NOUVEAUTÉS EN ANESTHÉSIE ET ANALGÉSIE OBSTÉTRICALE

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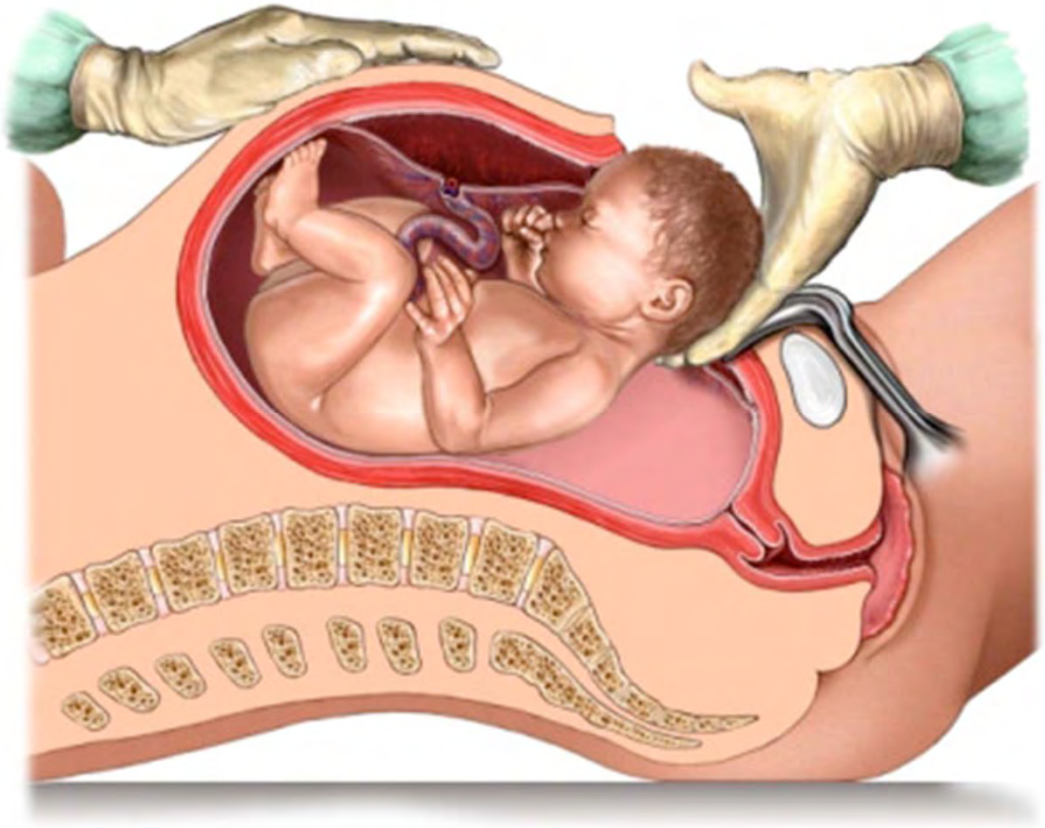
NOUVEAUTÉS: Prise en charge de la césarienne



Césarienne / Rachianesthésie / Prévention hypotension maternelle « Pré-remplissage HEA vs cristalloïde »

Mercier F et al. BJA 2014

- ✓ Essai multicentrique (n=12) randomisé en double aveugle
- ✓ 167 patientes
- ✓ Rachianesthésie standardisée (bupivacaine 0,5% HB 11 mg) et phénylphédrine à la demande selon algorithme
- ✓ **Interventions:**
  - Pré-remplissage par 500ml HEA (Voluven®) et 500ml de RL
  - Versus pré-remplissage par 1000ml de RL
- ✓ Critère de jugement principal: au moins **un épisode de diminution de la PAS <80%** de la base dans l'intervalle rachianesthésie-clampage du cordon

Césarienne / Rachianesthésie / Prévention hypotension maternelle
« Pré-remplissage HEA vs cristalloïde »

Mercier F et al. BJA 2014

Principaux résultats

	HES group		RL group		*P*-value
	n	*n* (%) or mean (SD) or median (range)	*n*	*n* (%) or mean (SD) or median (range)	
Incidence of hypotension, ITT*	82	30 (37%)	85	47 (55%) NNT = 5	0.025
Incidence of hypotension, PP*	68	23 (34%)	72	40 (56%)	0.019
Incidence of symptomatic hypotension†	82	3 (4%)	85	12 (14%)	0.028
SAP<70% baseline	82	8 (10%)	85	15 (18%)	0.14
SAP, minimum recorded ITT (mm Hg)	82	98 (14)	85	94 (14)	0.058
SAP, minimum recorded PP (mm Hg)	68	99 (14)	72	93 (14)	0.015
Duration of hypotension (min)	30	2.0 (0–20)	47	2.0 (1–10)	0.36
HR, minimum recorded (beats min^{-1})	82	62 (10)	85	61 (10)	0.19
Incidence of bradycardia‡	82	9 (11%)	85	11 (13%)	0.70
Atropine use	82	8 (10%)	85	8 (9%)	0.94
Phenylephrine requirements (μg), ITT	82	350 (50–1800)	85	350 (50–1250)	0.26
Phenylephrine requirements (μg), PP	68	350 (50–1800)	72	400 (50–1250)	0.075

Pas de passage transplacentaire HEA
Paramètres néonataux ➔ Pas de différence

Césarienne / Rachianesthésie / Prévention hypotension maternelle
« Co-remplissage HEA vs cristalloïde »

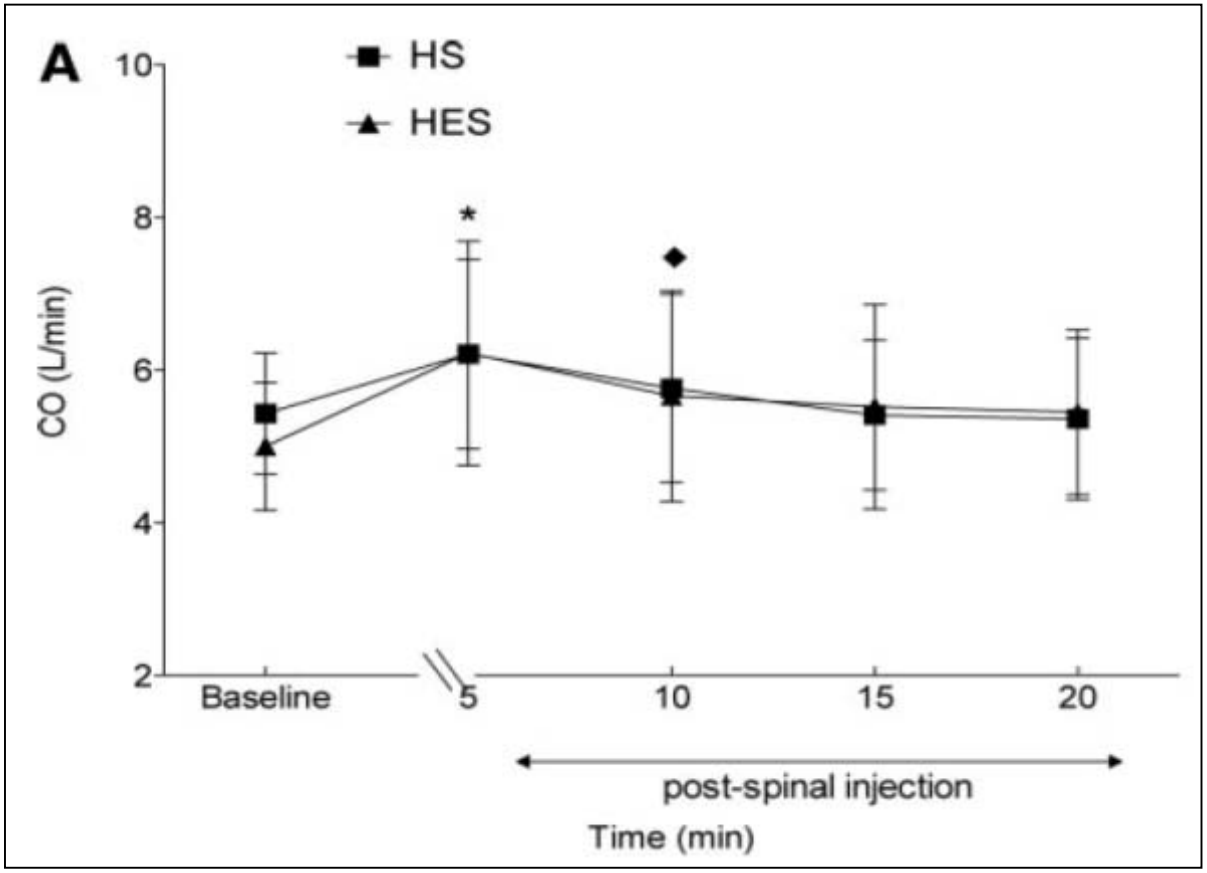
McDonald S et al. Anesth Analg 2011; 113: 803-10

- ✓ **Etude prospective, randomisée, en double aveugle**
- ✓ **Césariennes programmées sous rachi**
  (bupivacaine =12 mg, fenta =15 µg)
- ✓ **Co-remplissage (n = 60):**
  - Groupe HEA = 1000 ml HEA
  - Groupe cristalloide = 1000 ml solution Hartmann
- ✓ **Néosynéphrine** (100µg / min) systématique
- ✓ **HypoTA = PAS < 80% P° base**
- ✓ **Critère de jugement principal:** Variation du DC de 20%

Césarienne / Rachianesthésie / Prévention hypotension maternelle
« Co-remplissage HEA vs cristalloïde »

McDonald S et al. Anesth Analg 2011; 113: 803-10

↑ transitoire du DC avec HEA et cristalloïde mais pas de ≠ entre les 2



Césarienne / Rachianesthésie / Prévention hypotension maternelle

« Co-remplissage HEA vs cristalloïde »

McDonald S et al. Anesth Analg 2011; 113: 803-10

Table 3. Hemodynamic Data and Phenylephrine Requirements from Spinal Injection to Delivery

	HS group (n = 30)	HES group (n = 30)	P value
Total phenylephrine dose: spinal injection to delivery (mg)	2.59 (1.05)	2.21 (0.90)	0.14
≥1 boluses of phenylephrine, n (%)	8 (27%)	3 (10%)	0.18
Hypotension,[a] n (%)	18 (60%)	12 (40%)	0.20
1 episode of hypotension, n (%)	8 (27%)	2 (7%)	0.08
Bradycardia (<50 beats/min), n (%)	6 (20%)	4 (13%)	0.49
Hypertension,[b] n (%)	12 (40%)	9 (30%)	0.64
>1 episode of hypertension, n (%)	6 (20%)	2 (7%)	0.08
Maximal SBP (mm Hg)	147 (15)	144 (16)	0.50
Minimal recorded SBP (mm Hg)	94 (19)	100 (18)	0.23
Spinal injection to delivery interval (min)	42 [35–49]	42 [39–49]	0.82
Block height, dermatome at 20 min	T2 [T3–T2]	T2 [T3–T2]	0.64
Surgical incision to delivery interval (min)	8 [6–12]	8.5 [6–13]	0.7

Césarienne / Rachianesthésie / Prévention hypotension maternelle « Perfusion continue phényléphrine vs bolus »

Siddick-Sayyid et al. Anesth Analg 2014;118:611–8

- ✓ Essai monocentrique randomisé en double aveugle
- ✓ 80 patientes
- ✓ Rachianesthésie (bupivacaine 0,75% HB 12,75 mg) et co-remplissage par RL 15 ml/kg
- ✓ **Interventions:**
  - Perf continue phényléphrine avec algorithme pour maintenir PAS ± 20% baseline et FC> 50/min + bolus phényléphrine si PAS < 80%
  - Versus perf continue sérum phy + bolus phényléphrine si PAS < 80%
- ✓ Critère de jugement principal: **nombre d'interventions de l'anesthésiste pour maintenir la PAS dans ± 20 % de la baseline et traiter une bradycardie**

