



# OFA : Mise au point

Dr. S. Ponsonnard

ALIADE

1 Avril 2017 🐟



Liens d'intérêts

# Marmiton.org : OFA

Agoniste  $\alpha$ -2 adrénergique (clonidine ou dexmedetomidine)

Lidocaïne

Kétamine

Sulfate de magnésium

Hypnotique

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J Med Assoc Thai. 2015 Oct;98(10):1001-9.  
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Bugada D, Lavand'homme P, Ambrosoli AL, Klersy C, Braschi A, Fanelli G, Sacconi Jotti GM, Allegri M; SIMPAR group..  
J Clin Anesth. 2015 Dec;27(8):658-64. doi: 10.1016/j.iclinane.2015.06.008

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Opioid-free general anesthesia in patient with Steinert syndrome (r [Medicine (Baltimore). 2016]

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[Pharmacological Action] OR
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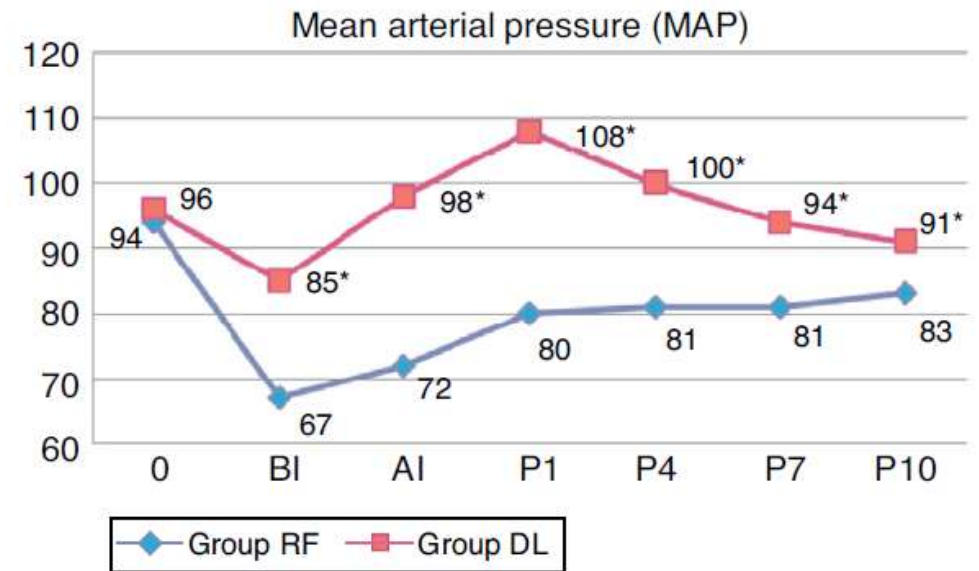
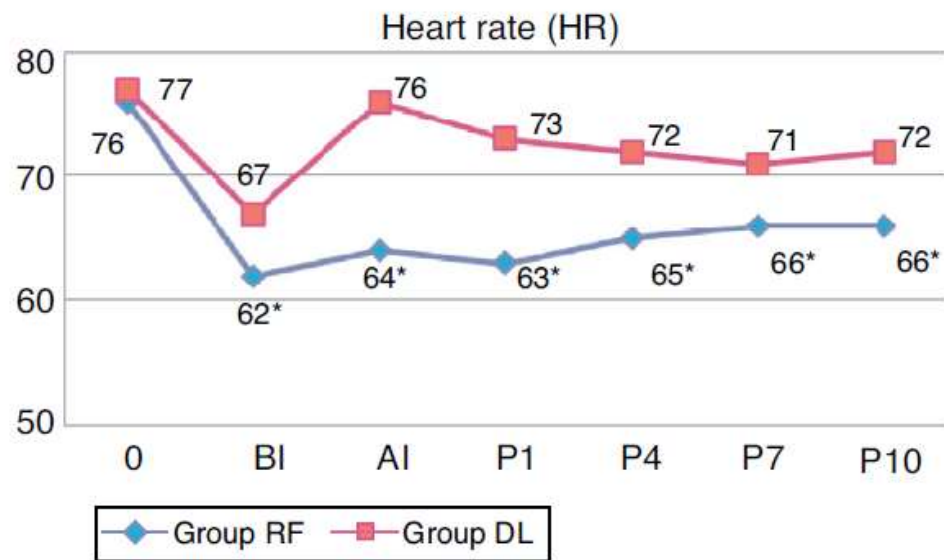
# Opioid-free total intravenous anesthesia with propofol, dexmedetomidine and lidocaine infusions for laparoscopic cholecystectomy: a prospective, randomized, double-blinded study<sup>☆</sup>

Prospective  
Randomisée  
Contrôlée



Bakan et al. Rev Bras Anesthesiol. 2015.

**Table 4** Postoperative pain intensity analysis.



NS, not significant, Max-NRS, maximal numeric rating scale score for pain intensity at the surgical ward after PCA was discontinued.

Prospective  
Randomisée  
Contrôlée

# Opioid-free total intravenous anaesthesia reduces postoperative nausea and vomiting in bariatric surgery beyond triple prophylaxis

TIVA :  
Propofol  
Ketamine  
Demedetomidine

Classique :  
Halogéné  
Morphinique

Prospective  
Randomisée  
Contrôlée

Ziemann-Gimmel et al. Br J Anaesth. 2014.



