but only during the first hour of treatment. In all groups, pain scores returned to pre-treatment values within 3 h after the initiation of treatment.

Anesthésie pour Césarienne

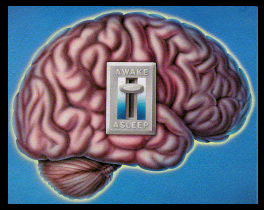
ALR

- HypoTA
- Remplissage
- Vasopresseurs

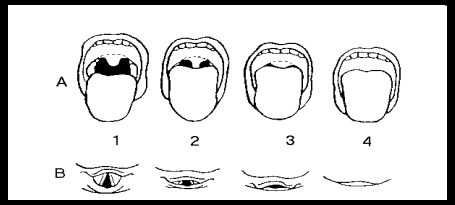


AG

- Conscience peropératoire



- Airway



Prevention of maternal hypotension after regional anaesthesia for caesarean section

Warwick D. Ngan Kee

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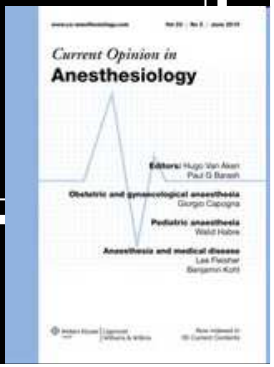
- Physiopathologie
  - Dépendance vis-à-vis du tonus sympathique
    - Effet limité du remplissage et du Tilt G
- Contre
  - Pré-remplissage Cristalloïdes
  - Ephedrine
- Pour
  - Co-remplissage
  - Colloïdes
  - Doses réduites AL (CSE)
  - Phenylephrine

Current Opinion in Anaesthesiology 2010, 23:304–309



Can J Anesth/J Can Anesth (2010) 57:24–31
DOI 10.1007/s12630-009-9206-7

REPORTS OF ORIGINAL INVESTIGATIONS

Preload or coload for spinal anesthesia for elective Cesarean delivery: a meta-analysis

Pré-charge ou co-charge lors de rachianesthésie pour un accouchement non urgent par césarienne: une méta-analyse

Arnab Banerjee, MD · Renato M. Stocche, MD, PhD · Pamela Angle, MD · Stephen H. Halpern, MD

Division of Obstetrical Anesthesia and the Obstetrical Anesthesia Research Unit of the Sunnybrook Research Institute, Sunnybrook Health Sciences Centre at Women's College Hospital, University of Toronto, 76 Grenville Street, Toronto, Ontario M5S 1B2, Canada
e-mail: Stephen.Halpern@sunnybrook.ca

- N= 8 études ,518 patientes
  - 4 Colloïdes (2007-2009)
  - 4 Cristalloïdes (2004-2006)

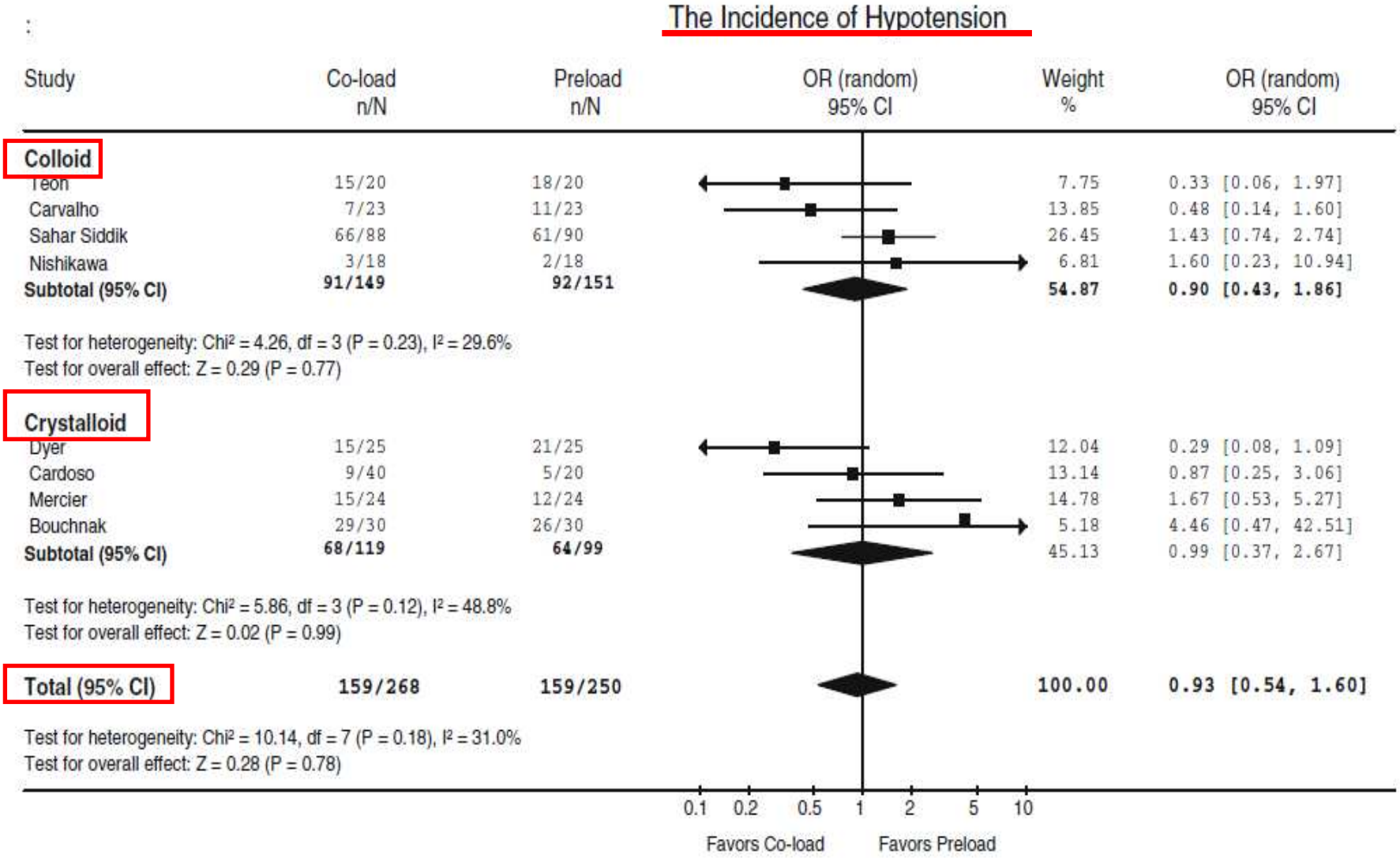


Fig. 3 Forest plot showing the incidence of hypotension. The sample size, event rate, and pooled estimates of the odds ratios (OR) are shown. The 95% confidence intervals (CI) are shown as lines for individual studies and as diamonds for pooled estimates

Table 3 Other outcomes

Outcome	Number of studies	Number of participants	Standardized mean difference (continuous data) or odds ratio (n/N) and 95% confidence interval (random)	Heterogeneity (I^2, %)	*P* value
Lowest blood pressure	6 (11, 13, 14, 16–18)	408	0.02 (−0.23 to 0.28)	32	0.86
Vasopressor dose[a]	7 (10–14, 17, 18)	458	−0.36 (−0.84 to 0.13)	83	0.15
Incidence of nausea and vomiting (n/N)	6 (10–12, 14, 17, 18)	422	1.17 (0.73 to 1.89)	21	0.51
Umbilical artery pH	6 (11–14, 17, 18)	398	0.04 (−0.16 to 0.23)	0	0.71
Apgar scores <7 at 5 min	7 (10–14, 17, 18)	458	No events reported	–	–

[a] In standardized units

Conclusions *It is unnecessary to delay surgery in order to deliver a preload of fluid. Regardless of the fluid loading strategy, the incidence of maternal hypotension is high. Prophylactic or therapeutic vasopressors may be required in a significant proportion of patients.*

Phenylephrine

Anesthesiology 2009; 111:506–12

Placental Transfer and Fetal Metabolic Effects of Phenylephrine and Ephedrine during Spinal Anesthesia for Cesarean Delivery

