

**CHU**  
*de Annaba*



# ROLE DE LA KETAMINE DANS LA PRISE EN CHARGE DE LA DOULEUR POST OPERTOIRE

BEDDIAR K, CHELLIA, MAKHLOUF, DJEBIEN

La douleur postopératoire aiguë, non ou mal traitée, peut être à l'origine de :

- Effets négatifs majeurs sur la qualité de vie de l'individu;
- Prolongation de la récupération et la réhabilitation;
- Prolongation de la durée du séjour à l'hôpital.



# Causes de la sensibilisation centrale périopératoire

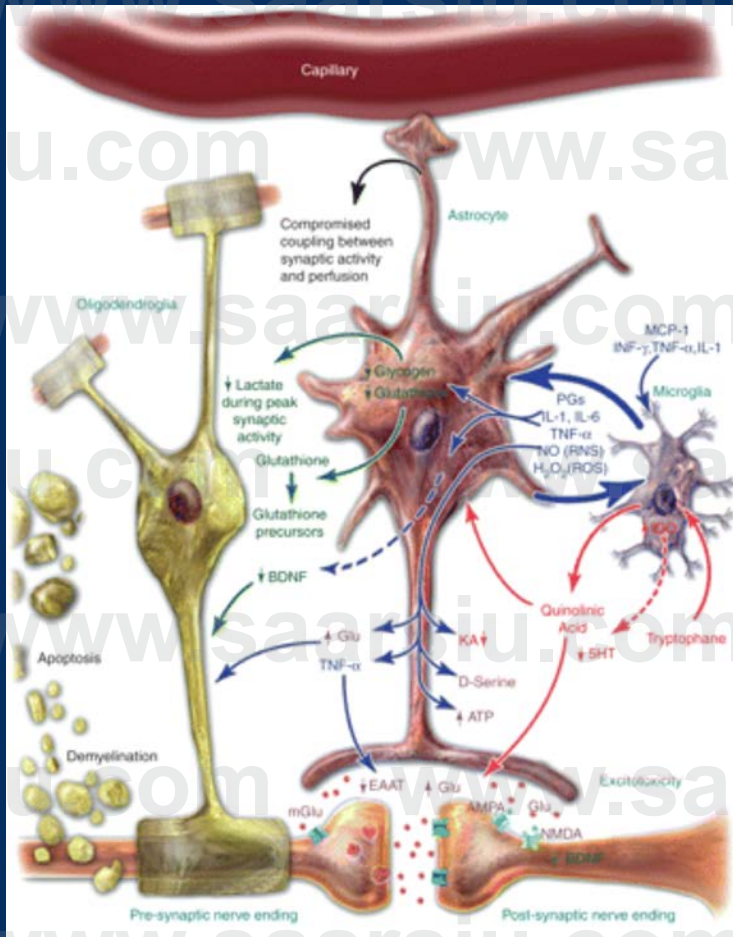
Chir (influx nociceptifs)  
Réaction inflammatoire  
(locale, générale, SNC)