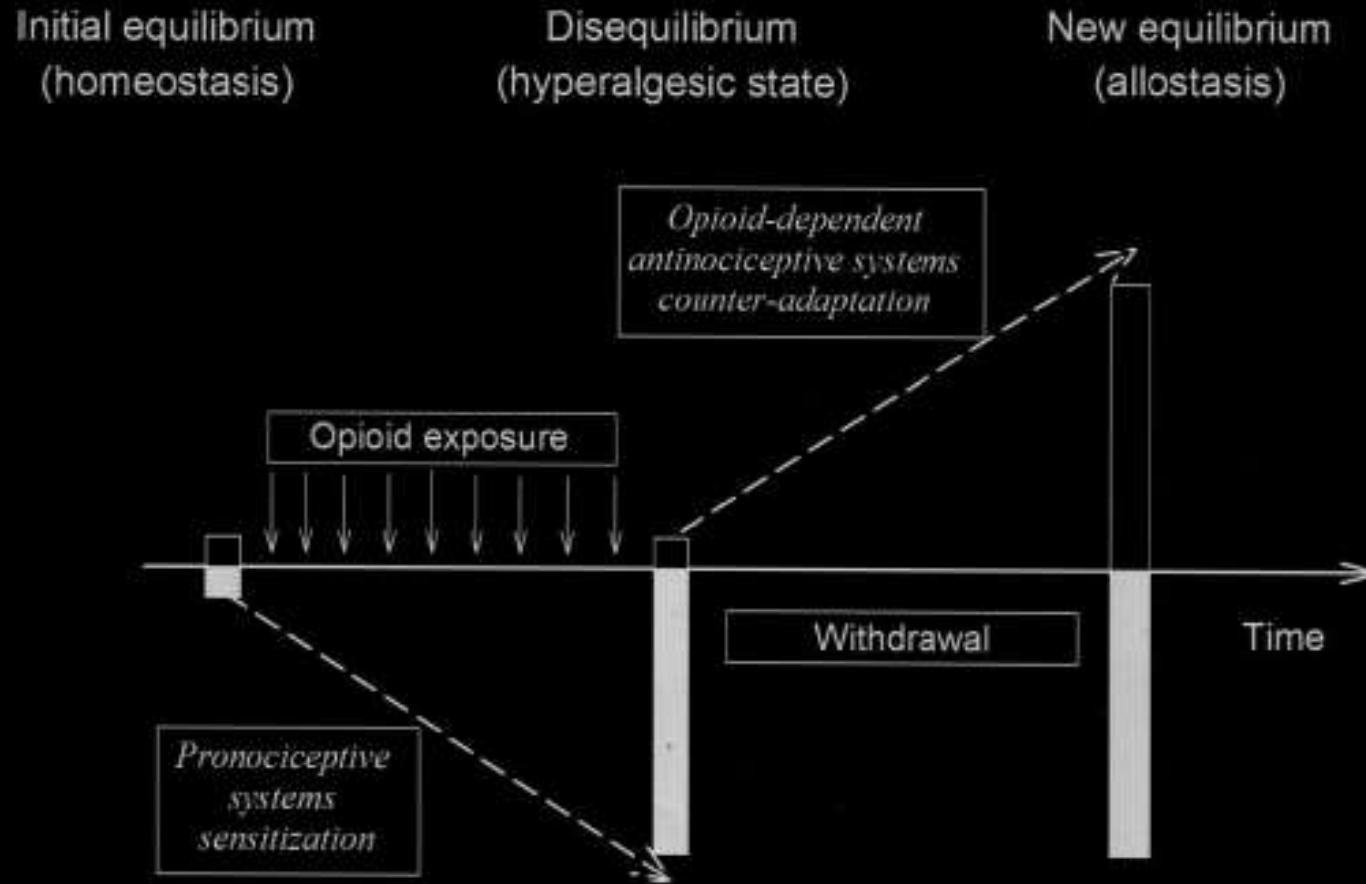
Merci de votre attention





Pourquoi je ne veux pas de  
morphiniques ?