Warwick D. Ngan Kee, M.B.Ch.B., M.D., F.A.N.Z.C.A., F.H.K.A.M., Kim S. Khaw, M.B.B.S., F.R.C.A., F.H.K.A.M.,† Perpetua E. Tan, B.Sc., M.Phil.,‡ Floria F. Ng, R.N., B.A.Sc.,§ Manoj K. Karmakar, M.B.B.S., F.R.C.A., F.H.K.A.M.†*

Anesthesiology, V 111, No 3, Sep 2009

Anesthesiology 2009; 111:506-12

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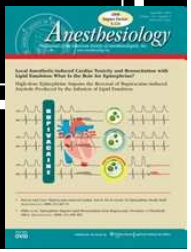
- Ephedrine
- Altération status acido-basique fœtal
- Passage transplacentaire & effets métaboliques (R. β-adrénergiques)

- **Méthode**
- N = 104 ASA 1 & 2
- Pas de pré-remplissage,
- co-remplissage cristalloïde (max 2L)
- Rachi: Bupi HB 10mg + Fenta.15 µg

- Perf. vasopresseur ⇒ PAS initiale
  - Phenylephrine 100 µg /ml vs
  - Ephedrine 8mg/ml
    - 60 ml/h
    - Stop si PAS 20% > baseline
    - Poursuivie si PAS ≤ baseline
    - Si PAS < 80% baseline
      - Rescue phenylephrine 100 µg

- Délivrance: Prélèvement sanguins
  - Artériel maternel
  - veineux et artériel ombilical
    - Gaz sanguins
    - Phenylephrine, Ephedrine
    - Lactate, Glucose
    - Epinephrine, Norepinephrine



Anesthesiology 2009; 111:506–12

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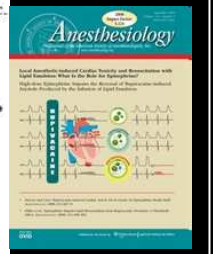

Table 2. Blood Gases

	Phenylephrine Group	Ephedrine Group	*P* Value
Maternal arterial			
Number of samples	45	45	
pH	7.42 [7.41 to 7.44]	7.42 [7.41 to 7.43]	0.14
Pco_2, mmHg	33 [30 to 35]	34 [32 to 36]	0.15
Po_2, mmHg	111 [101 to 123]	112 [99 to 122]	0.68
Base excess, mmol/l	–2.3 [–2.9 to –1.5]	–2.3 [–3.1 to –1.3]	0.98
Umbilical arterial			
Number of samples	51	51	
pH	7.33 [7.30 to 7.35]	7.25 [7.14 to 7.29]	<0.001
Pco_2, mmHg	49 [42 to 54]	56 [48 to 66]	<0.001
Po_2, mmHg	20 [18 to 22]	20 [17 to 24]	0.57
Base excess, mmol/l	–1.9 [–3.2 to –0.6]	–4.8 [–8.7 to –3.0]	<0.001
Umbilical venous			
Number of samples	49	52	
pH	7.34 [7.33 to 7.35]	7.31 [7.26 to 7.34]	<0.001
Pco_2, mmHg	46 [43 to 49]	47 [42 to 51]	0.49
Po_2, mmHg	28 [25 to 32]	30 [27 to 33]	0.03
Base excess, mmol/l	–1.6 [–2.4 to –0.7]	–4.3 [–6.2 to –2.6]	<0.001

Anesthesiology 2009; 111:506-12

Placental Transfer and Fetal Metabolic Effects of Phenylephrine and Ephedrine during Spinal Anesthesia for Cesarean Delivery

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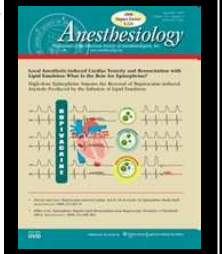


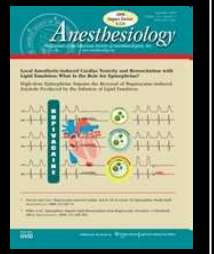
Table 3. Plasma Concentrations of Lactate, Glucose, Epinephrine, Norepinephrine, Phenylephrine, and Ephedrine

	Phenylephrine Group	Ephedrine Group	*P* Value
Maternal arterial			
Lactate, mmol/l	2.3 [2.0–2.7] (44)	2.4 [2.0–2.7] (45)	0.56
Glucose, mg/dl	80 [76–85] (44)	86 [80–94] (45)	0.003
Epinephrine, pg/ml	33.5 [19–54] (46)	47 [22–73] (50)	0.046
Norepinephrine, pg/ml	115 [92–178] (45)	297 [223–390] (50)	<0.001
Phenylephrine, ng/ml	8.2 [5.7–10.7] (47)		
Ephedrine, ng/ml		366.5 [306.5–523.5] (50)	
Umbilical arterial			
Lactate, mmol/l	2.2 [1.9–2.6] (52)	4.2 [3.0–6.7] (49)	<0.001
Glucose, mg/dl	55 [49–60] (52)	63 [59–71] (49)	<0.001
Epinephrine, pg/ml	525 [289–852] (45)	696 [507–1,291] (49)	0.019
Norepinephrine, pg/ml	2,158 [1,526–3,403] (46)	5,523 [3,066–9,538] (49)	<0.001
Phenylephrine, ng/ml	0.9 [0.6–1.2] (47)		
Ephedrine, ng/ml		355.2 [254.5–545.2] (47)	
Umbilical venous			
Lactate, mmol/l	2.2 [1.9–2.4] (51)	3.4 [2.7–5.1] (50)	<0.001
Glucose, mg/dl	66 [61–70] (51)	73 [68–79] (50)	<0.001
Epinephrine, pg/ml	97 [50–214] (50)	132 [84–226] (52)	0.039
Norepinephrine, pg/ml	446 [293–683] (50)	1,568 [812–2,940] (52)	<0.001
Phenylephrine, ng/ml	1.4 [0.8–1.9] (47)		
Ephedrine, ng/ml		434.5 [334.0–594.3] (52)	

Anesthesiology 2009; 111:506–12

Placental Transfer and Fetal Metabolic Effects of Phenylephrine and Ephedrine during Spinal Anesthesia for Cesarean Delivery

Warwick D. Ngan Kee, M.B.Ch.B., M.D., F.A.N.Z.C.A., F.H.K.A.M., Kim S. Khaw, M.B.B.S., F.R.C.A., F.H.K.A.M.,† Perpetua E. Tan, B.Sc., M.Phil.,‡ Floria F. Ng, R.N., B.A.Sc.,§ Manoj K. Karmakar, M.B.B.S., F.R.C.A., F.H.K.A.M.†*



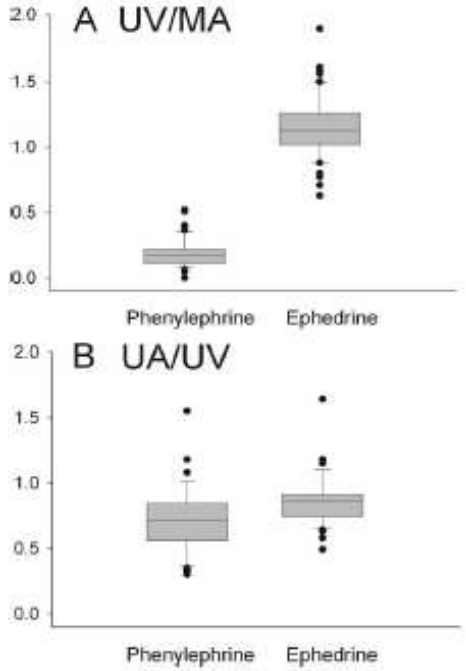


Fig. 1. Plasma concentration ratios for phenylephrine and ephedrine. Data are shown for (*A*) umbilical venous to maternal arterial (UV/MA) and (*B*) umbilical arterial to umbilical venous (UA/UV) ratios. ***Box plots*** display the 25th, 50th, and 75th percentiles as ***horizontal lines*** on a bar, ***whiskers*** above and below the box indicate the 90th and 10th percentiles, and data beyond the 10th and 90th percentiles are displayed as individual ***points***. Data were significantly different between groups ($P \leq 0.001$) for both concentration ratios.