Opiacés

Sensibilisation centrale périopératoire

DPO

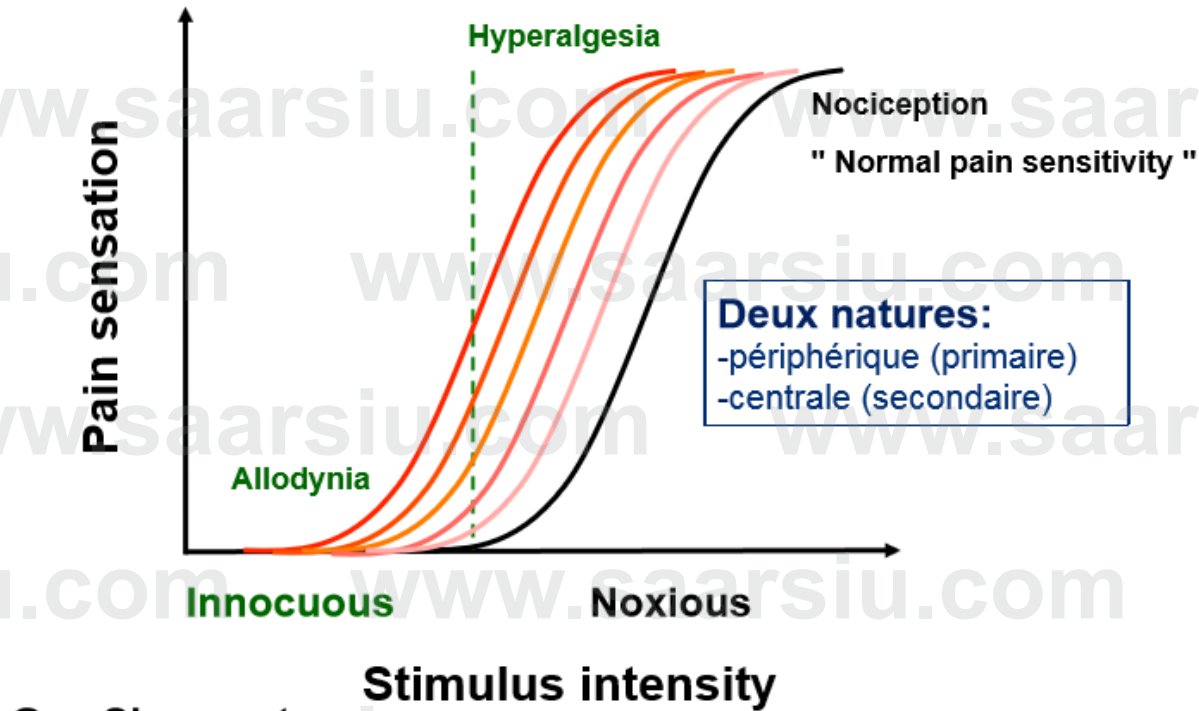
Lésions nerveuses peropératoires



Maletic & al BJA 2011

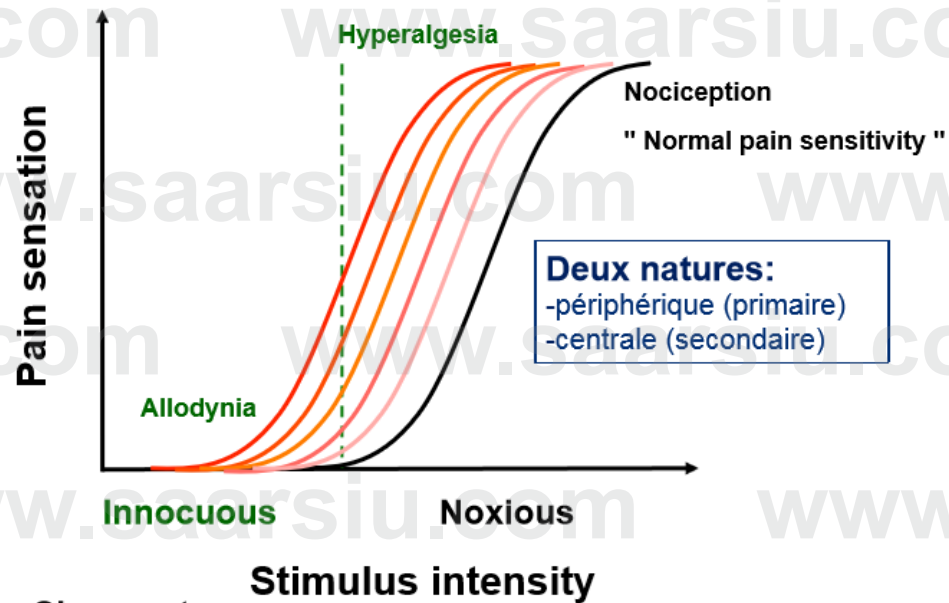
Marcel Chauvin Web[1106] 2016

## Hyperalgésie: rappel de définition



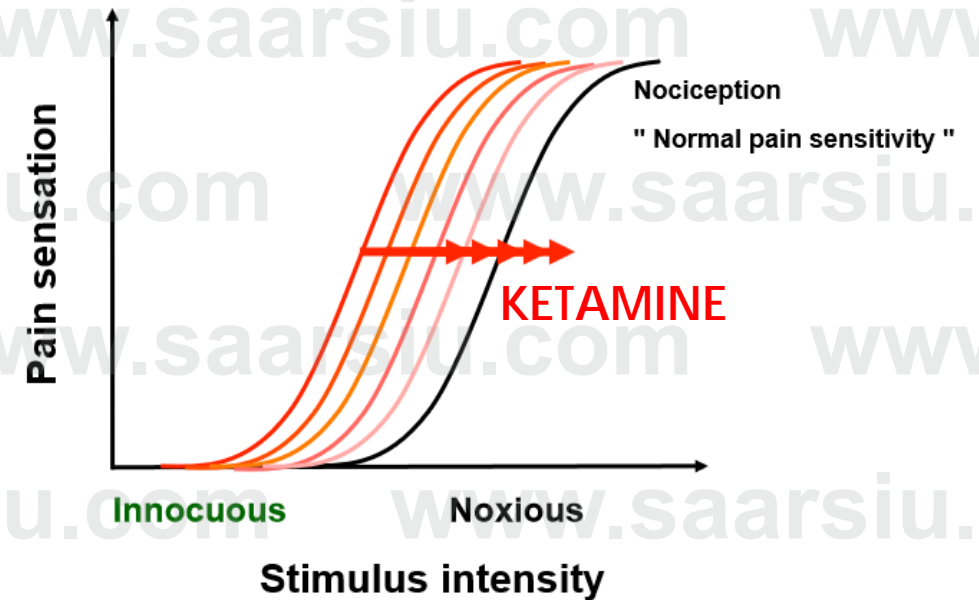
Guy Simonnet

## Hyperalgésie: rappel de définition



Guy Simonnet

## Antihyperalgésiques



## OBJECTIF



Évaluer l'efficacité de la kétamine administrée à faible dose en peropératoire dans la prévention de l'hyperalgésie postopératoire ainsi que les besoins en antalgiques.

# PATIENTS ET METHODES



Etude prospective comparative randomisée.