Césarienne / Rachianesthésie / Prévention hypotension maternelle

« Perfusion continue phényléphrine vs bolus »

Siddick-Sayyid et al. Anesth Analg 2014;118:611–8

Perf continue phényléphrine ➔

- ↓ Interventions anesthésiste
- ↓ Incidence hypoTA et hypoTA sévère
- ↑ Incidence hyperTA
- ↓ Incidence nausées/vomissements

Table 2. Hemodynamic Variables and Vasopressor Requirements

	Group phenylephrine (n = 40)	Group saline (n = 39)	95% confidence interval of the difference	P
Physician interventions	0 (0–6)	3 (0–9)	3 (2 to 4)	< 0.001
Patients where no interventions needed	22 (55)	4 (10)	−45 (−60 to −25)	< 0.0001
Incidence of hypotension	8 (20)	35 (90)	70 (50 to 81)	< 0.001
Incidence of severe hypotension[a]	3 (8)	17 (44)	36 (17 to 52)	0.001
Number of hypotensive episodes	0 (0–3)	3 (0–9)	3 (2 to 4)	< 0.001
Incidence of hypertension	6 (15)	0 (0)	−15 (−29 to −3)	0.03
Number of hypertensive episodes	0 (0–2)	0 (0–0)	0 (0 to 0)	0.01
Incidence of bradycardia	7 (18)	6 (15)	−2 (−19 to 15)	0.8
Number of bradycardia episodes	0 (0–5)	0 (0–4)	0 (0 to 0)	0.79
Phenylephrine infusion pump (μg)	1501 ± 516	0	−1503 (−1667 to −1338)	< 0.001
Phenylephrine cumulative dose (μg)	1533 ± 519	313 ± 214	−1220 (−1398 to −1041)	< 0.001
Number of phenylephrine boluses	0 (0–2)	3 (0–9)	3 (2 to 4)	< 0.001
Receiving atropine	1 (3)	1 (3)	0 (0 to 0)	0.1
Nausea/vomiting	4 (10)	17 (44)	34 (14 to 50)	0.001

Data are presented as number (%), mean ± SD, and median (range).

[a]Systolic blood pressure <80 mm Hg.

Paramètres néonataux ➔Pas de différence

Césarienne / Rachianesthésie / Prévention hypotension maternelle
« Perfusion continue phényléphrine vs bolus »

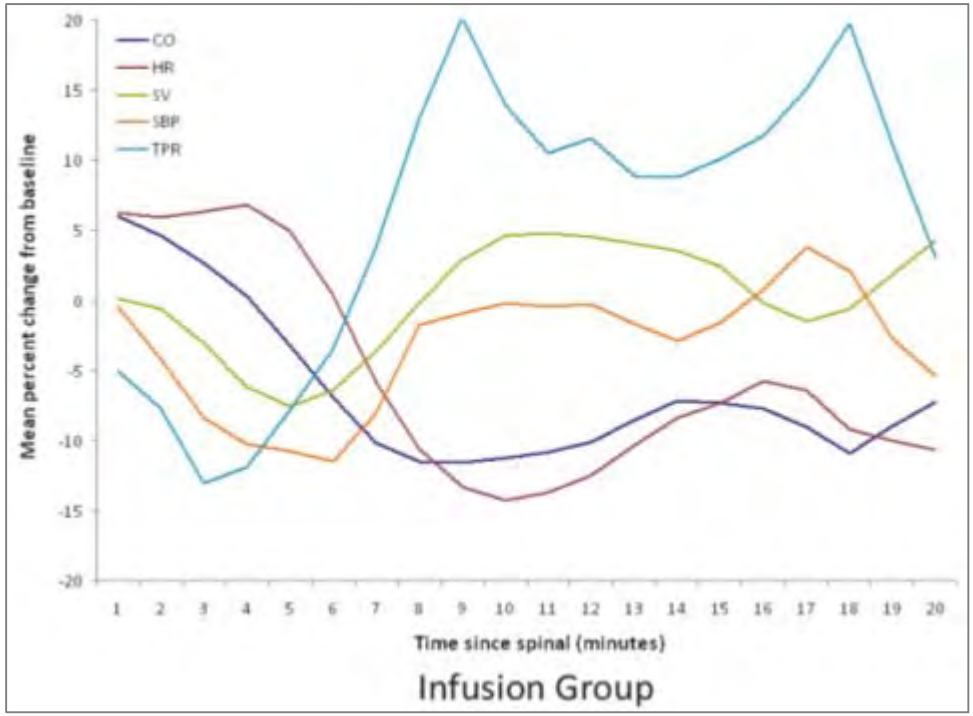
Doherty A et al. Anesth Analg 2012;115:1343-50

- ✓ Essai monocentrique randomisé en double aveugle
- ✓ 60 patientes
- ✓ Rachianesthésie (bupivacaine HB 13,5mg, Fenta 10γ , Morphine 100γ)
- ✓ Pas de co-remplissage
- ✓ **Interventions:**
  - Perf continue phényléphrine 120γ /min avec algorithme pour maintenir PAS = baseline + bolus phényléphrine si PAS < baseline
  - Versus bolus phényléphrine 120γ pour maintenir PAS = baseline
  - 2 groupes : si PAS < 80% ➔ bolus éphédrine
- ✓ Critère de jugement principal: **variation max du DC jusqu'à extraction fœtale.**

Césarienne / Rachianesthésie / Prévention hypotension maternelle

« Perfusion continue phényléphrine vs bolus »

Doherty A et al. Anesth Analg 2012;115:1343-50



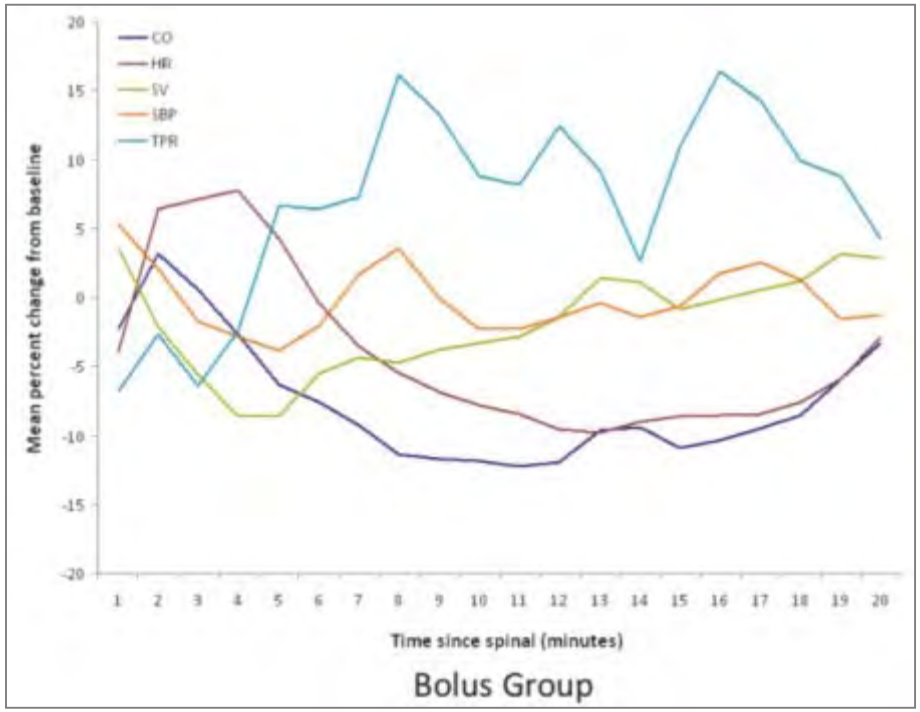


Figure 2. Hemodynamic profiles in the predelivery period. Mean percent change from baseline. CO = cardiac output, HR = heart rate, SV = stroke volume, SBP = systolic blood pressure, TPR = total peripheral resistance.

↓ Max du DC → Pas de différence

Césarienne / Rachianesthésie / Prévention hypotension maternelle
« Perfusion continue phényléphrine vs bolus »

Doherty A et al. Anesth Analg 2012;115:1343-50

Perf continue phényléphrine ➔ Pas de différence sur les critères secondaires
Doses > phényléphrine+++

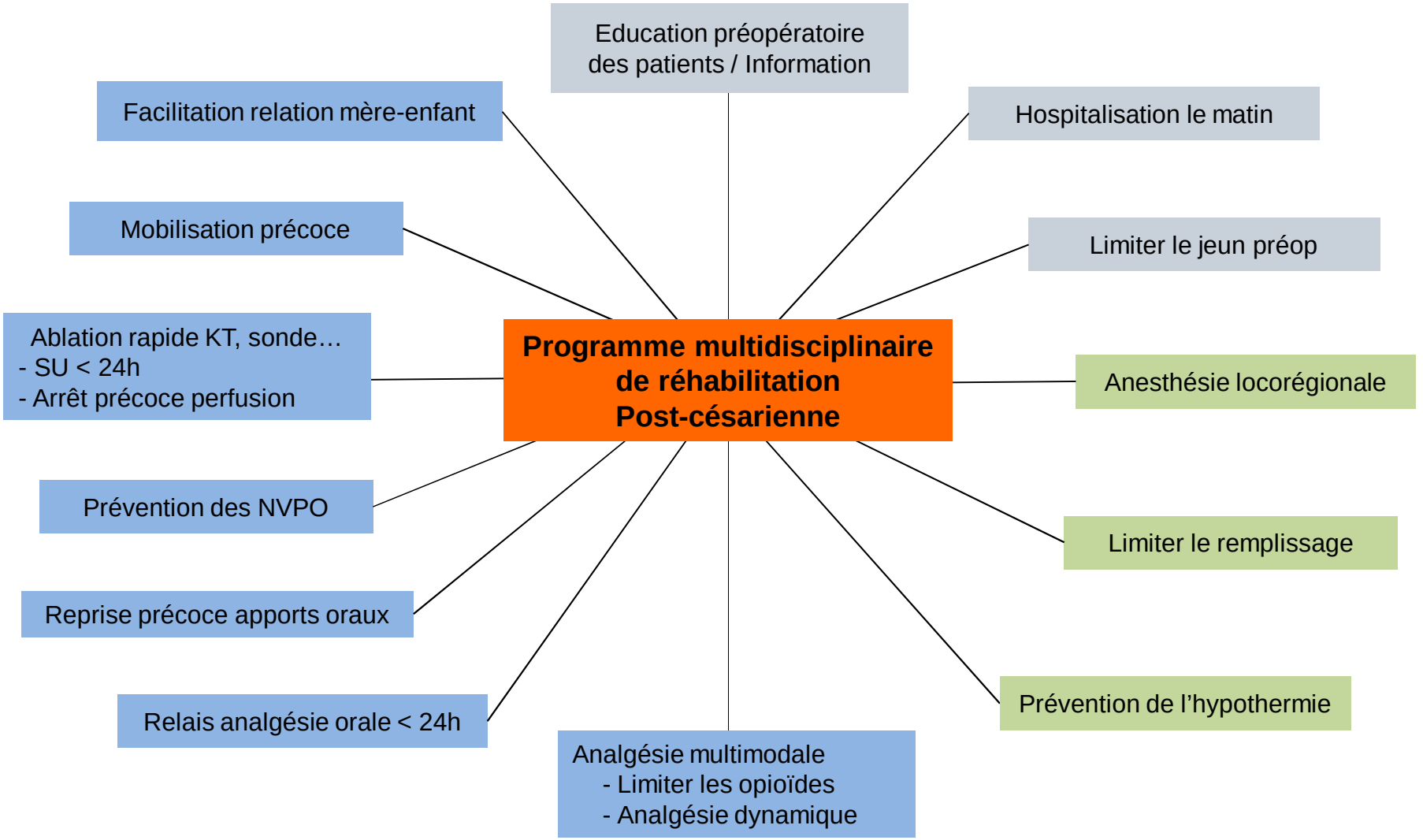
Table 4. Secondary Outcomes

Outcomes	Bolus group n (%)	Infusion group n (%)	Difference between treatment groups (95% CI)	*P*-value
Nausea/vomiting predelivery	11 (36.7)	5 (16.7)	20.0 (–1.8, 41.8)	0.14
Nausea/vomiting postdelivery	0 (0.0)	1 (3.3)	–3.3 (–9.8, 3.1)	1.00
Hypotension predelivery	7 (23.3)	8 (26.7)	–3.3 (–25.2, 18.6)	1.00
Hypotension postdelivery	3 (10.0)	2 (6.7)	3.3 (–10.6, 17.3)	1.00
Hypertension predelivery	12 (40.0)	9 (30.0)	10.0 (–14.0, 34.0)	0.59
Hypertension postdelivery	4 (13.3)	3 (10.0)	3.3 (–12.9, 19.6)	1.00
Bradycardia predelivery	9 (30.0)	11 (36.7)	–6.7 (–30.5, 17.1)	0.79
Bradycardia postdelivery	1 (3.3)	1 (3.3)	0.0 (–9.1, 9.1)	1.00
Received ephedrine	5 (16.7)	7 (23.3)	–6.7 (–26.8, 13.5)	0.75
Received atropine	4 (13.3)	4 (13.3)	0.0 (–17.2, 17.2)	1.00
Induction-delivery time (min), mean (SD)	19.3 (2.8)	19.2 (3.9)	0.1 (–1.7, 1.9)	0.90
Phenylephrine administered (μg), mean (SD)	964.00 (453.93)	1740.00 (612.5)	–776.0 (–496.9, –1055.1)	<0.001