	Ephedrine	Phenylephrine	P
UV / MA	**1.13**	**0.17**	< 0.001
UA / UV	**0.83**	**0.71**	0.001

- Passage transplacentaire
  - Ephedrine > Phenylephrine
- Metabolisation ou redistribution foetale
  - Ephedrine < Phenylephrine

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Table 4. Hemodynamic Changes, Intravenous Fluid, and Vasopressor Consumption

	Phenylephrine Group	Ephedrine Group	*P* Value
Total volume of vasopressor given, ml	13 [9.6–16.9]	7.7 [5.6–9.9]	<0.001
Total intravenous fluid, ml	1,725 [1,200–2,010]	1,800 [1,450–2,010]	0.36
Incidence of hypotension	2 (4%)	13 (25%)	0.002
Minimum recorded systolic blood pressure, mmHg	104 [96–109]	101 [87–108]	0.33
Rescue phenylephrine required	1 (2%)	11 (22%)	0.002
Incidence of hypertension	21 (41%)	24 (47%)	0.55
Maximum recorded systolic blood pressure, mmHg	134 [127–140]	139 [129–152]	0.044
Incidence of bradycardia (heart rate < 50 beats/min)	6 (12%)	0 (0%)	0.03
Minimum recorded heart rate, beats/min	58 [54–65]	70 [63–78]	<0.001
Nausea or vomiting	1 (2%)	18 (35%)	<0.001

- Confirmation pH et BE ephedrine < phenylephrine
  - Passage transplacentaire ephedrine > phenylephrine
  - Metabolisation et ou redistribution ephedrine < phenylephrine
  - Effet métabolique: Lactate, glucose, epinephrine, norepinephrine , UA PCO2
- Balance D02 (⇓par phenylephrine) - V02 (⇑ par ephedrine)
  - Quid si insuffisance placentaire chronique?
- Durée: Induction - incision: 20min, extraction 27 min
- Doses
  - Ephedrine: 62 mg
  - Phenylephrine: 1300 µg

mise, although in a recent comparison of ephedrine and phenylephrine in nonelective Cesarean delivery, we did not find that use of moderate doses of phenylephrine (median dose before delivery, 100 µg; range 0–1,200 µg) to be associated with any evidence of detrimental effects on the fetus.[14]

Anaesthesia, 2008, **63**, pages 1319–1326

ORIGINAL ARTICLE

International Journal of Obstetric Anesthesia (2010) 19, 44–49

Retrospective study of association between choice of vasopressor given during spinal anaesthesia for high-risk caesarean delivery and fetal pH

D.W. Cooper, S. Sharma, P. Orakkan, S. Gurung
Department of Anaesthesia, James Cook University Hospital, Middlesbrough, UK

- N= 385 « high risk »C.S.
  - ARCF, Dystocie, HTA , RCIU, Hemorragie
  - 122 Ephedrine : 12 mg (IQR 6-18)
  - 148 Phenylephrine : 200 µg (IQR 100-400)
  - 115 Pas de vasopresseur

Table 3 Fetal outcomes

	No-vasopressor (n = 115)	Group E (n = 122)	Group P (n = 148)	*P*
Arterial blood gas values:				
pH	7.26 (7.21 – 7.30)	7.27 (7.22 – 7.30)	7.28 (7.22 – 7.32)	0.21
PO_2 (kPa)	1.5 (1.0 – 2.2)	1.5 (1.0 – 2.1)	1.6 (1.0 – 2.0)	0.93
PCO_2 (kPa)	6.8 (6.2 – 7.9)	7.1 (6.3 – 7.9)	6.9 (6.1 – 7.3)	0.29
Base excess (mEq/L)	−2.3 (−4.8 to −1.1)	−2.4 (−4.9 to −1.0)	−2.8 (−4.5 to −1.4)	0.68
Venous blood gas values:				
pH	7.32 (7.28 – 7.35)	7.33 (7.29 – 7.36)	7.34 (7.29 – 7.37)	0.28
PO_2 (kPa)	2.7 (2.3 – 3.3)	3.0 (2.4 – 3.7)#	2.7 (2.2 – 3.4)*	0.042
PCO_2 (kPa)	5.7 (5.3 – 6.3)	5.8 (5.1 – 6.3)	5.7 (5.2 – 6.2)	0.83
Base excess (mEq/L)	−2.7 (−4.6 to −1.1)	−2.7 (−4.9 to −1.2)	−2.3 (−4.1 to −1.1)	0.63
Other fetal outcomes:				
Umbilical artery pH < 7.20	23%	20%	15%	0.20
5-min Apgar score < 7	2.6%	0%	4.1%	0.089
Admission to neonatal unit	33%	23%#	37%*	0.040

Data are median (IQR) or proportion. P-value column refers to comparison of the three groups.
* $P < 0.05$ compared with ephedrine;
# $P < 0.05$ compared with phenylephrine.

- ARCF= seule variable corrélée avec pH
- Faibles doses d'éphédrine limitent l'impact métabolique?

A survey of the management of spinal-induced hypotension for scheduled cesarean delivery

T.K. Allen, H.A. Muir, R.B. George, A.S. Habib
Department of Anesthesiology, Duke University Medical Center, Durham, North Carolina, USA

- Enquête SOAP 2007
- Prévention
  - 33% Pré-remplissage seul
  - 32% Préremplissage + V
  - 21% Co-remplissage + V
  - 11% Co-remplissage seul
  - 1% Aucun
- Soluté
  - 90% Cristalloïde
  - 1% Colloïde
  - 9% ~
  - Cristalloïde
    - 1L (72%), 2L (23%) > 2L (2%)
  - Colloïde
    - 0.5L (8%), 1L (2%), > 1L (1%)
- Vasopresseur
  - 32% Ephedrine
  - 26% Phenylephrine
  - 33% ~ FC
  - 78% Bolus

International Journal of Obstetric Anesthesia (2009) 18, 356–361

A survey of the management of spinal-induced hypotension for scheduled cesarean delivery

T.K. Allen, H.A. Muir, R.B. George, A.S. Habib
Department of Anesthesiology, Duke University Medical Center, Durham, North Carolina, USA

- Traitement
  - Trigger:
    - 51%: - 20%baseline
    - 13%: PAS initiale
  - 32% Ephedrine
  - 23% Phenylephrine
  - 41% ~ FC
  - 86% bolus
- Conclusions
  - Large variabilité de pratiques
  - Popularité persistante
    - Pré-remplissage cristalloïdes
      - Malgré faible performance
    - Ephedrine
      - Malgré effets 2^{e}

Pregnancy Does Not Enhance Volatile Anesthetic Sensitivity on the Brain

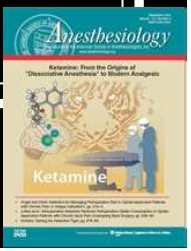
An Electroencephalographic Analysis Study