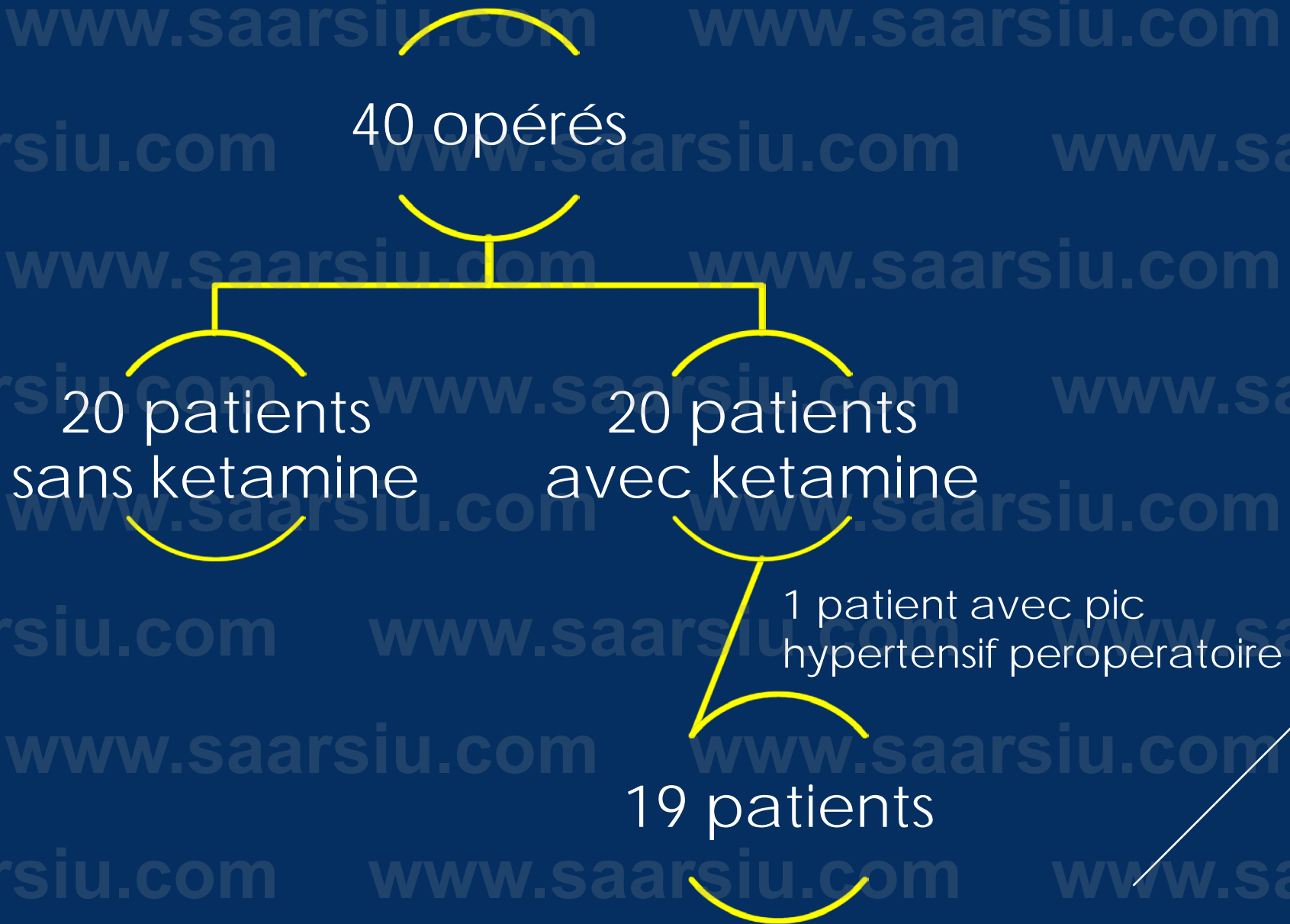
Critères d'inclusion:

Patient admis au bloc d'urologie CHU Annaba.

Chirurgie pourvoyeuse de douleur modérée à sévère.

Critères de non inclusion:

Troubles psychiatriques.