# Hyperalgésie post morphinique



# Hyperalgésie post morphinique

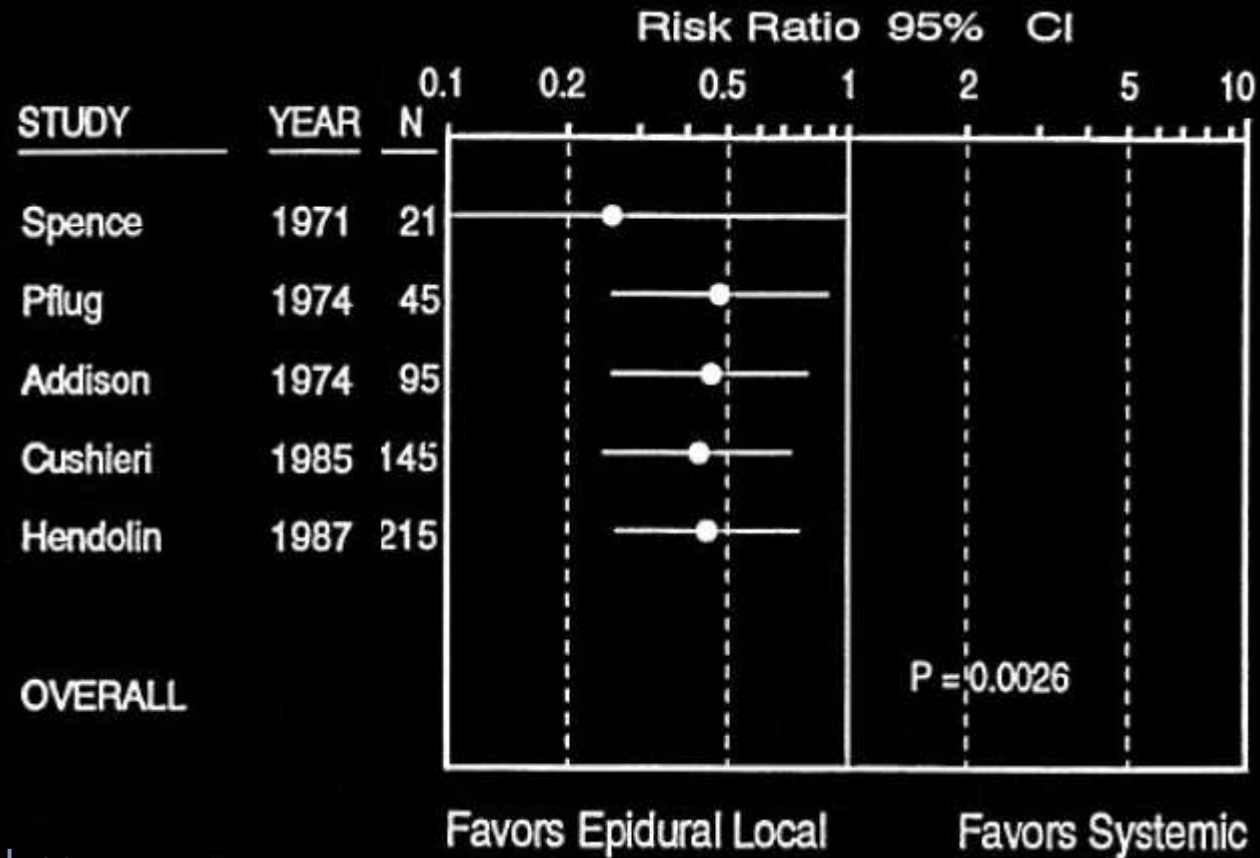
50 ↵

	Control group <i>N</i> = 40	Opioid-treated group <i>N</i> = 28	<i>P</i>
<b>Mechanical tests</b>			
Pressure pain threshold (kPa)	373.6 ± 192.3	358.8 ± 166.6	0.78
Pressure tolerance threshold (kPa)	560.3 ± 266.0	540.8 ± 250.0	0.59
NRS score for the temporal summation test with a Von Frey filament			
Difference in NRS score for Von Frey filament applications between the first and tenth applications ( $\Delta\text{NRS}_{10-1}$ )	1.02 ± 1.54	1.79 ± 1.83	0.04
<b>Thermal tests</b>			
Heat detection threshold (°C)	35.7 ± 1.5	35.9 ± 1.2	0.27
Heat pain threshold (°C)	43.5 ± 3.9	43 ± 3.6	0.63
Heat tolerance threshold (°C)	48.4 ± 2.2	47.1 ± 2.9	0.04
Duration of tolerance to stimulation at 47°C (s)	51.1 ± 17.4	40.2 ± 23.3	0.03
NRS score for the temporal summation test with 47°C stimulation			
Difference in NRS score for thermal applications between the first and fourth applications ( $\Delta\text{NRS}_{4-1}$ ).	1.0 ± 1.6	1.1 ± 1.5	0.8

Observationnelle  
Cas-témoins  
Prospective  
Orthopédie lourde

Day of surgery      24 h      48 h      72 h

# Complications respiratoires



Méta analyse  
Chirurgie thoracique

# Complications respiratoires

Endpoint	Frequency of endpoint (%)		p*
	Control (n=441)	Epidural (n=447)	
Postoperative death	4.3	5.2	0.67
Respiratory failure	30.2	23.3	0.02
Cardiovascular event	24.0	25.7	0.61
Renal failure	8.2	7.4	0.75
GI failure	6.8	6.5	0.95
Hepatic failure	2.9	2.2	0.65
Haematological failure	4.1	3.4	0.69
Inflammation/sepsis	46.7	42.7	0.26
At least one morbid endpoint	60.5	56.6	0.26
Death or at least one morbid endpoint	60.7	57.1	0.29

Prospective  
Randomisée  
Contrôlée  
889  
patients  
ITT

Reprise du transit

- 36 h

Taqi et al. Surg Endosc. 2007.

Marret et al. Br J Surg. 2007.