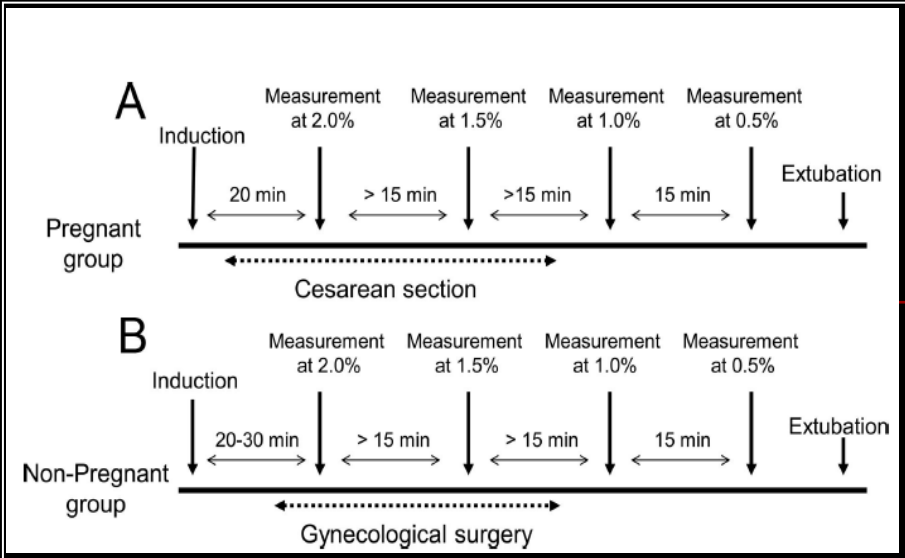
Hiroshi Ueyama, M.D.,* Satoshi Hagihira, M.D., Ph.D.,§ Masaki Takashina, M.D.,† Aya Nakae, M.D.,§ Takashi Mashimo, M.D., Ph.D.‡

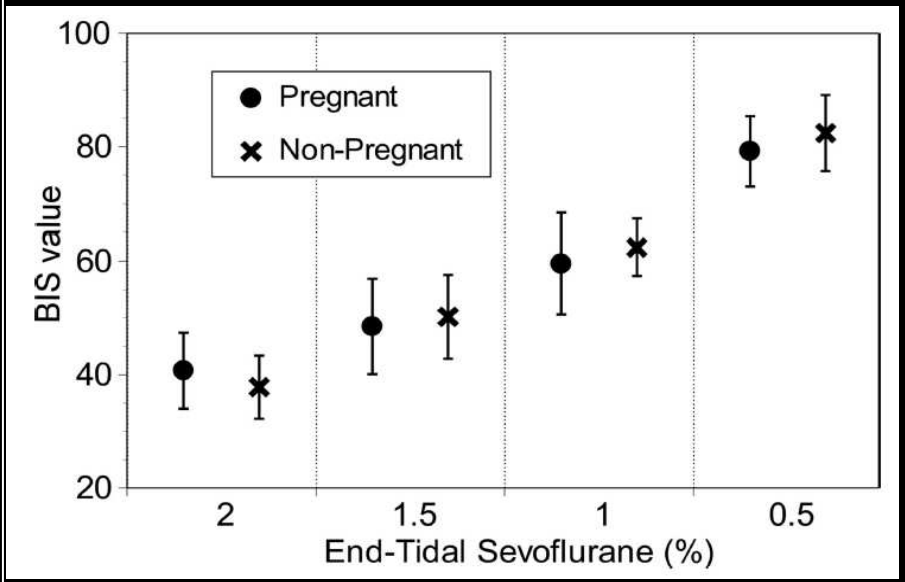
- ⇓ CAM chez femme enceinte
  - -30% dès 1er T. (Gin T, 1994)
- ⇑ Mémorisation peropératoire pdt Césarienne
  - 0.26% - 0.4%.
- BIS, SEF95, Bicoherence
  - Paramètres EEG reflet de l'effet hypnotique des anesthésiques
- CAM
  - 50% abscence de réponse motrice
  - reflet d'un effet spinal et non cerebral
  - Mauvais indicateur d'inconscience & d'amnésie

- Comparaison effets EEG du sevolurane 2%-0.5%
  - Césarienne/AG (n=15)
  - Chirurgie gyneco (n=15)
  - Induction
    - Thiopental 4 mg/kg
    - Fentanyl 2µg /kg
    - Vecuronium 0.15 mg/kg
    - IOT
  - Maintenance
    - O2/air
    - ET Sevo
      - 2% - 1.5% pdt chir
      - 1% - 05% post chir
    - Fentanyl 2 µg/kg/ 30min

Anesthesiology 2010; 113:577–84

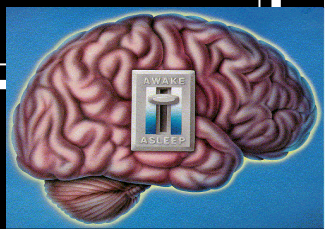






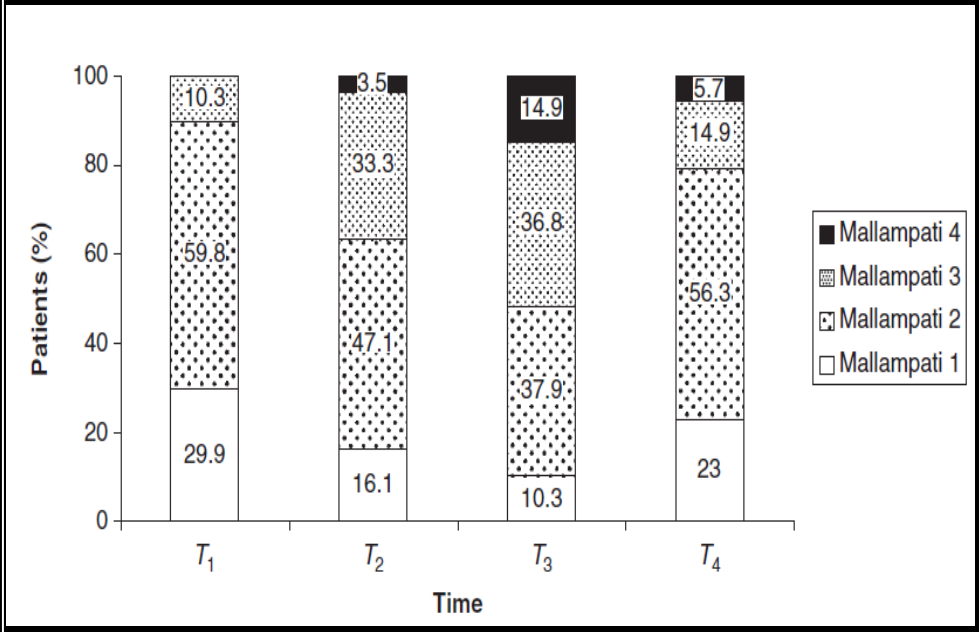
	P	NP
ET sevo 1.5% BIS > 60	1/15	1/15
ET SEVO 1% BIS > 60	8/15	10/15

- Mêmes [sevo] ⇒ Même Bis
- La ⇓ CAM chez femme enceinte ≠ effet accru au niveau cérébral
- Mêmes [halogénés] nécessaires pour prévenir mémorisation perop



Mallampati class changes during pregnancy, labour, and after delivery: can these be predicted?

M. Boutonnet[1], V. Faitot[1], A. Katz[1], L. Salomon[2] and H. Keita[1]*

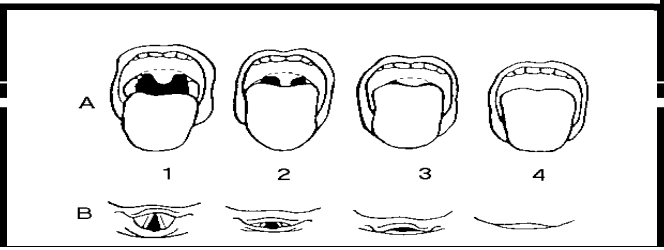


	T1	T2	T3	T4
M 3-4 (%)	10.3*	36.8*	51.7*	20.7*

- N= 87
- T1:Consultation (8e mois)
- T2: Péri
- T3: 20 min post Acc.
- T4: 48h post Acc.