## Groupe ketamine +

### PEROP

Induction: Sufenta/Propofol/Curare  
**KETAMINE (0,2mg/kg)**

Entretien: Sufenta/Propofol/Sevo/Curare  
**KETAMINE (0,2mg/kg/h)**

Fermeture: Perfalgan+ Acupan

## Groupe ketamine -

### PEROP

Induction: Sufenta/Propofol/Curare

Entretien: Sufenta/Propofol/Sevo/Curare

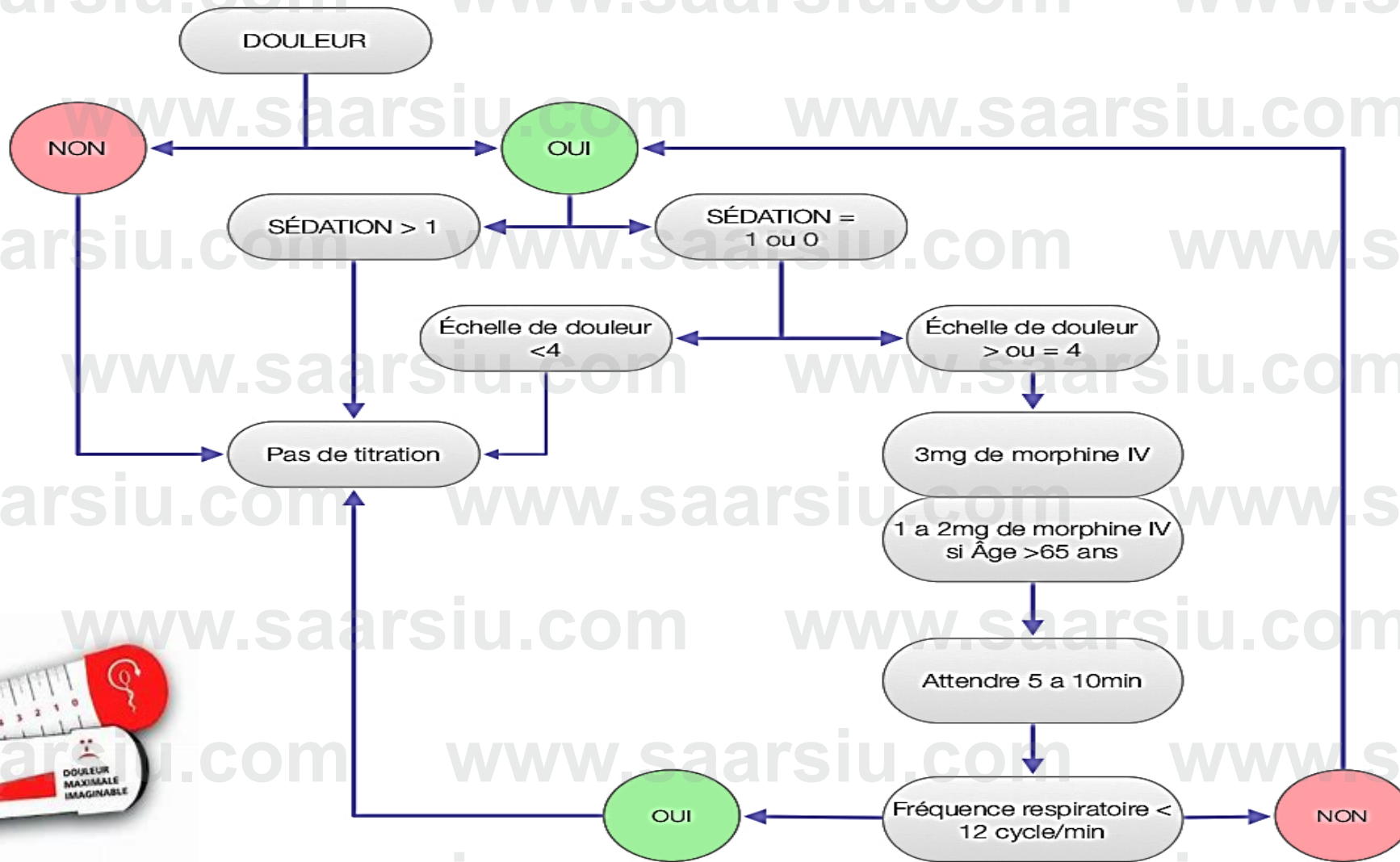
Fermeture: Perfalgan+ Acupan



### POST-OP :

EVA ( 0-10 )  
ACUPAN (1amp) + PERFALGAN (1gr) /6H,  
MORPHINE en titration IV, selon algorithme.  
relais par MORPHINE en PCA.





Échelle de douleur : échelle verbale analogique (EVA):  
demander au patient de situer sa douleur sur une échelle  
de 0 à 10

Échelle de sédation:  
S 0= patient éveillé  
S 1= patient somnolent répondant aux  
stimulations verbales  
S 2= patient somnolent répondant aux  
stimulations tactiles  
S 3= patient somnolent non stimuable.