# Qualité de vie

	PCA Group (n = 31)		Epidural Group (n = 32)		Significant Effect
	Mean	SD	Mean	SD	
6-minute walking test (m)					
3 wk	-62.9	74.5	-32.0	62.6	Time × group; <i>P</i> = 0.0005
6 wk	-21.7	48.3	-5.0	59.0	—
Physical health					
3 wk	-13.5	10.0	-11.2	11.3	Time × group; <i>P</i> = 0.0001
6 wk	-5.5	9.7	-3.8	10.4	—
Mental health					
3 wk	-3.1	12.6	+5.0	11.6	Group; <i>P</i> = 0.002
6 wk	-3.3	13.9	+8.7	12.7	—
SF-36 subscales					
Physical functioning					
3 w					Time × group; <i>P</i> = 0.0001
6 w					—
Role-physical					
3 w					Group; <i>P</i> = 0.0109
6 w					Time × group; <i>P</i> = 0.0003
Role-emotional					
3 w					Group; <i>P</i> = 0.0023
6 w					—
Bodily pain					
3 w					Time × group; <i>P</i> = 0.0001
6 w					—
General health					
3 wk	-4.2	18.5	-2.9	19.8	Time × group; <i>P</i> = 0.0022
6 wk	-0.1	18.7	+3.9	17.1	—
Vitality					
3 wk	-17.3	21.5	-1.6	25.8	Group; <i>P</i> = 0.0003
6 wk	-4.5	17.1	+8.2	22.4	Time × group; <i>P</i> = 0.0001
Social functioning					
3 wk	-25.0	30.6	-11.3	26.5	Group; <i>P</i> = 0.0223
6 wk	-16.8	33.1	+5.6	40.2	Time × group; <i>P</i> = 0.0078
Mental health index					
3 wk	-4.7	26.2	+5.6	22.8	Group; <i>P</i> = 0.0496
6 wk	-0.7	26.7	+13.8	22.8	Time × group; <i>P</i> = 0.0084

**P = 0,0001**

PCA = patient-controlled analgesia; SF-36 = Short Form 36.