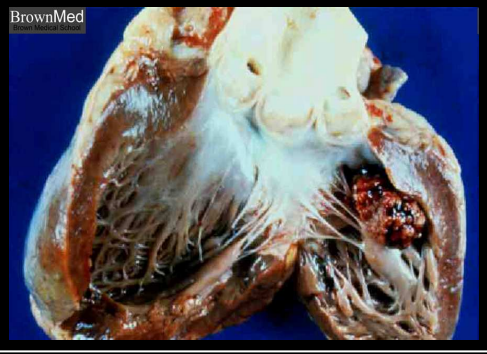
- Absence de facteur prédictif
  - Gain pondéral,
  - Durée 1er et 2e stade travail
  - Volume perfusé

- Importance de l'évaluation de l'airway en salle d'Acc. Avant toute procédure sous AG



British Journal of Anaesthesia 104 (1): 67–70 (2010)

Antibioprophylaxie



SFAR

Antibioprophylaxie pour césarienne avant incision ou après clampage du cordon ? Méta-analyse

E. Boselli [a,*], L. Bouvet [a], T. Rimmelé [a], D. Chassard [b], B. Allaouchiche [a]

annales françaises d'ANESTHÉSIE ET DE RÉANIMATION

- 5 études, 1108 patientes
  - Avant incision, n= 456
  - vs Après clampage, n=563
- Réduction significative
  - Taux d'endométrite:
    - OR 0.59, 95%CI 0.35-0.98
  - Morbidité infectieuse maternelle globale:
    - OR 0.51, 95%CI 0.32-0.82

Annales Françaises d'Anesthésie et de Réanimation 28 (2009) 855–867

Antibioprophylaxie pour césarienne avant incision ou après clampage du cordon ? Méta-analyse

- Pas de ≠ce significative
  - Infection de paroi
  - Infection néonatale (!puissance!)
  - Sepsis néonatal suspecté ou documenté
  - Admission réanimation néonatale
- Confirmation

Costantine MM, Rahman M, Ghulmiyah L, Byers BD, Longo M, Wen T, et al. Timing of perioperative antibiotics for cesarean delivery: a metaanalysis. Am J Obstet Gynecol 2008;199 [301e1–6].

Kaimal AJ, Zlatnik MG, Cheng YW, Thiet M-P, Connatty E, Creedy P, et al. Effect of a change in policy regarding the timing of prophylactic antibiotics on the rate of postcesarean delivery surgical-site infections. Am J Obstet Gynecol 2008;199 [310.e1–e5].

SFAR

The American College of Obstetricians and Gynecologists

Women's Health Care Physicians

COMMITTEE OPINION

Number 465 • September 2010

Committee on Obstetric Practice

This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

Antimicrobial Prophylaxis for Cesarean Delivery: Timing of Administration

ABSTRACT: Antimicrobial prophylaxis for cesarean delivery has been a general practice for cesarean deliveries because it significantly reduces postoperative maternal infectious morbidity. Recently, several randomized clinical trials investigated the timing of antimicrobial prophylaxis for cesarean delivery. The Committee on Obstetric Practice recommends antimicrobial prophylaxis for all cesarean deliveries unless the patient is already receiving appropriate antibiotics (eg, for chorioamnionitis) and that prophylaxis should be administered within 60 minutes of the start of the cesarean delivery.

SFAR

European Heart Journal (2009) **30**, 2369–2413
doi:10.1093/eurheartj/ehp285

ESC GUIDELINES

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Guidelines on the prevention, diagnosis, and treatment of infective endocarditis (new version 2009)

The Task Force on the Prevention, Diagnosis, and Treatment of Infective Endocarditis of the European Society of Cardiology (ESC)

Endorsed by the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) and by the International Society of Chemotherapy (ISC) for Infection and Cancer

- Indications limitées
  - Cardiopathies à haut risque + procédure dentaire à haut risque

Table 4 Cardiac conditions at highest risk of infective endocarditis for which prophylaxis is recommended when a high risk procedure is performed

Recommendations: prophylaxis	Class[a]	Level[b]
Antibiotic prophylaxis should only be considered for patients at highest risk of IE 1. Patients with a prosthetic valve or a prosthetic material used for cardiac valve repair 2. Patients with previous IE 3. Patients with congenital heart disease a. cyanotic congenital heart disease, without surgical repair, or with residual defects, palliative shunts or conduits b. congenital heart disease with complete repair with prosthetic material whether placed by surgery or by percutaneous technique, up to 6 months after the procedure c. when a residual defect persists at the site of implantation of a prosthetic material or device by cardiac surgery or percutaneous technique	IIa	C
Antibiotic prophylaxis is no longer recommended in other forms of valvular or congenital heart disease	III	C

[a]Class of recommendation.
[b]Level of evidence.

Table 5 Recommendations for prophylaxis of infective endocarditis in highest risk patients according to the type of procedure at risk

Recommendations: prophylaxis	Class[a]	Level[b]
A - Dental procedures: **Antibiotic prophylaxis should only be considered for** dental procedures requiring manipulation of the gingival or periapical region of the teeth or perforation of the oral mucosa	IIa	C
Antibiotic prophylaxis is not recommended for local anaesthetic injections in non-infected tissue, removal of sutures, dental X-rays, placement or adjustment of removable prosthodontic or orthodontic appliances or braces. Prophylaxis is also not recommended following the shedding of deciduous teeth or trauma to the lips and oral mucosa	III	C
B - Respiratory tract procedures*: **Antibiotic prophylaxis is not recommended for respiratory tract procedures, including** bronchoscopy or laryngoscopy, transnasal or endotracheal intubation	III	C
C - Gastrointestinal or urogenital procedures*: **Antibiotic prophylaxis is not recommended for** gastroscopy, colonoscopy, cystoscopy or transoesophageal echocardiography	III	C
D - Skin and soft tissue*: **Antibiotic prophylaxis is not recommended for any procedure**	III	C

[a]Class of recommendation.
[b]Level of evidence.
*For management when infections are present, please refer to text.

b. Other at-risk procedures

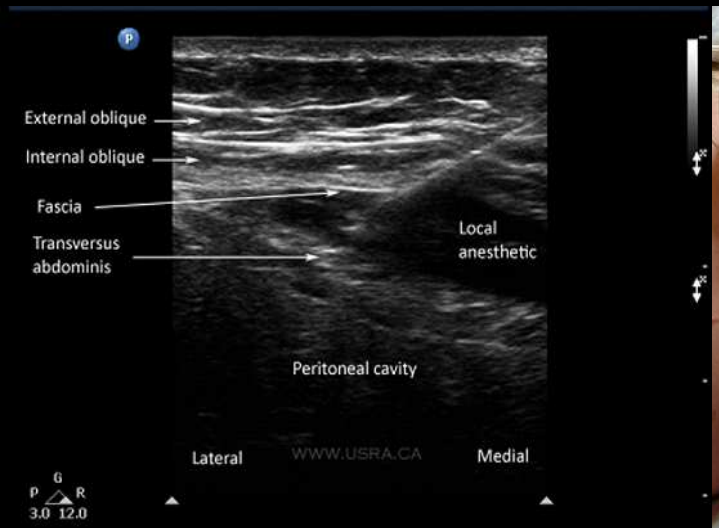
There is no compelling evidence that bacteraemia resulting from either respiratory tract procedures, gastrointestinal or genitourinary procedures, dermatological or musculoskeletal procedures cause IE. Thus, prophylaxis is not recommended in patients undergoing these procedures.

ii. Gastrointestinal or genitourinary procedures. In the case of an established infection or if antibiotic therapy is indicated to prevent wound infection or sepsis associated with a gastrointestinal or genitourinary tract procedure in patients described in *Table 4*, it is reasonable that the antibiotic regimen includes an agent active against enterococci, e.g. ampicillin, amoxicillin, or vancomycin. Vancomycin should only be administered to patients unable to tolerate β-lactams. If infection is caused by a known or suspected strain of resistant enterococcus, consultation with an infectious diseases specialist is recommended.