# RESULTATS

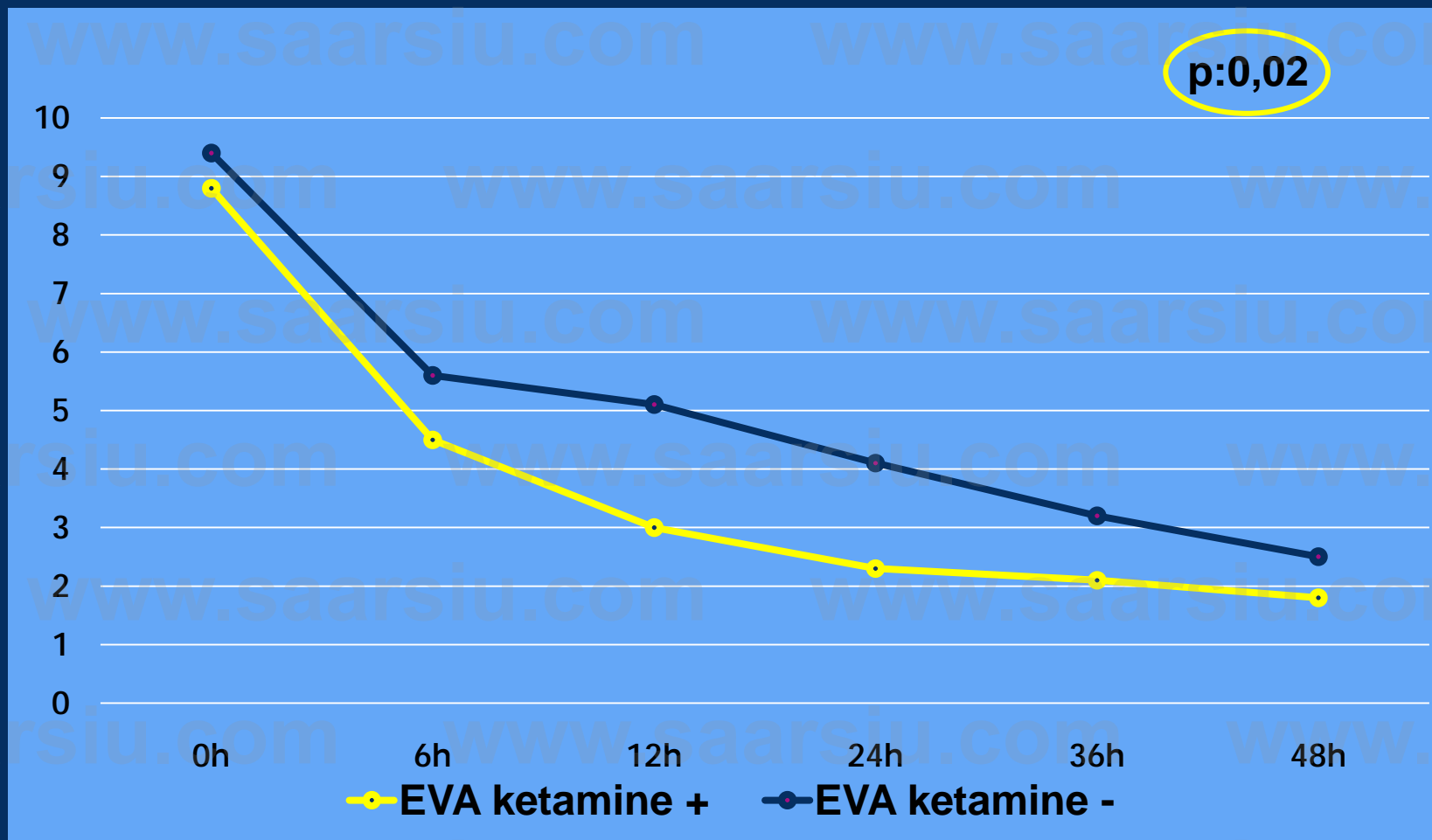


# Caractéristiques globales

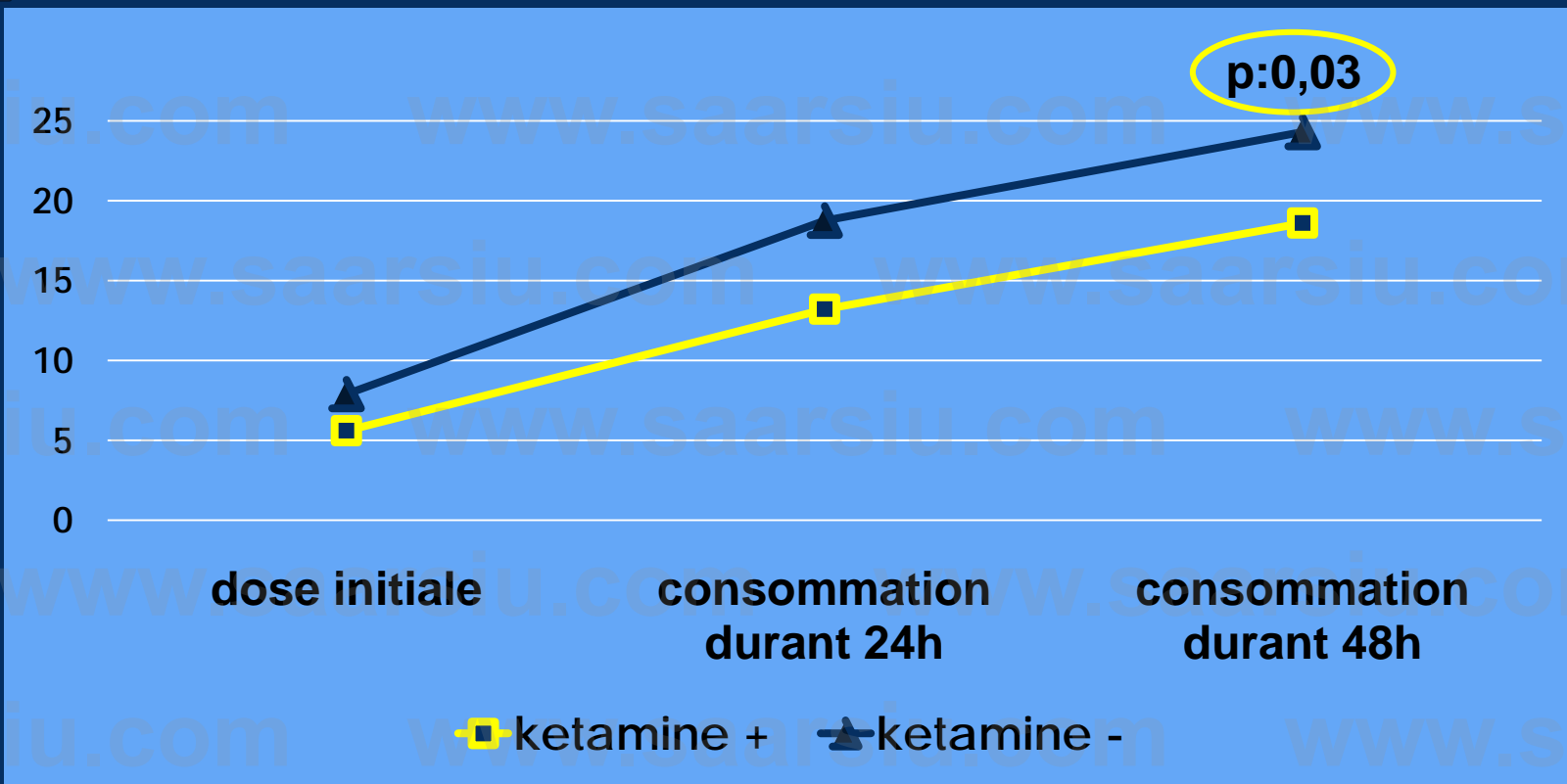
	Groupe kétamine +	Groupe kétamine -	p
Age	50,86 ±17.88	48,5±18,52	0.6
Sexe ratio	2.33	3	0.33
ASA 1	8	9	0.6
ASA 2	11	8	0.33
ASA 3	2	3	0.85
Type d'intervention			0.67
Néphrectomie par laparotomie	4	5	
Néphrectomie par lombotomie	3	2	
Cystoprostatetomie	5	6	
Prostatectomie	4	3	
Lithiase rénale	3	4	
Pelvectomie	1	0	