# Récidive carcinologique

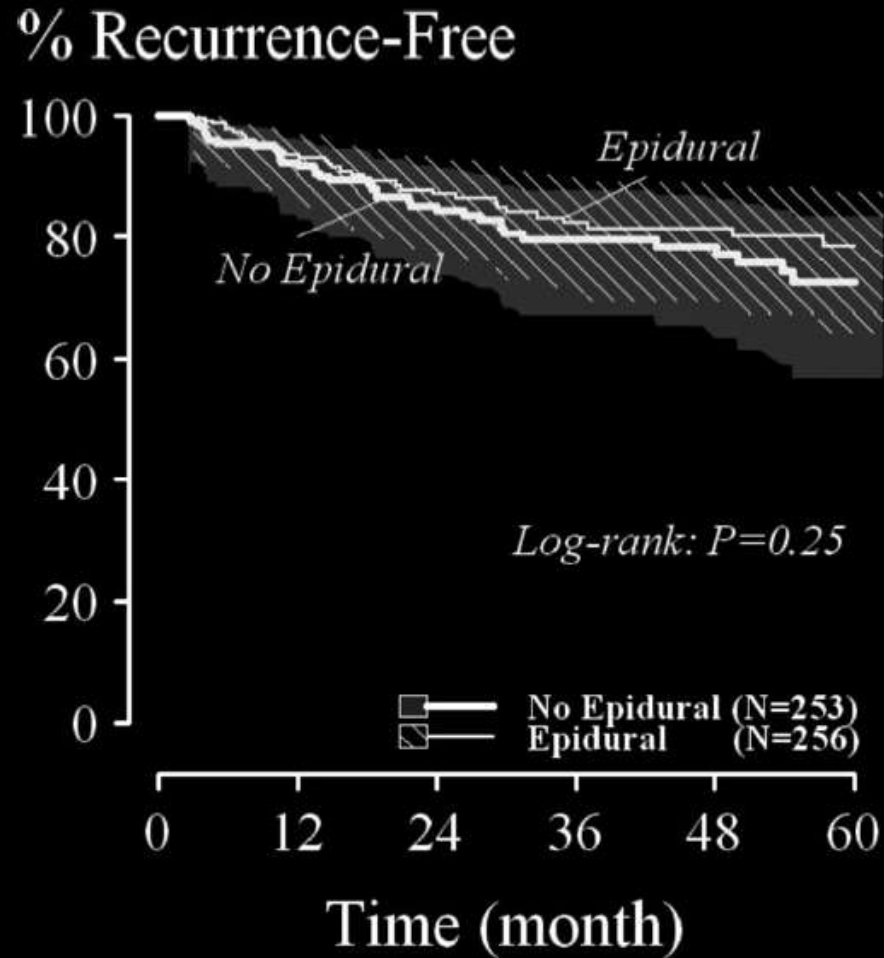
Prostate

**Wuelthrich et al. Anesthesiology. 2010.**  
**Biki et al. Anesthesiology. 2008.**

Sein

**Exadaktylos et al. Anesthesiol. 2006.**

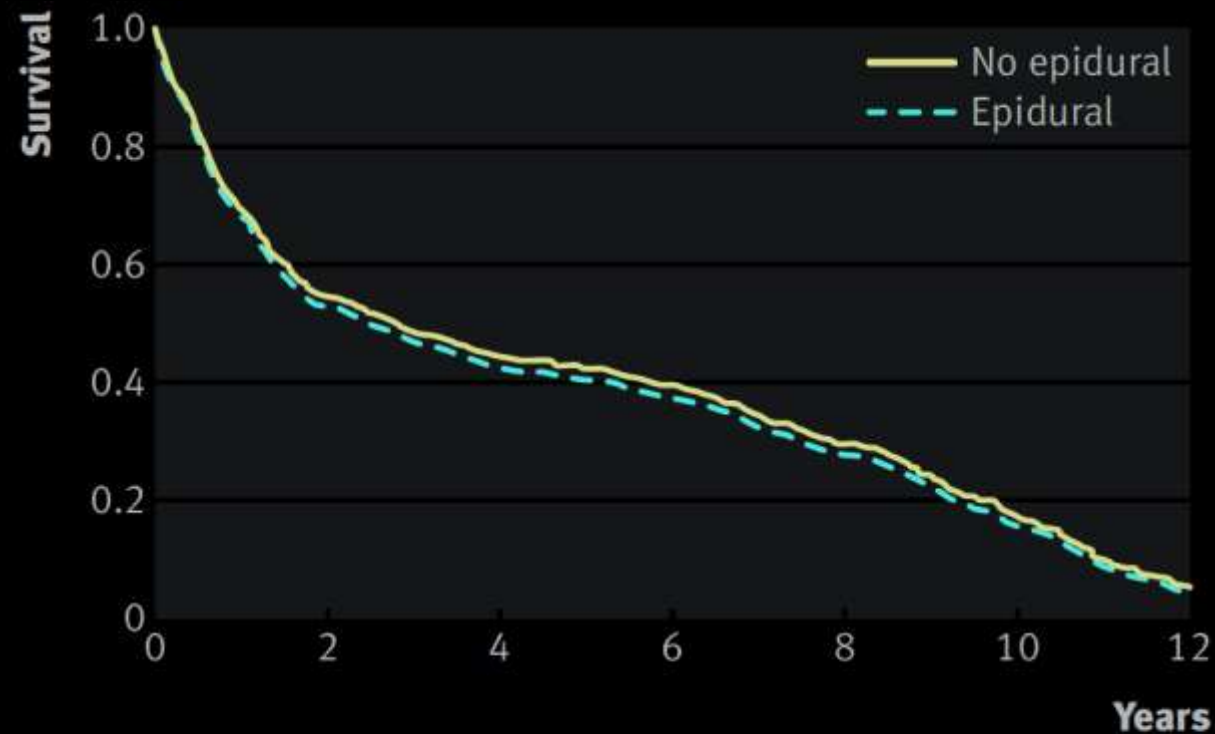
# Récidive carcinologique



Prospective  
669 cancers colorectaux

Gottschalk et al. Anesth Analg. 2010.

# Récidive carcinologique



Recurrence-free survival after cancer surgery by group  
(log rank  $P=0.61$ )

Prospective  
446 cancers origines  
multiples

Miles et al. BMJ. 2011.