Paramètres néonataux ➔ Pas de différence

Principes de la réhabilitation post-césarienne

Keita H, Ducloy-Bouthors AS. AFAR 2013; 32: 13



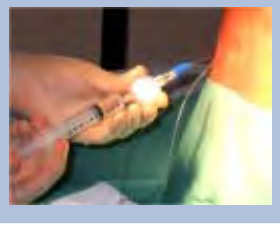
ANALGÉSIE POST-CÉSARIENNE

SFAR. RCP: blocs périmédullaires de l'adulte. 2006

Paracétamol

AINS

MORPHINE EN PÉRIMEDULLAIRE



Morphiniques systémique/PO

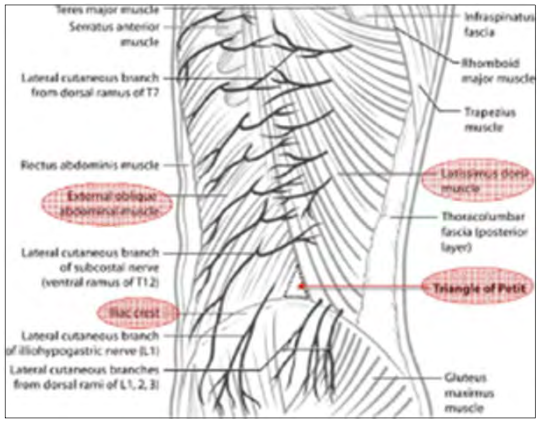
Néfopam

ANALGÉSIE POST-CÉSARIENNE « TAP block vs Morphine IT »

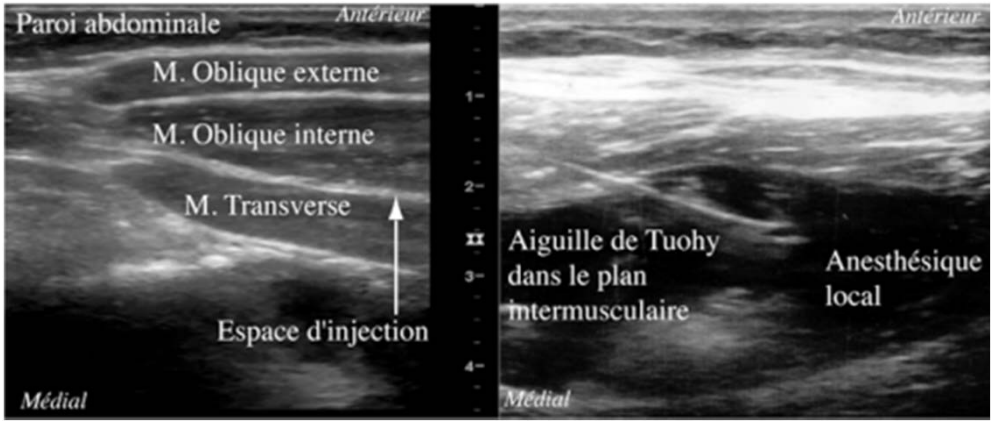
Abdallah FW. BJA 2012; 109: 679-81

Méta-analyse/5 études (n = 312)/2008- 2011/TAP vs pas TAP ± MIT

TAP / Anatomique = 2 études



TAP / écho = 3 études



Pas TAP = 5 études

TAP simulé = 4
TAP sérum phy = 1

MIT = 2 études

ANALGÉSIE POST-CÉSARIENNE « TAP block vs Morphine IT »

Abdallah FW. BJA 2012; 109: 679-81

Consommation de morphine/24h ➔ Pas de différence si MIT

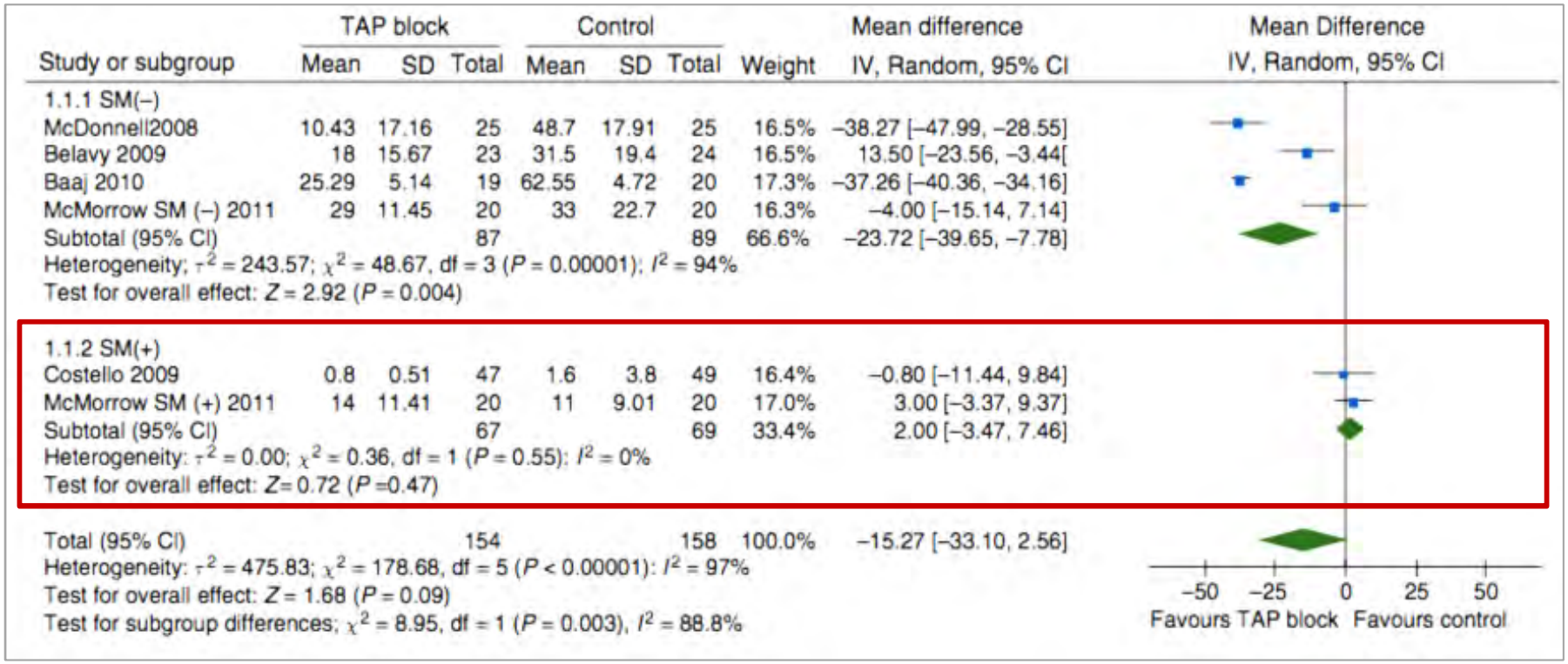
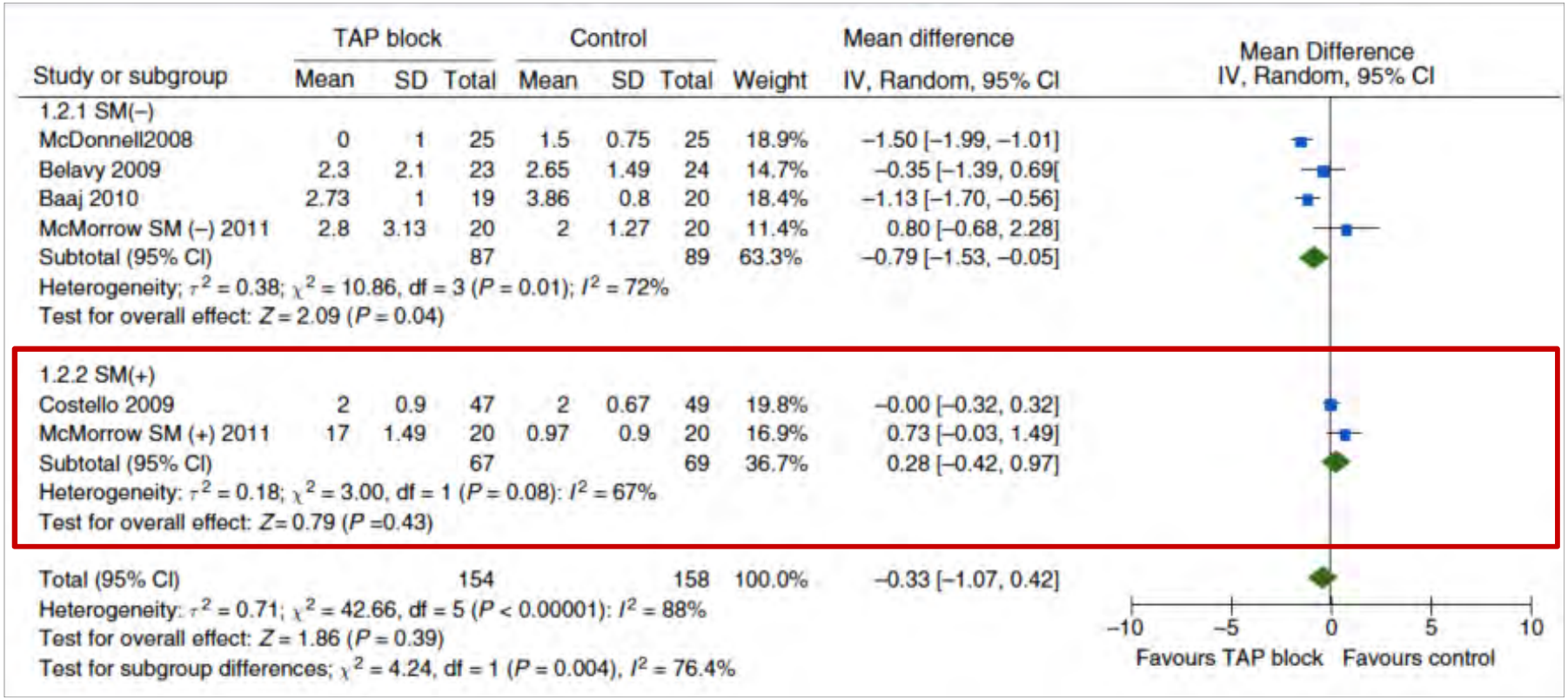


Fig 2 Forest plot showing the 24 h morphine consumption. This sample size, mean, standard deviations (sds), and pooled estimates of mean difference are shown. The 95% CIs are shown as lines for individual studies and as diamonds for pooled estimates. SM, spinal morphine.