# Facteurs influençant l'analgésie post opératoire

	Groupe kétamine +	Groupe kétamine -	p
ATCD d'antalgiques préop	19	17	0.64
Paracetamol	11	9	
Tramadol	4	2	
AINS	5	6	
Durée de l'anesthésie	275,4± 118,17	266,1±110,48	0.36
Dose de sufentanyl reçues en perop	1,03±0,4	1,09±0,4	0,38



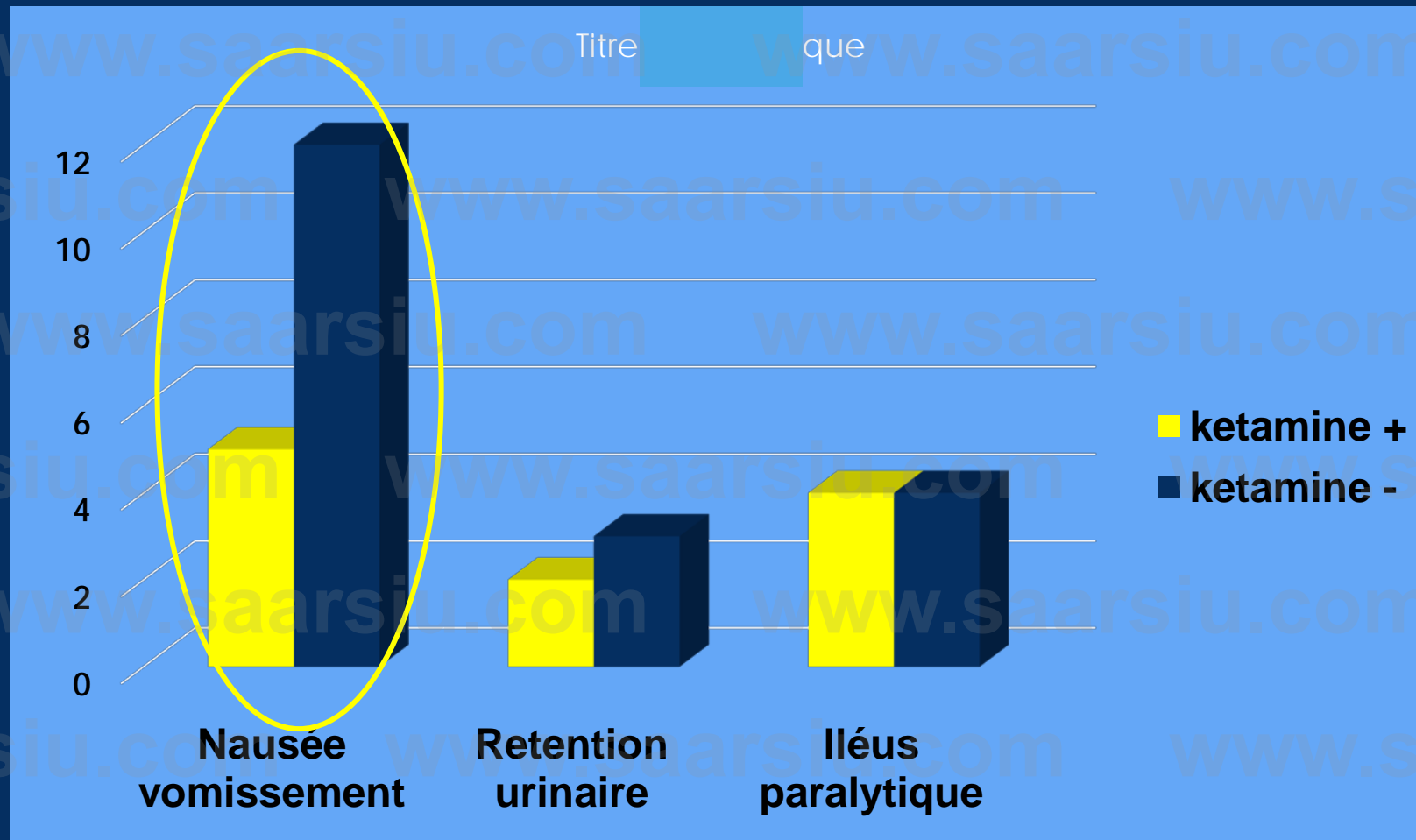
**Répartition des patients selon le score de la douleur**



# Consommation post opératoire de morphine

Groupe kétamine	Groupe kétamine	p
+	-	
20± 3	17± 2	0.073

# Delais de 1<sup>ère</sup> demande de morphine



**Répartition des malades selon les effets secondaires rencontrés**

# DISCUSSION



Notre étude a démontré le rôle de la kétamine dans la prise en charge de la douleur post opératoire .

[< Previous Article](#)

**June 2015** Volume 30, Issue 3, Pages 189–195

[Next Article >](#)

## Perioperative Ketamine for Acute Postoperative Analgesia: The Mayo Clinic—Florida Experience

Steven B. Porter, M.D., **S.B.PORTER, 2015, 500 patients**, Robert E. Ardon, MD, MPH,

### PHARMACOLOGY FACTS



## Ketamine—What Is Old Is New Again

*Julie Golembiewski, PharmD*

**December 2017** Volume 32, Issue 6, Pages 660–663

[Julie Golembiewski](#)