# Ce qu'on attend de l'OFA

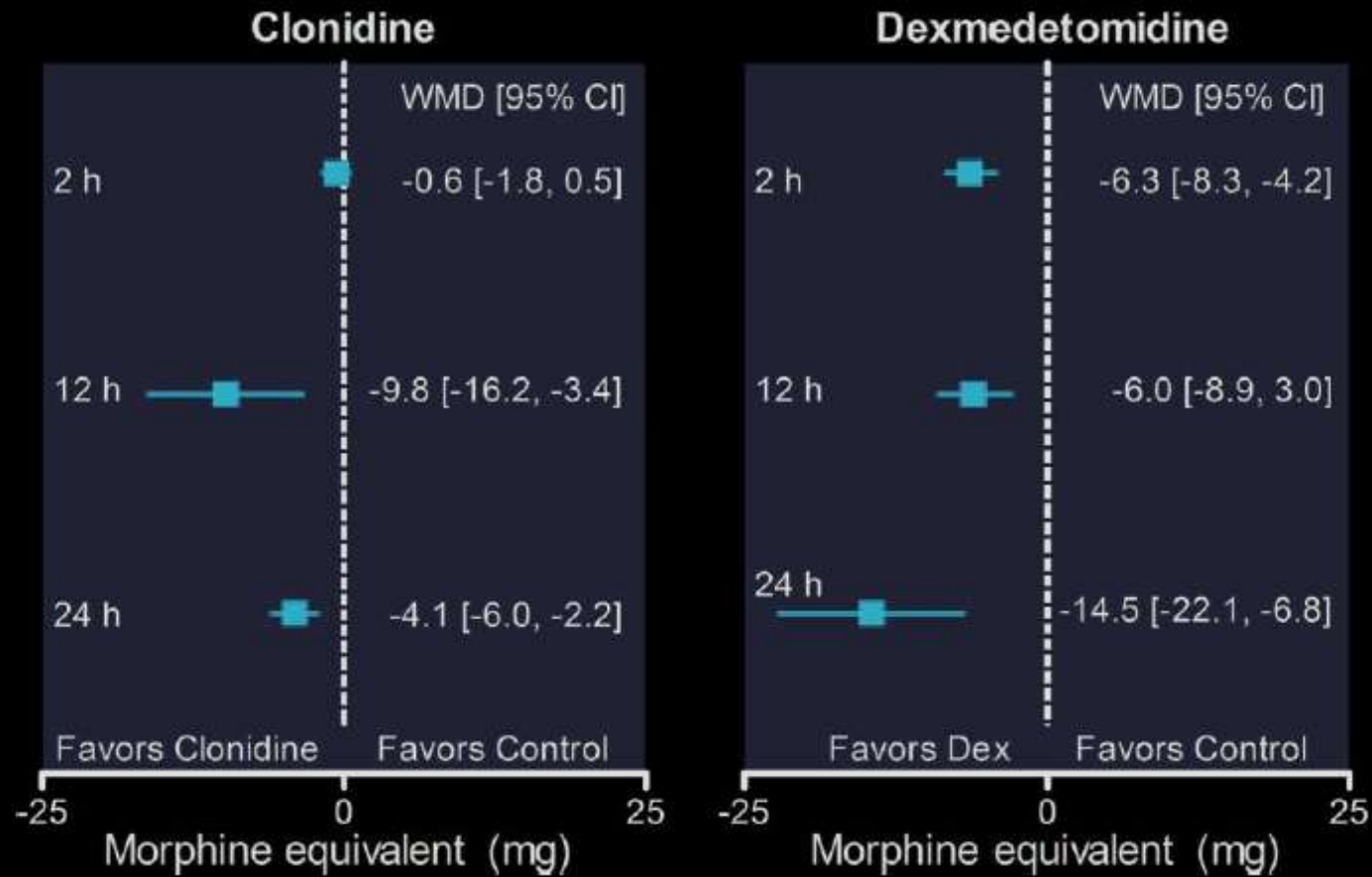
Meilleure prise en charge antalgique post opératoire

Diminution de la fréquence des complications post opératoire

Réhabilitation précoce

**Où sont les preuves ?**

# Agoniste $\alpha$ -2 adrénergique



# Lidocaine

Augmentation du seuil d'excitabilité A $\delta$  et C

Wallace et al. Pain. 1996.

Diminution de la transmission nociceptive spinale

Nagy et al. Pain 1996.

Blocage du recepteur NMDA

Sugimoto et al. Br J Pharmacol. 2003.

Action antiinflammatoire

Hollman et al. Anesthesiology. 2000.