ANALGÉSIE POST-CÉSARIENNE « TAP block vs Morphine IT »

Abdallah FW. BJA 2012; 109: 679-81

Douleur au repos sur 24h ➔ Pas de différence si MIT



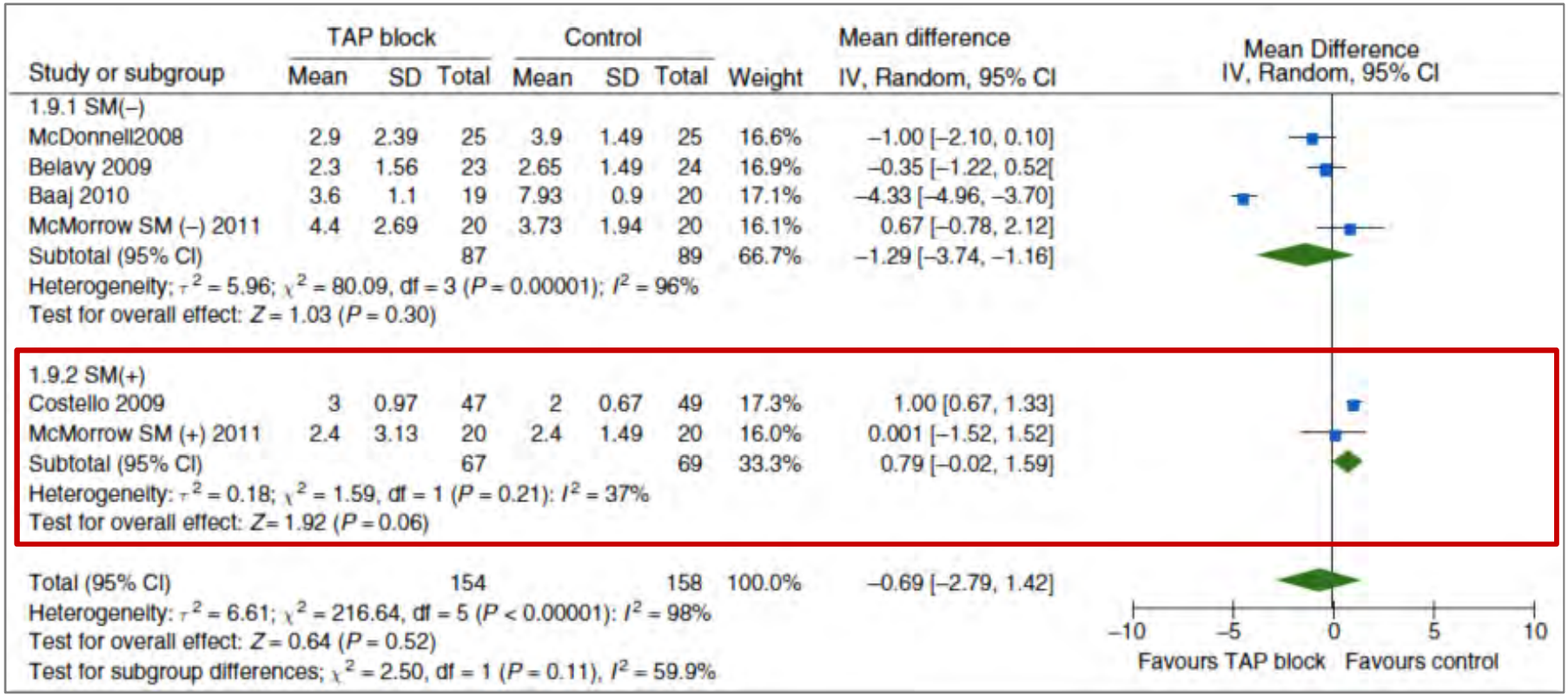
Study or subgroup	TAP block Mean	SD	Total	Control Mean	SD	Total	Weight	Mean difference IV, Random, 95% CI
1.2.1 SM(–)								
McDonnell2008	0	1	25	1.5	0.75	25	18.9%	–1.50 [–1.99, –1.01]
Belavy 2009	2.3	2.1	23	2.65	1.49	24	14.7%	–0.35 [–1.39, 0.69[
Baaj 2010	2.73	1	19	3.86	0.8	20	18.4%	–1.13 [–1.70, –0.56]
McMorrow SM (–) 2011	2.8	3.13	20	2	1.27	20	11.4%	0.80 [–0.68, 2.28]
Subtotal (95% CI)			87			89	63.3%	–0.79 [–1.53, –0.05]
Heterogeneity: $\tau^2 = 0.38$; $\chi^2 = 10.86$, df = 3 ($P = 0.01$); $I^2 = 72\%$								
Test for overall effect: $Z = 2.09$ ($P = 0.04$)								
1.2.2 SM(+)								
Costello 2009	2	0.9	47	2	0.67	49	19.8%	–0.00 [–0.32, 0.32]
McMorrow SM (+) 2011	17	1.49	20	0.97	0.9	20	16.9%	0.73 [–0.03, 1.49]
Subtotal (95% CI)			67			69	36.7%	0.28 [–0.42, 0.97]
Heterogeneity: $\tau^2 = 0.18$; $\chi^2 = 3.00$, df = 1 ($P = 0.08$); $I^2 = 67\%$								
Test for overall effect: $Z = 0.79$ ($P = 0.43$)								
Total (95% CI)			154			158	100.0%	–0.33 [–1.07, 0.42]
Heterogeneity: $\tau^2 = 0.71$; $\chi^2 = 42.66$, df = 5 ($P < 0.00001$); $I^2 = 88\%$								
Test for overall effect: $Z = 1.86$ ($P = 0.39$)								
Test for subgroup differences; $\chi^2 = 4.24$, df = 1 ($P = 0.004$), $I^2 = 76.4\%$								

Fig 3 Forest plot showing the 24 h rest VAS pain scores. This sample size, mean, standard deviations (sds), and pooled estimates of mean difference are shown. The 95% CIs are shown as lines for individual studies and as diamonds for pooled estimates. SM, spinal morphine.

ANALGÉSIE POST-CÉSARIENNE « TAP block vs Morphine IT »

Abdallah FW. BJA 2012; 109: 679-81

Douleur à la mobilisation sur 24h ➔ Pas de différence

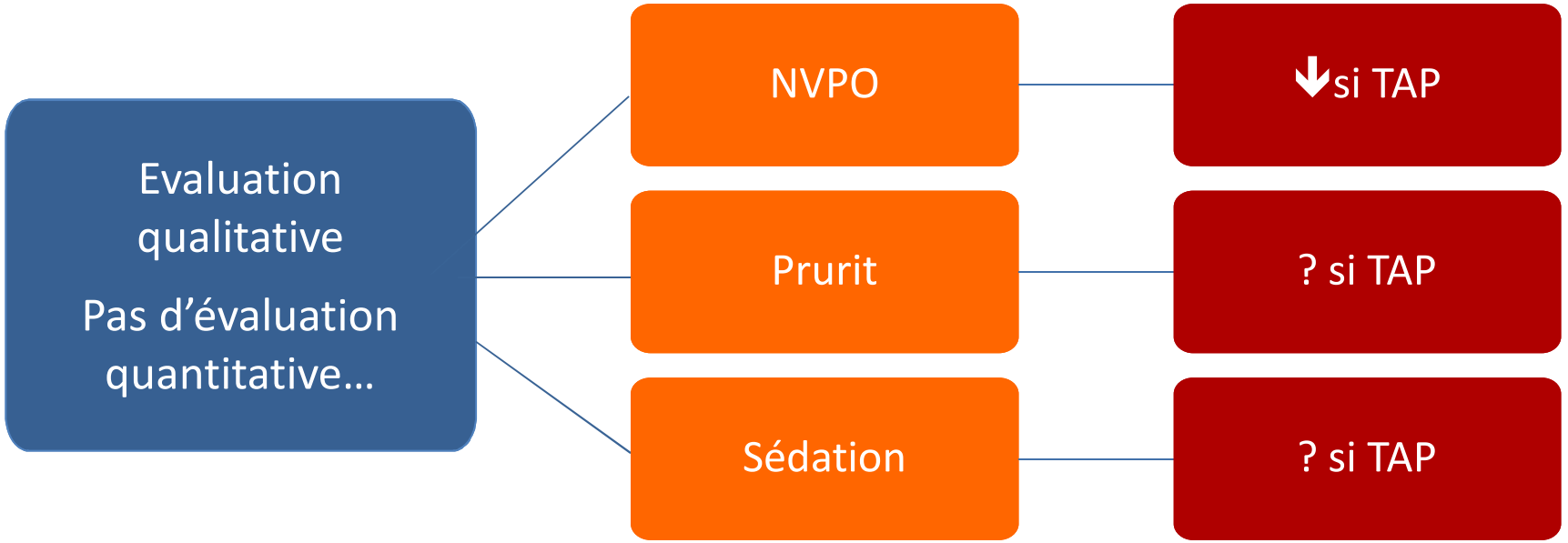


Study or subgroup	TAP block Mean	SD	Total	Control Mean	SD	Total	Weight	Mean difference IV, Random, 95% CI
1.9.1 SM(–)								
McDonnell2008	2.9	2.39	25	3.9	1.49	25	16.6%	–1.00 [–2.10, 0.10]
Belavy 2009	2.3	1.56	23	2.65	1.49	24	16.9%	–0.35 [–1.22, 0.52[
Baaj 2010	3.6	1.1	19	7.93	0.9	20	17.1%	–4.33 [–4.96, –3.70]
McMorrow SM (–) 2011	4.4	2.69	20	3.73	1.94	20	16.1%	0.67 [–0.78, 2.12]
Subtotal (95% CI)			87			89	66.7%	–1.29 [–3.74, –1.16]
Heterogeneity: $\tau^2 = 5.96$; $\chi^2 = 80.09$, df = 3 ($P = 0.00001$); $I^2 = 96\%$								
Test for overall effect: $Z = 1.03$ ($P = 0.30$)								
1.9.2 SM(+)								
Costello 2009	3	0.97	47	2	0.67	49	17.3%	1.00 [0.67, 1.33]
McMorrow SM (+) 2011	2.4	3.13	20	2.4	1.49	20	16.0%	0.001 [–1.52, 1.52]
Subtotal (95% CI)			67			69	33.3%	0.79 [–0.02, 1.59]
Heterogeneity: $\tau^2 = 0.18$; $\chi^2 = 1.59$, df = 1 ($P = 0.21$); $I^2 = 37\%$								
Test for overall effect: $Z = 1.92$ ($P = 0.06$)								
Total (95% CI)			154			158	100.0%	–0.69 [–2.79, 1.42]
Heterogeneity: $\tau^2 = 6.61$; $\chi^2 = 216.64$, df = 5 ($P < 0.00001$); $I^2 = 98\%$								
Test for overall effect: $Z = 0.64$ ($P = 0.52$)								
Test for subgroup differences; $\chi^2 = 2.50$, df = 1 ($P = 0.11$), $I^2 = 59.9\%$								

Fig 4 Forest plot showing the 24 h rest VAS pain scores. This sample size, mean, standard deviations (sds), and pooled estimates of mean difference are shown. The 95% CIs are shown as lines for individual studies and as diamonds for pooled estimates. SM, spinal morphine.