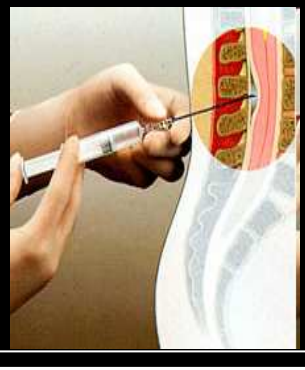
SFAR

Analgésie Post-Césarienne

- TAP block



- M* Périmédullaire



Ultrasound-guided transversus abdominis plane block for analgesia after Caesarean delivery

D. Belavy[1 2*], P. J. Cowlishaw[1], M. Howes[1] and F. Phillips[1]

- N=50 césariennes élective sous rachi
  - Bupi HB 11mg + Fentanyl 15 µg. Pas de M* IT
  - US -TAP block Ropi 0.5% vs Sérum Phy
    - Acetaminophen 1gr + Diclofenac 100mg IR
    - Acetaminophen 1gr/6h + Ibuprofen 400mg/8h PO
    - PCA M* 24h (1mg, 5min LO, pas de max/h)
  - Primary outcome: consommation M*
    - Délai 1er demande
    - Consommation 6-12-18-24h
    - EVA D* moyenne sur 24h
    - EVA Satisfaction
    - Antiémétiques

British Journal of Anaesthesia 103 (5): 726–30 (2009)

Ultrasound-guided transversus abdominis plane block for analgesia after Caesarean delivery

D. Belavy[1 2*], P. J. Cowlishaw[1], M. Howes[1] and F. Phillips[1]

Table 2 Patient-controlled morphine use after surgery. IQR, inter-quartile range. *Mann–Whitney *U*-test

	Placebo (mg), median (IQR)	Active (mg), median (IQR)	*P*-value*
Cumulative morphine dose at			
6 h	12.0 (17.0)	6.0 (6.0)	0.039
12 h	16.5 (22.0)	10.0 (8.0)	0.049
18 h	25.5 (28.0)	16.0 (12.0)	0.034
24 h	31.5 (28.0)	18.0 (21.0)	0.046
Morphine dose during time interval			
6–12 h	5.0 (6.0)	4.0 (3.0)	0.226
12–18 h	7.0 (11.0)	4.0 (4.0)	0.143
18–24 h	3.5 (7.0)	4.0 (10.0)	0.966

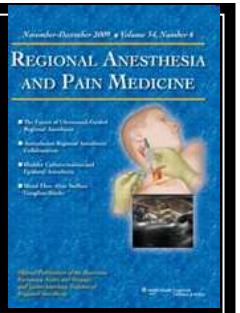
- Epargne M*
- Satisfaction
- Nausées
- A considérer si pas M* IT
  - *Confirme McDonnell, AA 2008*
    - *48h, pas US*

	TAP	Placebo	P
M*/ 24h	18 mg	31 mg	0.046
1er demande	3h	2h	0.01
EVA Satisfaction	96	77	0.008
EVA Douleur	23	26.5	NS
Antiemetics	1	6	0.03

TAP Block + Morphine IT

Costello & al

Reg Anesth Pain Med 2009; Nov-Dec; 34: 586-9

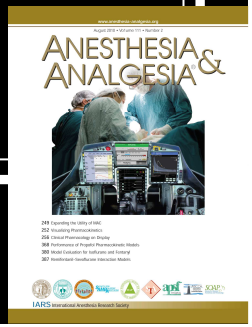


- N = 100 CS sous Rachi avec M* IT
- TAP block ropivacaine vs placebo
- Analgésie multimodale
- Evaluation H 6-12-24-48
- Scores de douleur similaires
- Consommations opiacés similaires
- Conclusion:
  - TAP block dans une stratégie d'analgésie mutimodale comprenant M* IT n'améliore pas la qualité de l'analgésie

The Analgesic Efficacy of Subarachnoid Morphine in Comparison with Ultrasound-Guided Transversus Abdominis Plane Block After Cesarean Delivery: A Randomized Controlled Trial

Ghassan E. Kanazi, MD,* Marie T. Aouad, MD,* Faraj W. Abdallah, MD,* Mohamad I. Khatib, PhD,* Al Moataz Billah F. Adham, MD,* Diala W. Harfoush, MD,* and Sahar M. Siddik-Sayyid, MD, FRCA*

- N= 57 césariennes sous Rachi
- TAP block (n= 29)
  - Bupi HB 12.5 mg + SP
  - TAP block Ropi 0.375% 20ml X 2
- IT M*(n= 28)
  - Bupi HB 12.5 mg + M* 0.2mg
  - TAP block SP
- IR Diclofenac 100mg / 12h
- IV Paracetamol 1gr / 6h
- Rescue:IV Tramadol 100mg / 8h SN
- Evaluation H 2-4-6-12-24-36-48
- Primary outcome:
  - Délai avant 1ere demande analg.
- Autres paramètres
  - EVA D*
    - somatique et viscerale
    - Repos et mvt
  - Consommation tramadol 48h
  - N*, V* 1-4
  - Sédation: 1- 4
  - Prurit: 1-4
  - Dépression respiratoire (< 10)
  - Satisfaction 1- 3



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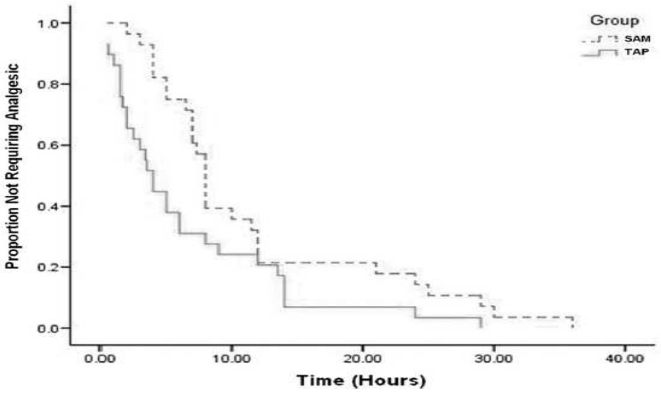


Figure 2. Kaplan–Meier graph of the proportion of patients in each group over time who did not require supplemental analgesic (P = 0.02, log-rank test). SAM = subarachnoid morphine; TAP = transversus abdominis plane.

Table 2. Postoperative Analgesic Data

	Group SAM (n = 28)	Group TAP (n = 29)	*P*
Time to first analgesic request (hours)	8 (2–36)	4 (0.5–29)	0.01
Number of Tramadol doses received 0–12 hours	0 (0–1)	0 (0–2)	0.03
Number of Tramadol doses received 13–24 hours	0 (0–1)	0 (0–1)	0.49
Number of oral paracetamol doses received 25–48 hours	1 (0–3)	1 (0–3)	0.80

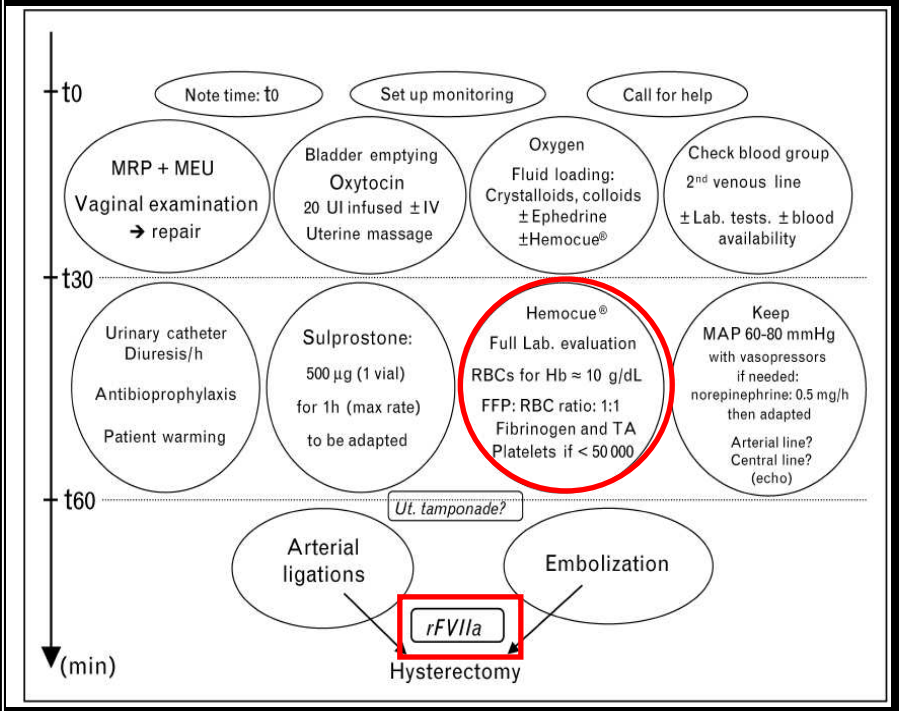
SAM = subarachnoid morphine; TAP = transversus abdominis plane.