Accélération de la reprise du transit

Herroeder et al. Ann Surg. 2007

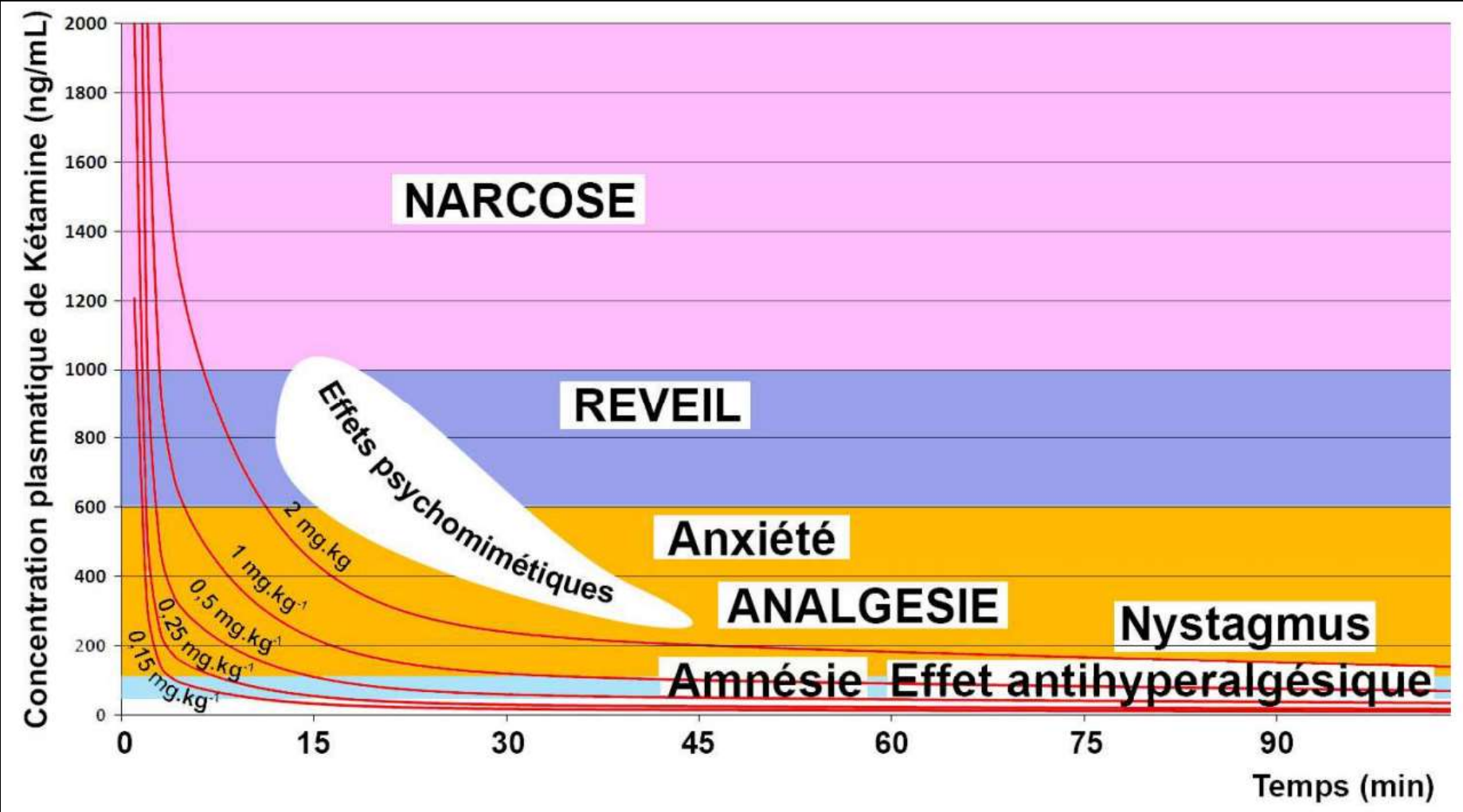
# Lidocaïne

R3.6 – Il est probablement recommandé d'administrer de la lidocaïne en intraveineux et en continu à la dose d'1 à 2 mg/kg en bolus intraveineux suivi de 1 à 2 mg/kg/h, chez les patients adultes opérés d'une chirurgie majeure (abdomino-pelvienne, rachidienne) et ne bénéficiant pas d'une analgésie périmerveuse ou péridurale concomitante dans le but de diminuer la douleur postopératoire et d'améliorer la réhabilitation.

G2+, Accord fort.



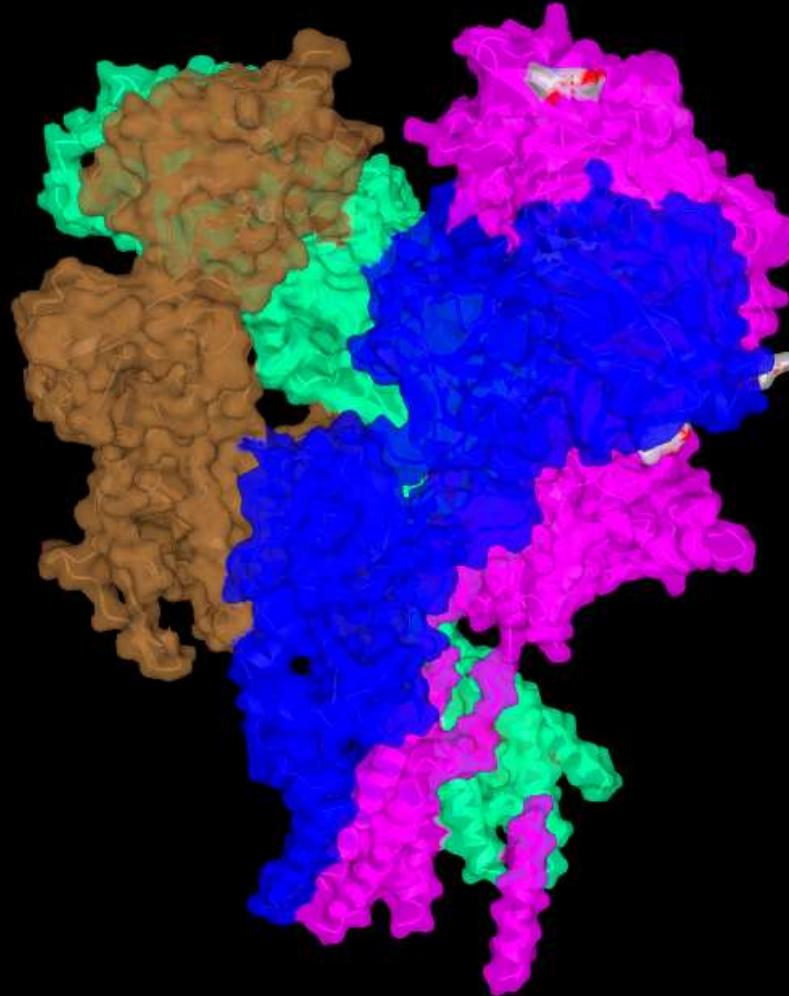
# Kétamine



# Kétamine

R3.8 – En peropératoire, l'administration de faible dose de kétamine chez un patient sous anesthésie générale est recommandée dans les deux situations suivantes : (a) chirurgie à risque de douleur aiguë intense ou pourvoyeuse de DCPC ; (b) patients vulnérables à la douleur en particulier patients sous opioïdes au long cours ou présentant une toxicomanie aux opiacés. G1+, Accord fort.