ANALGÉSIE POST-CÉSARIENNE « TAP block vs Morphine IT »

Abdallah FW. BJA 2012; 109: 679-81



MIT ➔ Prévention NVPO (Ondansétron/Dropéridol/Dexaméthasone)

➔ Prévention prurit (Ondansétron/Dropéridol)

ANALGÉSIE POST-CÉSARIENNE « TAP block vs Morphine IT »

Mirza F, Carvalho B. CJA 2013

TAP de secours après échec analgésie MIT

	Age (ans)	IMC (Kg.m-2)	Parité	EVS avant	EVS après	Délai réduction EVS (min)	Durée analgésie (h)
CAS 1	31	45	2	9	2	20	12,3
CAS 2	34	31	1	10	3	18	10,3
CAS 3	39	20	1	9	2	27	19,9

Indication: douleurs pariétales lancinantes persistantes

Fréquence: 5- 10% des patientes

ANALGÉSIE POST-CÉSARIENNE « Infiltration continue vs Morphine IT »

Kainu JP et al. IJOA 2012

Morphine IT ➔ 🡻 Consommation oxycodone à H24

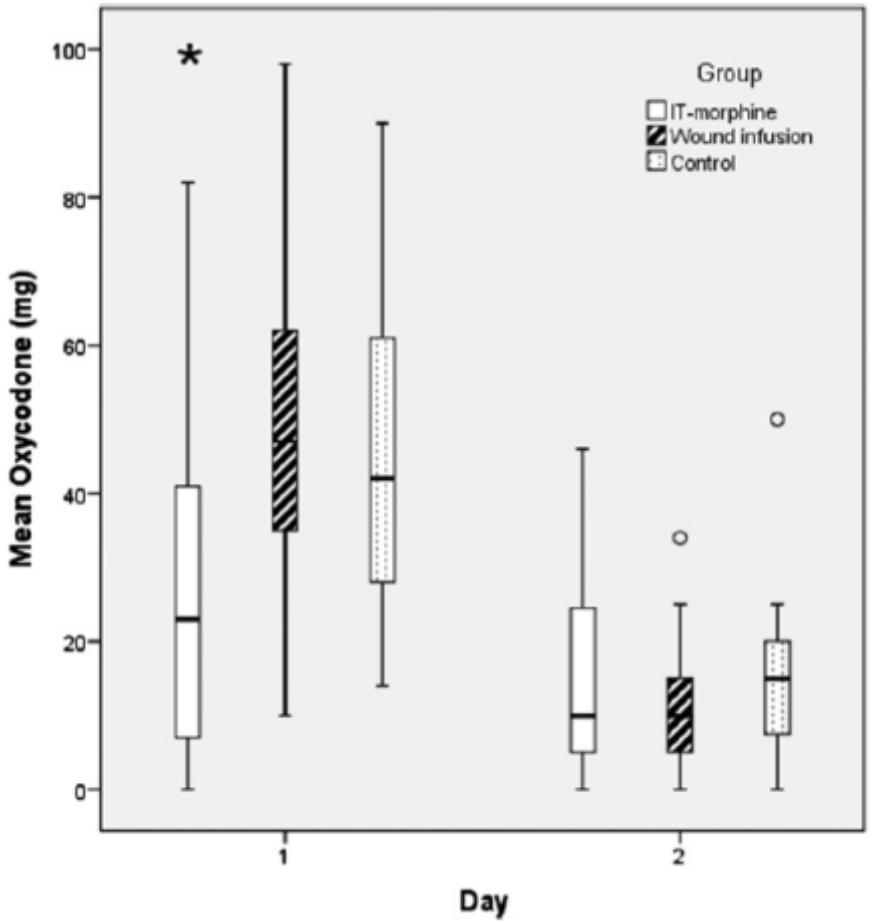


Fig. 1 Oxycodone consumption (mean, 25 and 75 percentiles and range) on day 1 and 2. Outliers are marked with s. *On day 1 there was a significant difference between the intrathecal morphine and control group (P = 0.021) and between the intrathecal morphine and wound infusion group (P = 0.007).

ANALGÉSIE POST-CÉSARIENNE « Infiltration continue vs Morphine IT »

Kainu JP et al. IJOA 2012

Morphine IT ➔ 🡻 Scores douleur à H24

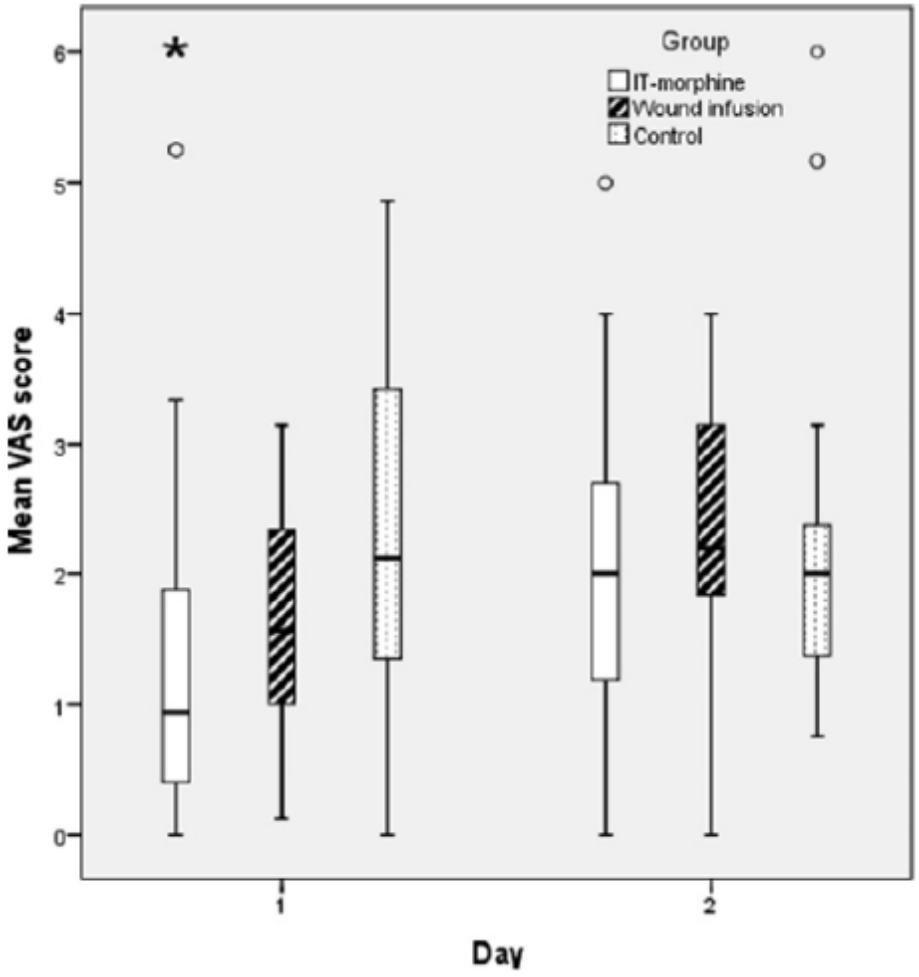
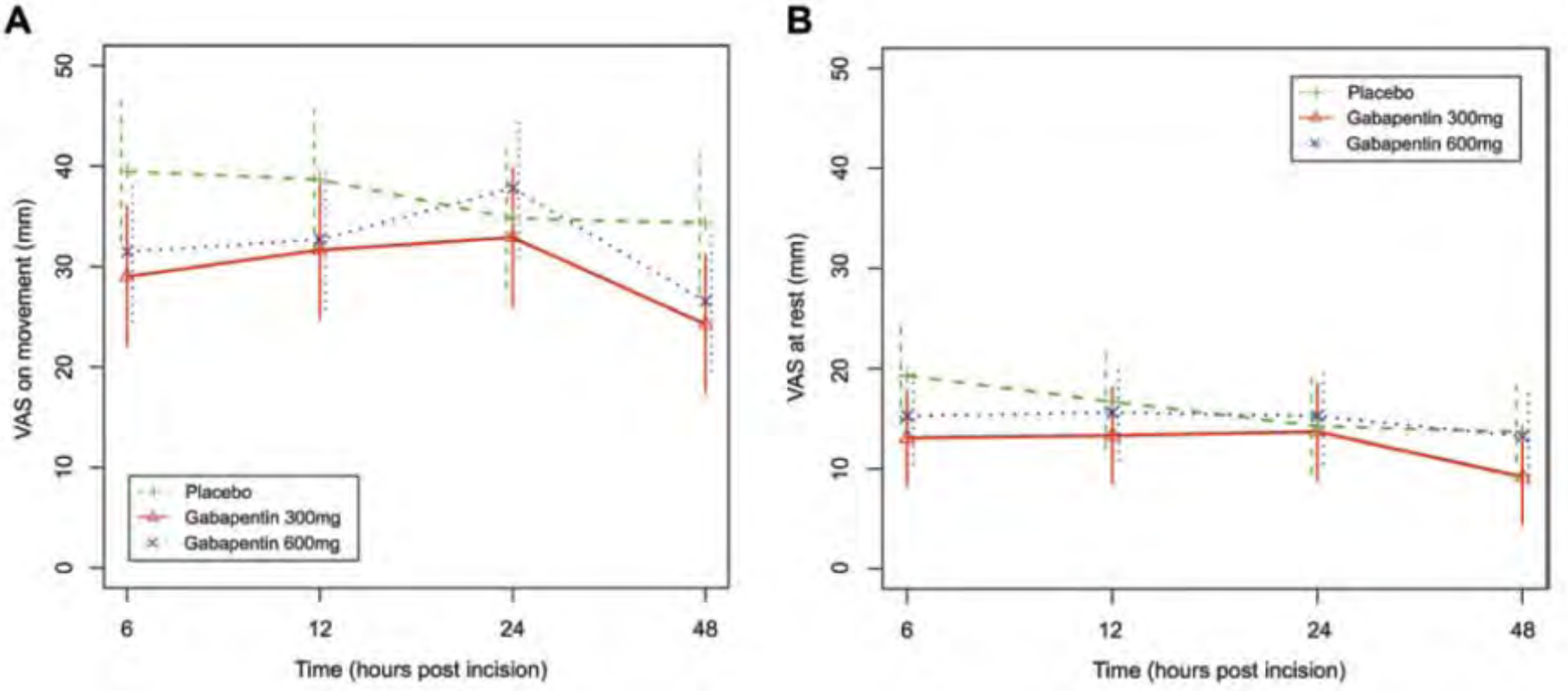


Fig. 2 Visual analogue scale (0–10) pain scores (median, 25 and 75 percentiles and range) on day 1 and 2. Outliers are marked with s. *On day 1 there was a significant difference between the intrathecal morphine and control groups (P = 0.021).

ANALGÉSIE POST-CÉSARIENNE « Gabapentine »

Short J et al. Anesth Analg 2012; 115: 1336-42

Gabapentine 300 / 600 mg ➔ Pas de réduction des scores de douleur



ANALGÉSIE POST-CÉSARIENNE « Gabapentine »