- Analgésie ITM*> TAP
  - ⇑ Durée d'analgésie
  - ⇓ Douleur viscerale initiale
  - ⇓ Consommation tramadol initiale
- Effets secondaires ITM* > TAP
  - ⇑ Prurit (39% θ)
  - ⇑ N*
  - Sédation: ns
  - Dépression respi: 0
  - Satisfaction: idem
    - Efficacité/ effets 2e avec 0.1mg ?

Hémorragies et transfusion

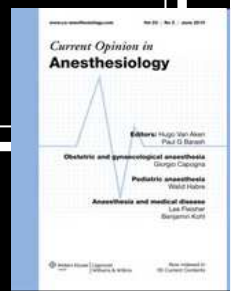
Use of clotting factors and other prohemostatic drugs for obstetric hemorrhage

Frédéric J. Mercier[a] and Marie-Pierre Bonnet[b,c]



- CGR & PFC
- Ratio 1/1
  - ⇐Traumato militaire
- Cible: Hb =10gr/dl
- Intérêt du sang total?
  - Restauration volémique et fibri
  - ⇓Exposition à donneurs multiples
  - Bénéfice /Risque
    - Nécrose tubulaire (CGR)
    - OAP (Sang total)
      - Alexander 2009 Obstet Gynecol
  - Etudes nécessaires

Current Opinion in Anaesthesiology 2010, 23:310–316



Use of clotting factors and other prohemostatic drugs for obstetric hemorrhage

Frédéric J. Mercier[a] and Marie-Pierre Bonnet[b,c]

- Plaquettes
- Cible > 50.000
  - Absence d'évidence
  - Importance saignement
- Administration proactive?
  - Hémor. massives non OB
    - Pack transfusionnel
      - 5CG + 5 PFC + 2U Cpq
    - VS approche classique
  - ⇓ Mortalité J30 & J90
  - ⇑ Pq prédictif de ⇓ mortalité
  - Etudes nécessaire en OB

- Fibrinogène
- Rôle majeur souligné
- < 2gr
  - Vpp pour hpp sévère 100%
- Seuil 1gr voire 1.5-2gr
- Etudes nécessaires

Use of clotting factors and other prohemostatic drugs for obstetric hemorrhage

Frédéric J. Mercier[a] and Marie-Pierre Bonnet[b,c]

- R FVIIA: Novoseven
- Etude multicentrique en cours
  - avant vs après lig ou embolisation
- Quand
  - Echec θ conservateur
    - Chirurgical ou embolisation
  - Avant hysterectomie
  - Autres conditions:
    - Hct 30%,Pq 50.000, Fibri >1gr
    - pH > 7.2,Ca++ Nl, T°> 34°C
- Combien
  - 60-90 µg/kg
  - 2e dose 30-60' SN
  - Ne doit pas différer HRT SN

- Acide Tranexamique: Exacyl
- 1 méta-analyse sur 3 ERC
- 1 Recommandation de l'OMS
- Etude « EXADELI »
  - Réduction besoins en produits sanguins
- Etude « WOMAN » en cours
  - 1gr iVL à répéter SN

Effects of tranexamic acid on death, vascular occlusive events, and blood transfusion in trauma patients with significant haemorrhage (CRASH-2): a randomised, placebo-controlled trial

*CRASH-2 trial collaborators**

Summary

Background Tranexamic acid can reduce bleeding in patients undergoing elective surgery. We assessed the effects of early administration of a short course of tranexamic acid on death, vascular occlusive events, and the receipt of blood transfusion in trauma patients.

Methods This randomised controlled trial was undertaken in 274 hospitals in 40 countries. 20 211 adult trauma patients with, or at risk of, significant bleeding were randomly assigned within 8 h of injury to either tranexamic acid (loading dose 1 g over 10 min then infusion of 1 g over 8 h) or matching placebo. Randomisation was balanced by centre, with an allocation sequence based on a block size of eight, generated with a computer random number generator. Both participants and study staff (site investigators and trial coordinating centre staff) were masked to treatment allocation. The primary outcome was death in hospital within 4 weeks of injury, and was described with the following categories: bleeding, vascular occlusion (myocardial infarction, stroke and pulmonary embolism), multiorgan failure, head injury, and other. All analyses were by intention to treat. This study is registered as ISRCTN86750102, Clinicaltrials.gov NCT00375258, and South African Clinical Trial Register DOH-27-0607-1919.

Findings 10 096 patients were allocated to tranexamic acid and 10 115 to placebo, of whom 10 060 and 10 067, respectively, were analysed. All-cause mortality was significantly reduced with tranexamic acid (1463 [14·5%] tranexamic acid group *vs* 1613 [16·0%] placebo group; relative risk 0·91, 95% CI 0·85–0·97; p=0·0035). The risk of death due to bleeding was significantly reduced (489 [4·9%] *vs* 574 [5·7%]; relative risk 0·85, 95% CI 0·76–0·96; p=0·0077).

Interpretation Tranexamic acid safely reduced the risk of death in bleeding trauma patients in this study. On the basis of these results, tranexamic acid should be considered for use in bleeding trauma patients.

THE LANCET

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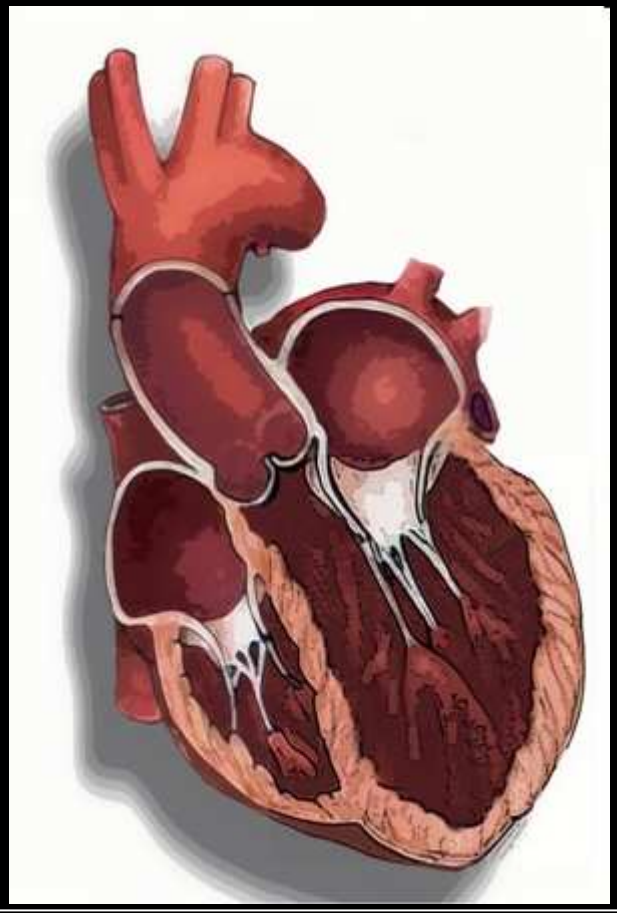
Cardiomyopathie du péripartum



HEART

Prolactin: a new therapeutic target in peripartum cardiomyopathy

Hatice Yamac, Insa Bultmann, Karen Sliwa, et al.