$Mg^{2+}$



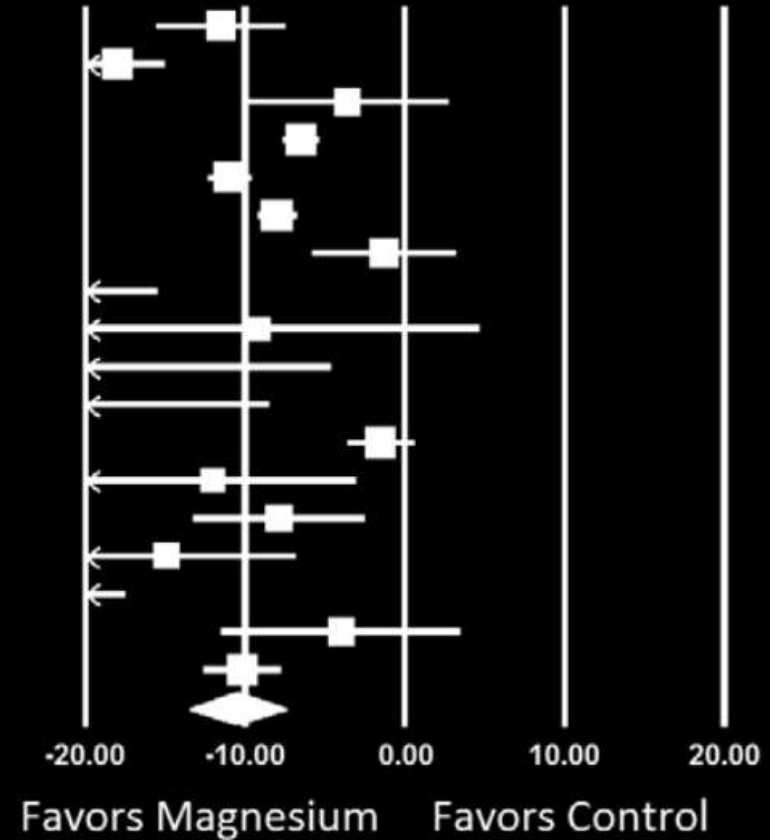
Lee et al. Nature. 2014.

<https://www.ncbi.nlm.nih.gov/Structure/pdb/4TLL>

# Mg<sup>2+</sup>

Saadawy (2010)<sup>32</sup>  
 Amor (2008)<sup>33</sup>  
 Mentes (2008)<sup>34</sup>  
 Ferasatkish (2008)<sup>34</sup>  
 Oguzhan (2008)<sup>35</sup>  
 Ryu (2008)<sup>37</sup>  
 Ozcan (2007)<sup>38</sup>  
 Tauzin-Fin (2006)<sup>41</sup>  
 (1) Seyhan (2006)<sup>42</sup>  
 (2) Seyhan (2006)<sup>42</sup>  
 (3) Seyhan (2006)<sup>42</sup>  
 Bhatia (2003)<sup>43</sup>  
 Levaux (2003)<sup>44</sup>  
 Kara (2002)<sup>45</sup>  
 Zarauza (2000)<sup>46</sup>  
 Koinig (1998)<sup>47</sup>  
 Wilder-Smith (1997)<sup>48</sup>  
 Tramer (1996)<sup>49</sup>

	Magnesium	Control
	40	40
	24	24
	41	42
	109	109
	25	25
	25	25
	12	12
	15	15
	20	7
	20	7
	20	7
	25	25
	12	12
	12	12
	23	24
	23	23
	12	12
	21	21
	479	442



Take Home message

**Il reste beaucoup de questions.**

*La recette du Chef*



*© 2014 Chef de Cuisine*

# Induction

Xylocaine 1,5 mg/kg IBW.

Kétamine 0,5 mg/kg IBW.

Magnésium 50 mg/kg IBW.

Propofol aux doses usuelles.

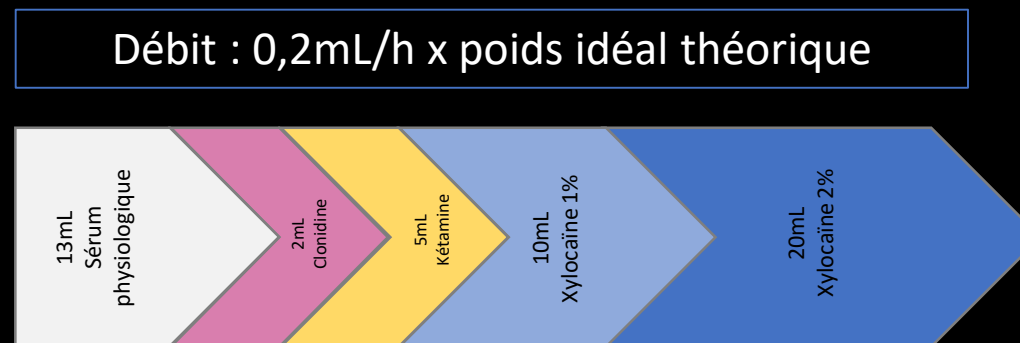
# Entretien

Xylocaïne 2% : 20mL, soit 400mg

Xylocaïne 1% : 10mL, soit 100mg

Kétamine 10mg/mL : 5mL, soit 50mg

Clonidine 150mcg/mL : 2 mL, soit 300mcg





Take Home message

**Il y a encore d'autres questions.**