Short J et al. Anesth Analg 2012; 115: 1336-42

Gabapentine 300 / 600 mg ➔ Pas de réduction recours à la morphine ou effets 2d

Table 2. Supplemental Postoperative Morphine Consumption

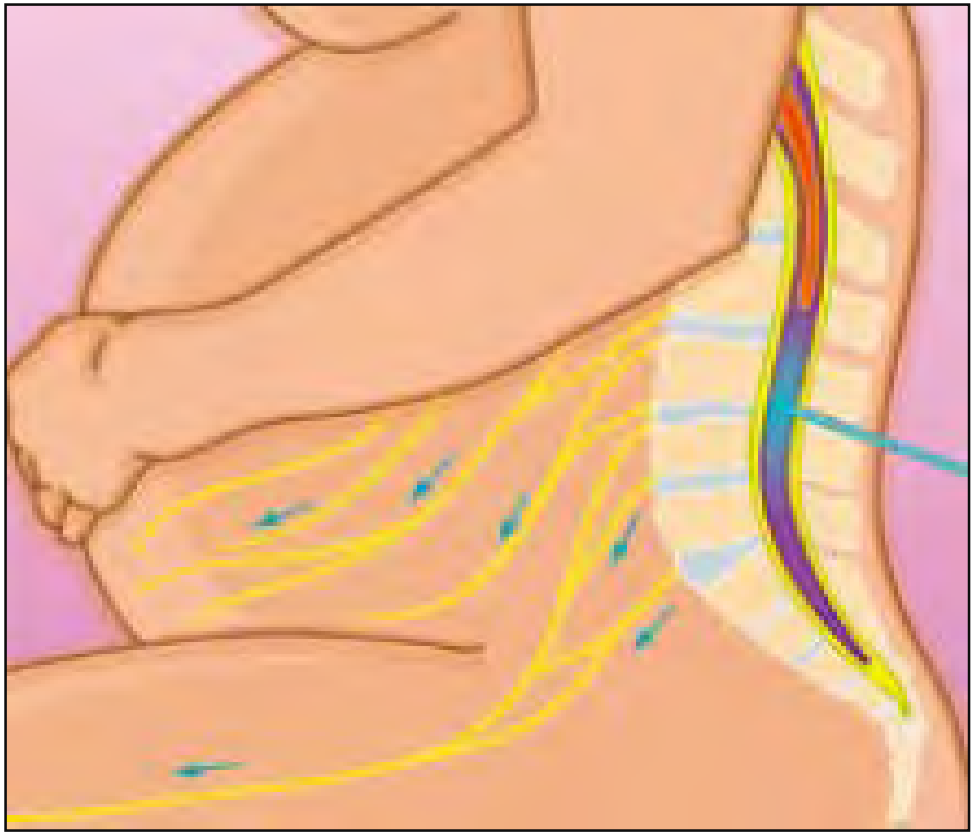
	Gabapentin 600 mg (n = 42)	Gabapentin 300 mg (n = 42)	Placebo (n = 42)	*P* value
Women requiring supplemental parenteral morphine in first 24 h, n (%)	14 (33)	8 (19)	16 (38)	0.14
Morphine dose in first 24 h (mg)	6.7 (4.7, 8.8)	5.7 (1.3, 10.2)	7.9 (5.9, 9.9)	0.46
Women requiring supplemental oral morphine in 24–48 h, n (%)	17 (41)	13 (31)	17 (41)	0.58
Morphine dose at 24–48 h (mg)	13.5 (9.5, 17.6)	11.5 (9.3, 13.8)	16.5 (12.0, 21.0)	0.18

Data are mean (95% CI) or n (%).

Table 3. Incidence of Maternal Adverse Reactions in the First 48 Hours Postoperatively

Reaction	Gabapentin 600 mg (n = 42)	Gabapentin 300 mg (n = 42)	Placebo (n = 42)	*P* value
Nausea [n (%)]	19 (45.2)	18 (42.9)	19 (45.2)	0.99
Severe nausea [n (%)]	6 (14.3)	1 (2.4)	2 (4.8)	0.15
Vomiting [n (%)]	7 (16.7)	10 (23.8)	10 (23.8)	0.68
Severe vomiting [n (%)]	2 (4.8)	1 (2.4)	2 (4.8)	0.99
Sedation [n (%)]	23 (54.8)	24 (57.1)	24 (57.1)	0.82
Severe sedation [n (%)]	2 (4.8)	3 (7.1)	1 (2.4)	0.87
Pruritus [n (%)]	33 (78.6)	36 (85.7)	32 (76.2)	0.60
Severe pruritus [n (%)]	5 (11.9)	5 (11.9)	8 (19.1)	0.69

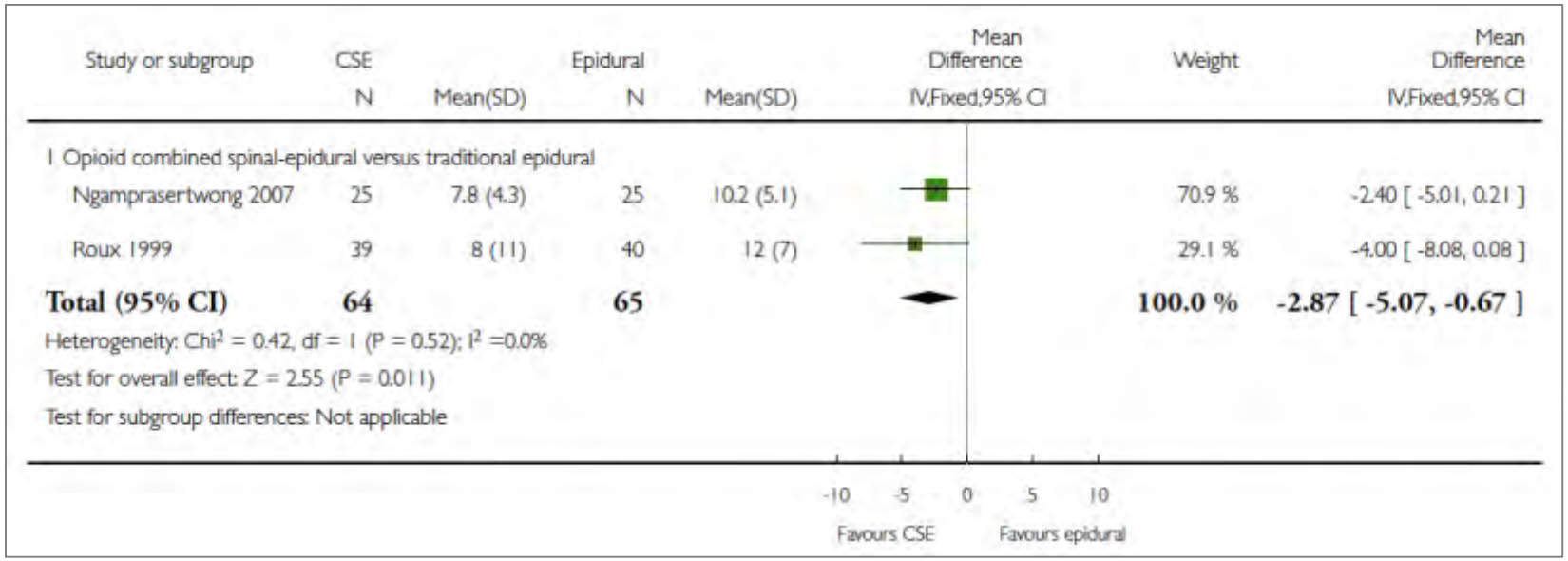
NOUVEAUTÉS: Analgésie obstétricale



ANALGÉSIE OBSTÉTRICALE « PRC vs APD low dose »

Simmons SW . Cochrane 2012

Réduction du délai d'analgésie



PAS DE DIFFERENCE POUR:

- Satisfaction maternelle, taux de césarienne, complications (hypoTA, brèches, lésions nerveuses, complications néonatales…)
- A noter, une augmentation de la fréquence du prurit avec PRC

ANALGÉSIE OBSTÉTRICALE « PRC vs APD »

Heesen M et al. Anaesthesia 2014; 69: 64-71

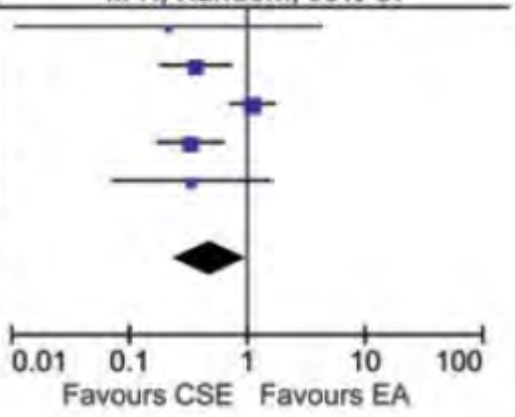
Moins de latéralisation mais…

(b) Unilateral block

Study or Subgroup	CSE Events	CSE Total	EA Events	EA Total	Weight	Risk ratio M-H, Random, 95% CI
Price et al. [8]	0	45	2	48	4.8%	0.21 [0.01, 4.32]
Vernis et al. [10]	8	54	24	59	25.7%	0.36 [0.18, 0.74]
Thomas et al. [11]	27	107	28	123	30.2%	1.11 [0.70, 1.76]
Cappiello et al. [13]	8	39	25	40	26.5%	0.33 [0.17, 0.64]
Pascual-Ramirez et al[15]	2	71	6	71	12.9%	0.33 [0.07, 1.60]
Total (95% CI)		**316**		**341**	**100.0%**	**0.48 [0.24, 0.97]**
Total events	45		85			

Heterogeneity: $Tau^2 = 0.38$; $Chi^2 = 12.96$, df = 4 (P = 0.01); $I^2 = 69\%$

Test for overall effect: Z = 2.04 (P = 0.04)



PAS DE DIFFERENCE POUR:

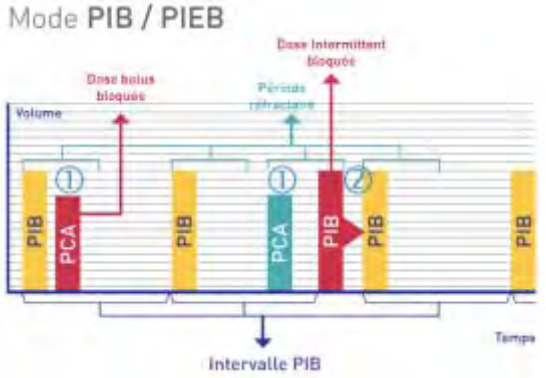
- Nécessiter de repositionner le KT, analgésie de secours, brèches, vasculaires

ANALGÉSIE OBSTÉTRICALE « PIEB vs APD »

Georges RB et al. Anesth Analg 2013; 116: 133-44

✓ **Méta-analyse PIEB vs APD (Continue ou PCEA)**

- Etudes randomisées, contrôlées, 2004 – 2011
- 9 études:
  - PIEB, n = 350
  - Primi et multipares



✓ **Principaux résultats:**

- Réduction consommation AL (-1,2 mg/h; 95%CI: -2,2 à 0,3)
- Amélioration satisfaction maternelle (7/10; 95%CI 6,2 à 7,8)
- Pas de différence: besoin analgésie secours, taux de césarienne, durée W

COMPLICATIONS ANESTHÉSIE-ANALGÉSIE OBSTÉTRICALE

ANALGÉSIE OBSTÉTRICALE « Brèche : rachi continue vs repose APD »

Russel IF et al. IJOA 2012

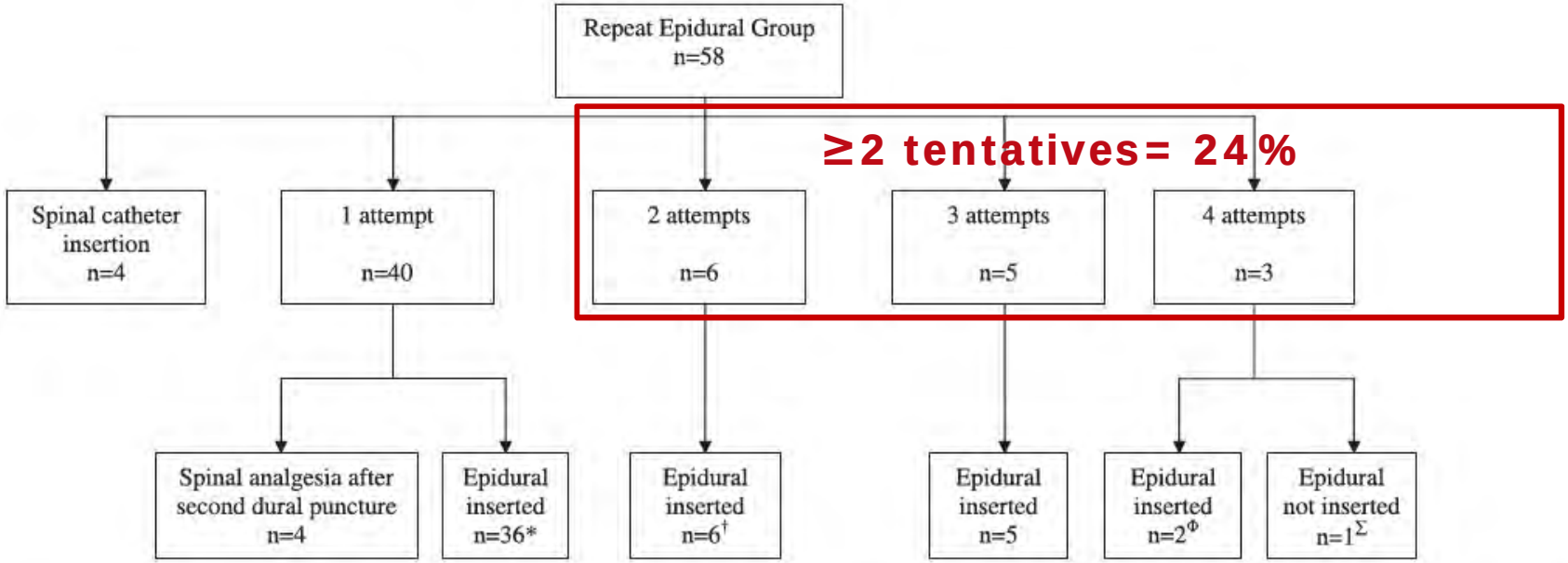


Fig. 2 Complications associated with replacing the epidural catheter after accidental dural puncture in the 58 women assigned to repeat epidural insertion. Further details are available in the Appendix. *Intrathecal catheter left in situ while epidural repeated, repeat epidurals ineffective so spinal analgesia via first catheter ($n = 2$); †Bloody tap on two occasions with subsequent high block ($n = 1$); ΦTwo further ADPs and one bloody tap ($n = 1$); ΣAttempted combined spinal-epidural for subsequent caesarean delivery (spinal component unsuccessful).