Heart published online July 23, 2010
doi: 10.1136/hrt.2009.179218

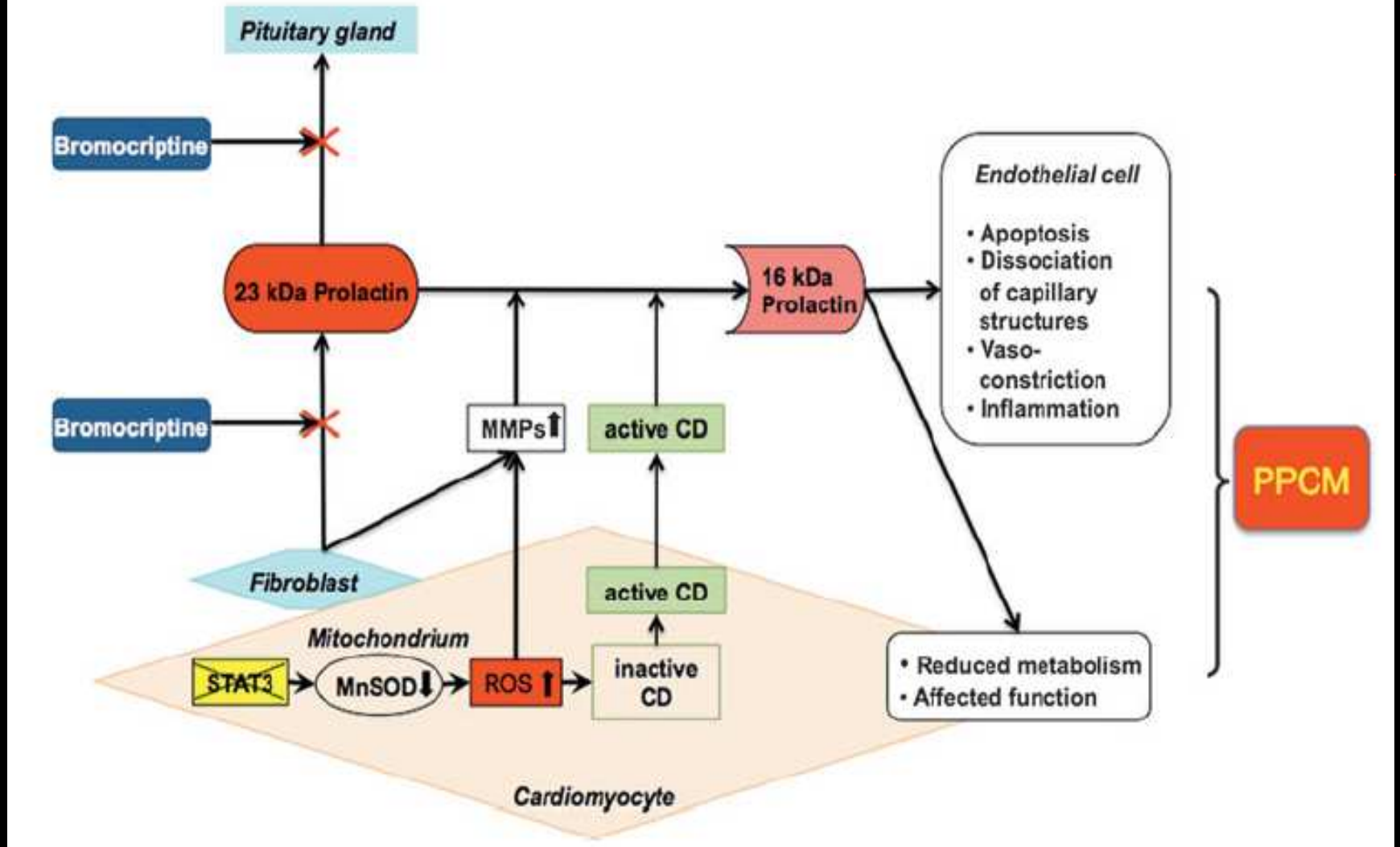
- Incidence
  - Pays occidentaux: 1/2500 – 1/4000
  - Haiti: 1/300
  - Nigeria: 1/100
  - Afrique du Sud: 1/1000
- Diagnostic d'exclusion
  - Dysfonction systolique, FEVG < 45%,
- Pronostic
  - Mortalité: 4-30%
  - Récupération complète: 23-32%
  - Altération progressive: 50%
- Traitement standard
  - ACE Inh
  - β-bloqueurs
  - Diurétiques
  - Vasodilatateurs
  - Pas de θ spécifique de CMPP

- Hypothèse physiopathologique
  - Stress oxydatif
  - Activation d'une protease
  - Clivage de la prolactine
  - Sous-unité 16KDa
    - Propriétés angiostatiques
    - Propriétés apoptotique
    - Impact
      - endothelium,
      - vaisseaux myocardiques
      - fonction cardiomyocytes

Traitement étiologique ?

Bromocriptine↔Prolactine

SFAR


Pituitary gland
Bromocriptine
Bromocriptine
23 kDa Prolactin
16 kDa Prolactin
Endothelial cell
• Apoptosis
• Dissociation of capillary structures
• Vaso-constriction
• Inflammation
MMPs
active CD
PPCM
Fibroblast
active CD
Mitochondrium
STAT3
MnSOD
ROS
inactive CD
• Reduced metabolism
• Affected function
Cardiomyocyte

Evaluation of Bromocriptine in the Treatment of Acute Severe Peripartum Cardiomyopathy

A Proof-of-Concept Pilot Study

Karen Sliwa, MD, PhD; Lori Blauwet, MD; Kemi Tibazarwa, MD; Elena Libhaber, PhD; Jan-Peter Smedema, MD, MMed(Int); Anthony Becker, MD; John McMurray, MD, FESC; Hatice Yamac, MD; Saida Labidi, MSc; Ingrid Struman, PhD; Denise Hilfiker-Kleiner, PhD

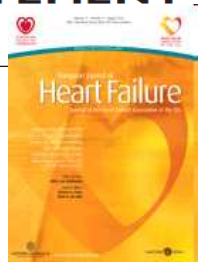
- CMPP: n= 20 (2X10)
- θ standard: furosemide, enalapril, carvedilol
- θ standard + Bromocriptine 8 sem.
  - (5mg/j pdt 2sem et 2.5mg/j pdt 6sem)
- Caractéristiques initiales: idem
- FEVG à 6mois
  - θ Standard: 27% ⇒ 36%
  - θ standard + Brompocriptine: 27% ⇒ 58%
- Mortalité
  - 1/10 vs 4/10
- Mauvaise évolution (décès, NYHA III-IV, FEVG <35%)
  - 1/10 vs 8/10

- Etude multicentrique prospective randomisée double aveugle en cours

(*Circulation*. 2010;121:1465-1473.)

European Journal of Heart Failure (2010) **12**, 767–778
doi:10.1093/eurjhf/hfq120

POSITION STATEMENT



Current state of knowledge on aetiology, diagnosis, management, and therapy of peripartum cardiomyopathy: a position statement from the Heart Failure Association of the European Society of Cardiology Working Group on peripartum cardiomyopathy

Karen Sliwa[1]*, Denise Hilfiker-Kleiner[2], Mark C. Petrie[3], Alexandre Mebazaa[4], Burkert Pieske[5], Eckhart Buchmann[6], Vera Regitz-Zagrosek[7], Maria Schaufelberger[8], Luigi Tavazzi[9], Dirk J. van Veldhuisen[10], Hugh Watkins[11], Ajay J. Shah[12], Petar M. Seferovic[13], Uri Elkayam[14], Sabine Pankuweit[15], Zoltan Papp[16], Frederic Mouquet[17], and John J.V. McMurray[18]

Peripartum cardiomyopathy (PPCM) is a cause of pregnancy-associated heart failure. It typically develops during the last month of, and up to 6 months after, pregnancy in women without known cardiovascular disease. The present position statement offers a state-of-the-art summary of what is known about risk factors for potential pathophysiological mechanisms, clinical presentation of, and diagnosis and management of PPCM. A high index of suspicion is required for the diagnosis, as shortness of breath and ankle swelling are common in the peripartum period. Peripartum cardiomyopathy is a distinct form of cardiomyopathy, associated with a high morbidity and mortality, but also with the possibility of full recovery. Oxidative stress and the generation of a cardiotoxic subfragment of prolactin may play key roles in the pathophysiology of PPCM. In this regard, pharmacological blockade of prolactin offers the possibility of a disease-specific therapy.

Merci