## The role of ketamine in pain management

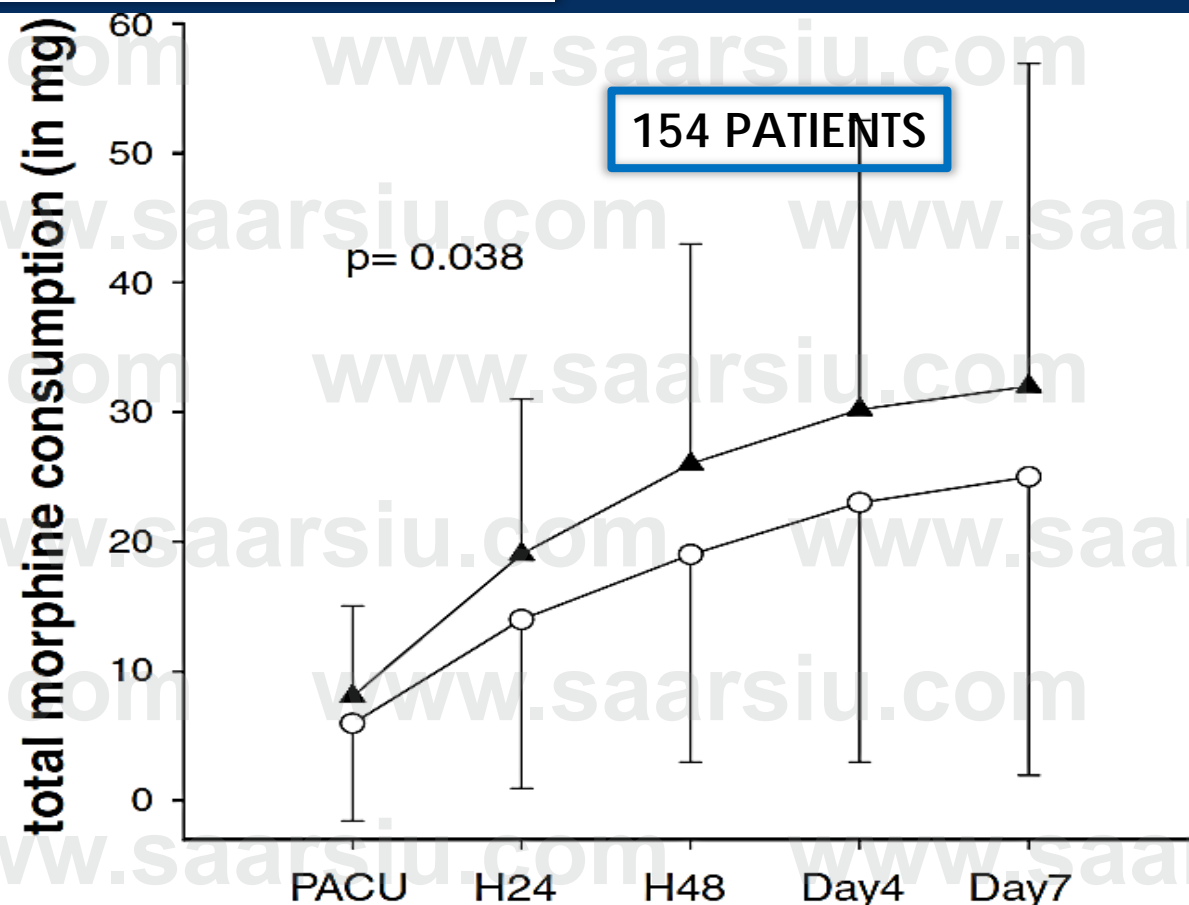
E. Visser<sup>a</sup>, S.A. Schug<sup>a,b,\*</sup>

Biomedicine & Pharmacotherapy 60 (2006) 341–348

## The Early and Delayed Analgesic Effects of Ketamine After Total Hip Arthroplasty: A Prospective, Randomized, Controlled, Double-Blind Study

Francis Remérand, MD\*

Vol. 109, No. 6, December 2009



Une réduction de la consommation globale et des 24h de morphine dans le groupe kétamine



Efficiency and safety of ketamine for pain relief after laparoscopic cholecystectomy: A meta-analysis from randomized controlled trials

Jiang Zhu, Hong Xie, Lingwei Zhang **J.ZHU, 294 patients, 2018**

**Conclusion**  
Intravenous ketamine infusion significantly reduced postoperative pain scores and opioid consumption

Une diminution des scores de douleur dans le groupe kétamine



Meilleure qualité de contrôle de la douleur postopératoire.



Canadian Journal of Anesthesia / Journal canadien d'anesthésie  
October 2011, 58:911 | [Cite as](#)

A systematic review of intravenous ketamine for postoperative analgesia

**K. LASKOWSKI, 2011**

Revue de la littérature - 1966-2010  
70 études - 4701 Patients

efficacious. This finding implies an improved quality of pain control in addition to decreased opioid consumption.

# Un allongement des délais jusqu'à première demande d'agent analgésique.

Can J Anesth/J Can Anesth (2011) 58:911-923  
DOI 10.1007/s12630-011-9560-0

## REPORTS OF ORIGINAL INVESTIGATIONS

### A systematic review of intravenous ketamine for postoperative analgesia

### Revue méthodique de l'utilisation de la kétamine intraveineuse pour l'analgésie postopératoire

Kevin Laskowski, MD · Alena Stirling, MD ·  
William P. McKay, MD · Hyun J. Lim, MD

Received: 9 November 2010 / Accepted: 8 July 2011  
© Canadian Anesthesiologists' Society 2011

**K. LASKOWSKI, 2011**

*studies were used to corroborate the results. A reduction in total opioid consumption and an increase in the time to first analgesic were observed across all studies ( $P < 0.001$ ).*