ANALGÉSIE OBSTÉTRICALE « Brèche : rachi continue vs repose APD »

Russel IF et al. IJOA 2012

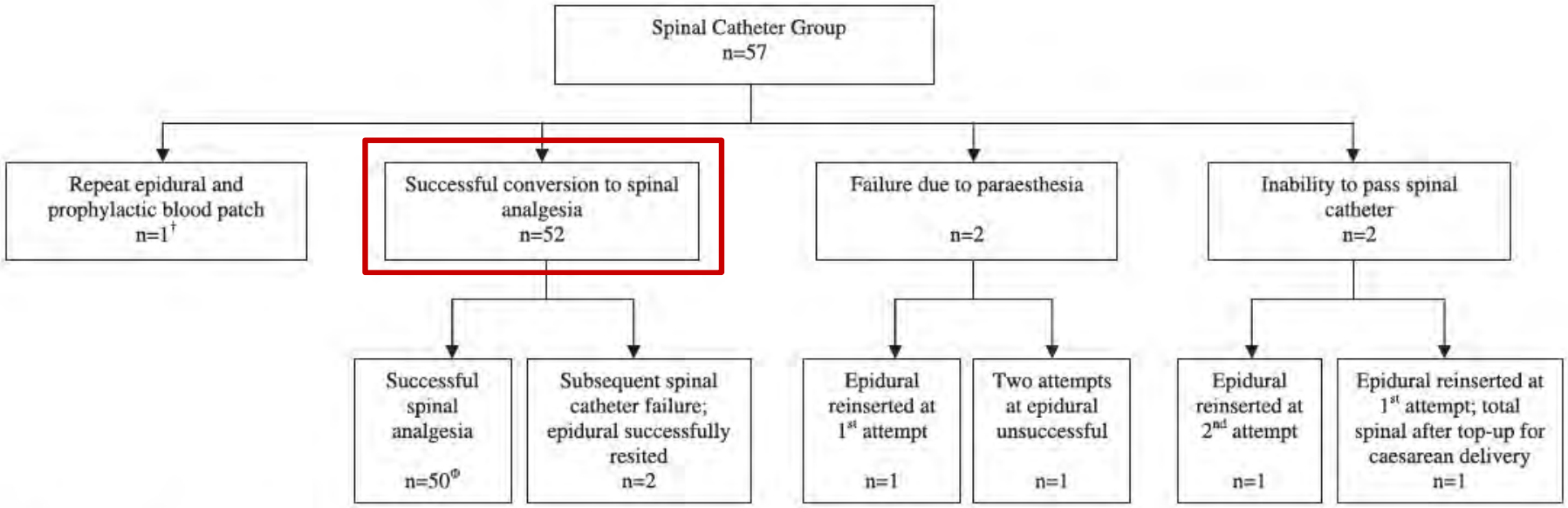


Fig. 3 Complications associated with spinal catheter placement after accidental dural puncture in the 57 women assigned to the spinal analgesia group. Further details are available in the Appendix. †Locum Registrar ignored protocol. ΦConsultant anaesthetist advised general anaesthesia for caesarean delivery.

ANALGÉSIE OBSTÉTRICALE « Brèche : rachi continue vs repose APD »

Russel IF et al. IJOA 2012

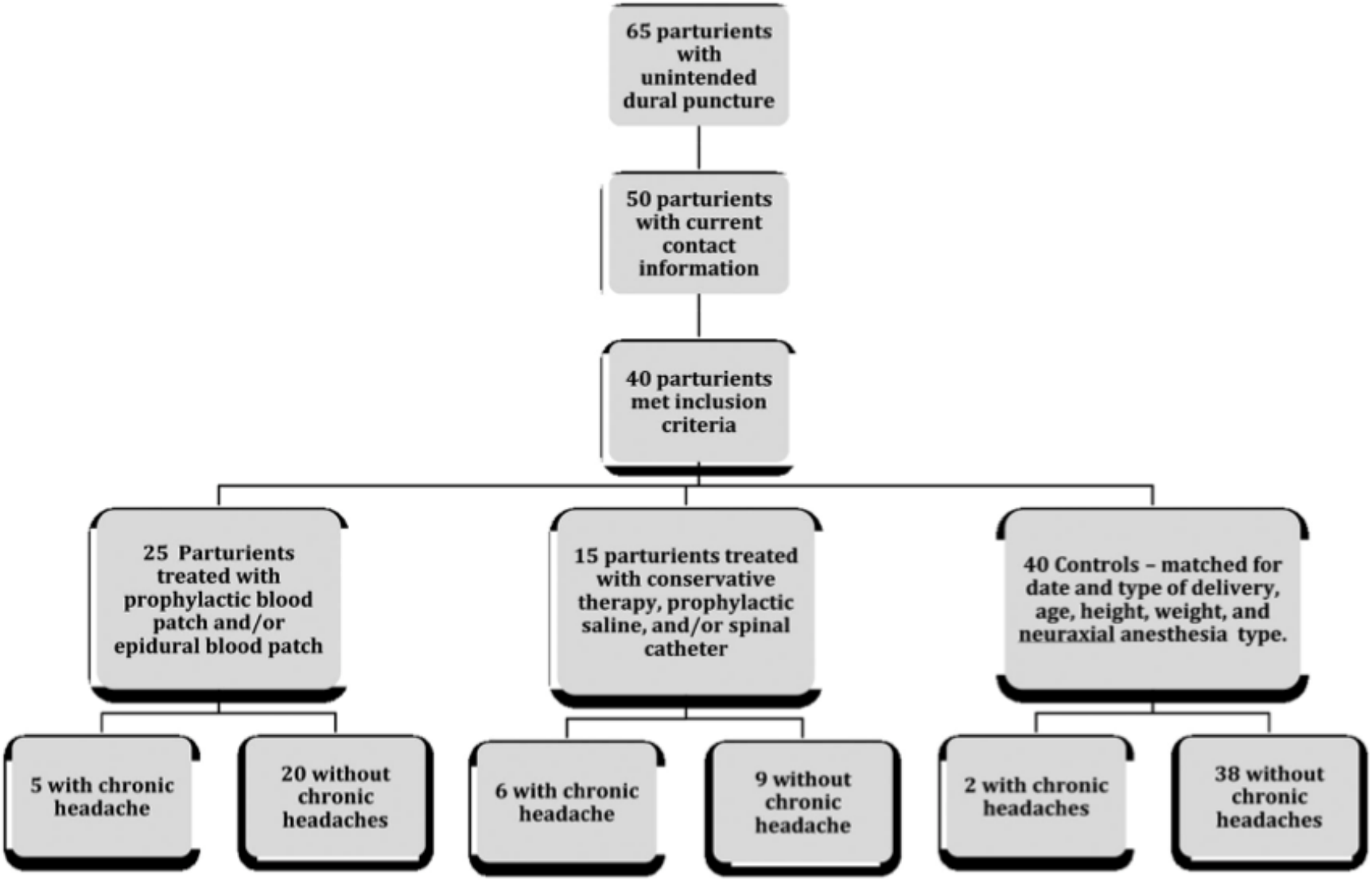
Table 2 Analysis of factors thought to affect postdural puncture headache and epidural blood patch rates

	Postdural puncture headache	Epidural blood patch
Anaesthetic experience	0.043	0.006
Epidural needle size (16- vs. 18-gauge)	0.005	0.012
Spontaneous vaginal vs. caesarean delivery	0.015	0.002
Instrumental vaginal vs. caesarean delivery	0.162	0.214
Spontaneous vaginal vs. instrumental delivery	0.352	0.081
Recognition of dural puncture (needle vs. catheter)	0.109	0.138
Position (sitting vs. lateral)	0.581	0.653
Loss-of-resistance (air vs. fluid)	0.696	0.344
Neuraxial opioids (used vs. not used)	0.396	0.231
Repeat epidural/spinal catheter	0.541	0.509
Postpartum spinal catheter duration	0.392	0.782

Data are *P* values and are calculated from the protocol compliant group.

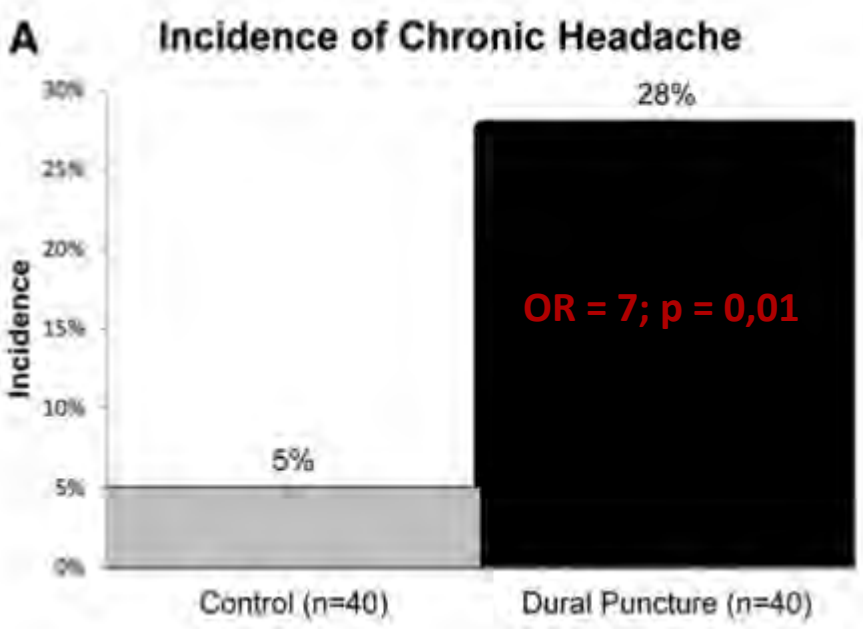
ANALGÉSIE OBSTÉTRICALE « Brèche : céphalées chroniques »

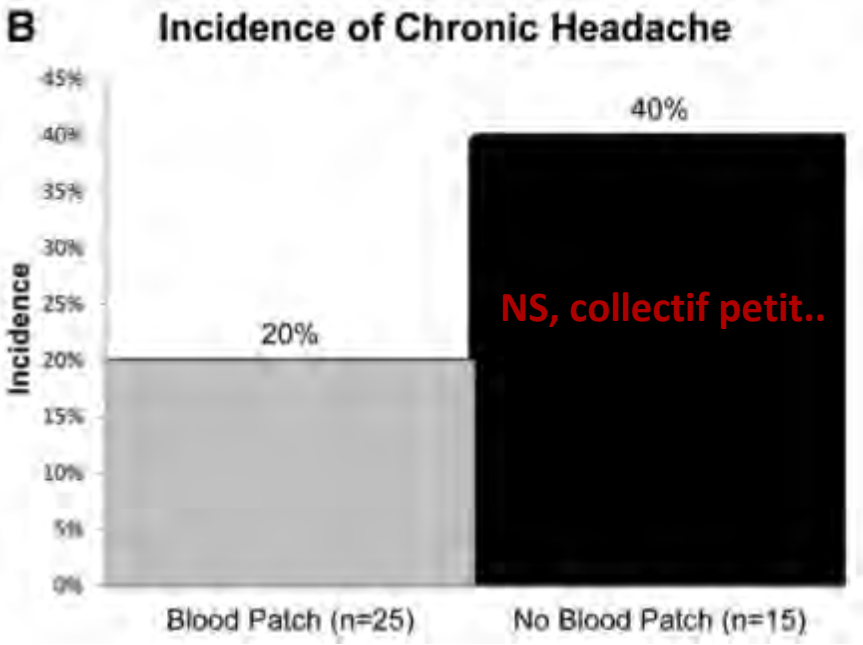
Webb CA et al. Anesth Analg 2012



ANALGÉSIE OBSTÉTRICALE « Brèche : céphalées chroniques »

Webb CA et al. Anesth Analg 2012

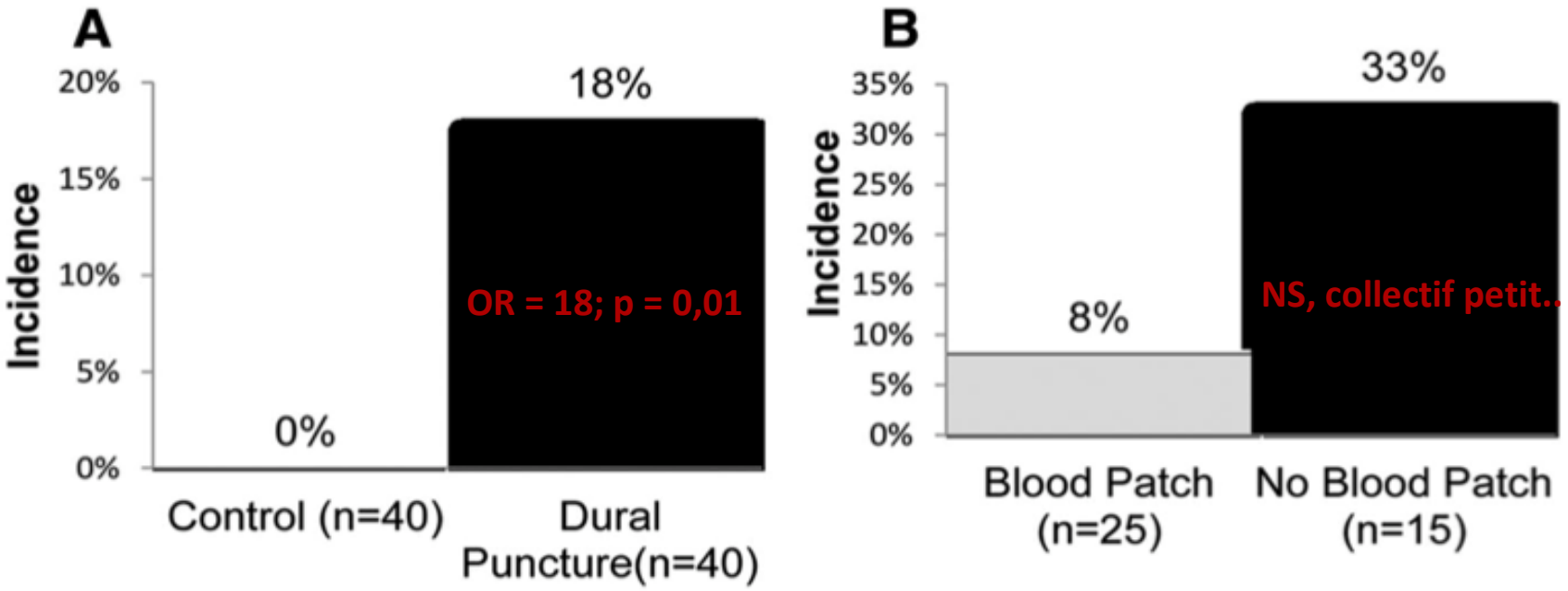




ANALGÉSIE OBSTÉTRICALE « Brèche : céphalées chroniques »

Webb CA et al. Anesth Analg 2012

Disability Headache



COMPLICATIONS GRAVES ANESTHÉSIE-ANALGÉSIE OBSTÉTRICALE

D'Angelo R Anesthesiology 2014; 120: 1505-12

- ✓ Déclaration volontaire complications graves associées à l'accouchement et imputabilité à l'anesthésie par revue de dossiers
- ✓ 30 hôpitaux US sur 5 ans
- ✓ 304,495 accouchements et 157 complications graves
  = 5.1/10,000 (4.4–6.0) ➔ 85 liées à l'anesthésie (54%)

COMPLICATIONS GRAVES ANESTHÉSIE-ANALGÉSIE OBSTÉTRICALE

D'Angelo R Anesthesiology 2014; 120: 1505-12

Table 4. Incidence of Serious Complications*

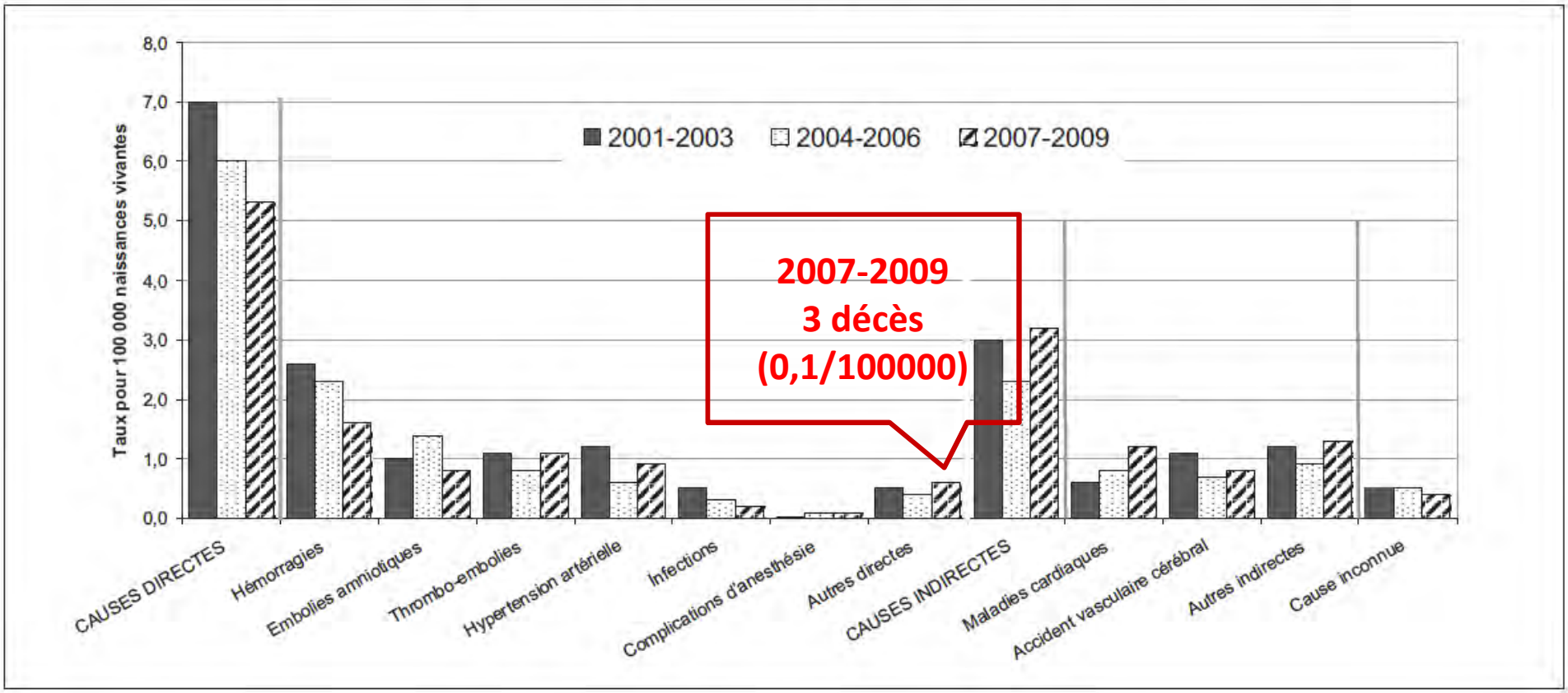
Serious Complication	Totals	Incidence	95% CI	Anesthesia Related	Incidence	95% CI
Maternal death	30	1:10,250	1:7,180, 1:15,192	0		
Cardiac arrest	43†	1:7,151	1:5,319, 1:9,615	2	1:128,398	1:35,544, 1:1,060,218
Myocardial infarction	2	1:153,748	1:42,562, 1:1,269,541	2	1:128,398	1:35,544, 1:1,060,218
Epidural abscess/meningitis	4			4	1:62,866	1:25,074, 1:235,620
Epidural hematoma	1			1	1:251,463	1:46,090, 1:10,142,861
Serious neurologic injury	27	1:11,389	1:7,828, 1:17,281	7	1:35,923	1:17,805, 1:91,244
Aspiration	0			0		
1 Failed intubation	10			10	1:533	1:290, 1:971
2 High neuraxial block	58			58‡	1:4,336	1:3,356, 1:5,587
Anaphylaxis	5§	1:61,499	1:26,353, 1:189,403	0		
Respiratory arrest in labor suite	25	1:8,455	1:5,714, 1:12,500	16	1:10,042	1:6,172, 1:16,131
3 Unrecognized spinal catheter	14			14	1:15,435	1:9,176, 1:25,634
Total	157‖	1:1,959	1:1,675, 1:2,294	85#	1:3,021	1:2,443, 1:3,782

* The incidence and 95% CI are listed only once when solely related to anesthesia. † Fourteen cardiac arrests did not result in maternal death. ‡ Also includes high blocks on labor and delivery that resulted in respiratory arrests from local anesthetic administration. § The medications associated with anaphylaxis were administered by anesthesia personnel but were not anesthesia medications. ‖ There were 157 total serious complications; however, some complications are listed in more than one category. # There were 85 anesthesia-related serious complications; however, some complications are listed in more than one category.

MORTALITÉ MATERNELLE « Rapport 2007-2009 »

Rapport CNEMM. Octobre 2013

Evolution des taux de mortalité maternelle par causes de décès, France entière 2001-2009



CONCLUSION

« Nouveautés en anesthésie-analgésie obstétricale »

- **Césarienne -Prévention hypotension - Rachianesthésie**
  - Pré-remplissage ➔ colloïdes (HEA, pas d'AMM)
  - Co-remplissage ➔ HEA = Cristalloïdes
  - Phényléphrine ➔ perfusion cont = bolus (+ d'interventions anesth)
- **Analgésie post-césarienne**
  - Gold standard = morphine périmédul + analgésie multimodale (AINS++)
- **Réhabilitation post-césarienne**
  - Programme multiprofessionnel, audits réguliers
  - Analgésie efficace – Apports oraux précoces (< 6h) – Ablation rapide VVP/SU- Déambulation rapide -Facilitation relation mère-père-enfant

CONCLUSION

« Nouveautés en anesthésie-analgésie obstétricale »

❑ Analgésie obstétricale

- ➢ PCEA = Gold standard
- ➢ PRC = analgésie rapide, ↑ fréq prurit
- ➢ PIEB réduit modestement les doses d'AL, améliore la satisfaction.

❑ Complications anesthésie-analgésie obstétricale

- ➢ Céphalées chroniques post-brèche = fréquentes (28% à 18 mois) et invalidantes
- ➢ Complications graves les + fréq = échec IOT, niveau bloc haut, KT APD en rachi
- ➢ Mortalité maternelle imputable à l'anesthésie = rare (1 / 1 Million NV)