**B. HADI, 2013, N= 45**

Saudi Pharmaceutical Journal (2013) 24, 469-475



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Saudi Pharmaceutical Journal

www.ksu.edu.sa  
www.scipubdirect.com



### A randomized, controlled trial of a clinical pharmacist intervention in microdiscectomy surgery – Low dose intravenous ketamine as an adjunct to standard therapy

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<sup>c</sup> University Pharmacy Department of Pharmacy Administration, II-1085 Budapest, Üllői Street 26, Budapest, Hungary

Received 14 July 2012; accepted 15 August 2012  
Available online: 10 September 2012

#### KEYWORDS

Ketamine;  
Microdiscectomy surgery;  
Intra-operative;  
Post-operative;  
Morphine consumption;  
Nausea and vomiting

**Abstract** *Aim:* The hypothesis that postoperative pain would be reduced by using 1 µg/kg/min of ketamine, both intra- and post-operatively, for lumbar microdiscectomy surgery was assessed by measuring morphine consumption. Patient side effects were reported.

*Methods:* Forty five patients undergoing microdiscectomy surgery were randomized under double-blind conditions into three groups: Group 1 (G1) received normal saline, Group 2 (G2) ketamine (1 µg/kg/min) intra-operatively and Group 3 (G3) ketamine (1 µg/kg/min) both intra- and post-operatively. Morphine consumption, pain scores, nausea and vomiting, CNS disorders were recorded for 24 h post-operatively. The consumption of morphine in the context of a clinical pharmacist intervention.

*Results:* The time for the first analgesia demand dose was significantly shorter ( $P < 0.05$ ) in G1 ( $117 \pm 1.7$  min) than for G2 and G3. In G3 morphine consumption 6, 12, and 24 h after surgery was significantly lower ( $P < 0.05$ ) than for G2 and G3. Total morphine consumption was significantly lower for G3 than for G2 and G3 ( $P < 0.05$ ). The visual analog scale scores for pain were significantly lower in G3 ( $P < 0.05$ ) than for the other groups during the first 24 h. The rate of nausea and vomiting was significantly higher in G1 vs G3 ( $P < 0.05$ ). No difference in drug induced CNS disturbances was observed among the groups.

*Conclusion:* Using 1 µg/kg/min of ketamine hydrochloride intra- and post-operatively for microdiscectomy surgery could be an adjunct therapy to reduce postoperative morphine consumption.

**Results:** The time for the first analgesia demand dose was significantly shorter ( $P < 0.05$ ) in G1 ( $117 \pm 1.7$  min) than for G2 and G3. In G3 morphine consumption 6, 12, and 24 h after surgery

# Postoperative Ketamine Administration Decreases Morphine Consumption in Major Abdominal Surgery: A Prospective, Randomized, Double-Blind, Controlled Study

Section Editor(s): Liu, Spencer S.Zakine, **W.LIU** MD\*; Samarcq, David MD\*; Lorne,

Anesthesia & Analgesia: June 2008 - Volume 106 - Issue 6

The screenshot shows the journal's website interface. At the top, the journal title 'ANESTHESIA & ANALGESIA' is displayed. Below it, there are navigation tabs for 'Articles & Issues', 'CME', 'Subjects', 'Collections', '中文部', 'Multimedia', 'For Authors', and 'Journal Info'. The main content area features the article title, authors' names, and publication details. A search bar with 'Search' and 'Scholar' buttons is visible. Below the article information, there are links for 'Abstract', 'In Brief', 'Author Information', 'Article Outline', and 'Article Metrics'. The bottom part of the screenshot shows the beginning of the abstract, including the 'RESULTS' and 'CONCLUSIONS' sections.

Des Nausées et vomissements postopératoires moins fréquents dans le groupe kétamine.

reduction of the side effects of morphine such as nausea

Effet d'épargne morphinique

**The Use of Intravenous Infusion or Single Dose of Low-Dose Ketamine for Postoperative Analgesia: A Review of the Current Literature**

Julie Jouguelet-Lacoste, MSc,\*1 Pain Medicine 2015; 16: 383–403

Effet bénéfique de la kétamine sans augmentation de ses effets psychodysléptiques

**Conclusions**

Low-dose ketamine is clearly safe to administer and enhances postoperative analgesia. Our review tends to support the idea that ketamine's benefit predominantly comes from a reduction of opioid burden more than a reduction of pain scores. The drug's optimal dose and regimen of administration, however, remain unknown. To ascertain the dose and regimen at which ketamine is most

low doses of ketamine was not associated with any psychomimetic effects.

erative and postoperative infusions or use higher intraoperative doses.

Survenue d'un pic hypertensif en peropératoire  
chez deux (2) malades.



Réduction des doses de kétamine.....1 patient.  
Arret du protocole.....1 patient.

## Limites de l'étude

Evaluation subjective de la douleur

Petite taille de l'échantillon

Biais : Effet confort de morphine en PCA.



Interet

Etudes complémentaires

Elargissement de l'échantillon

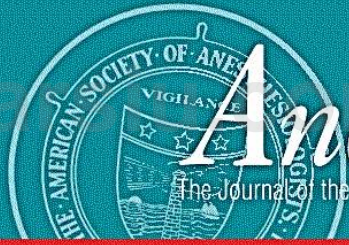
Moyens objectifs d'évaluation de la douleur

Mise en place de protocole

# CONCLUSION



La kétamine peropératoire à faible dose peut constituer **un ajout utile** à l'arsenal thérapeutique de prise en charge multimodale de la douleur postopératoire, réduisant ainsi la demande en morphiniques et minimisant leurs effets secondaires.



September 2010  
Volume 113, Number 3  
ISSN 0003-3022

# Anesthesiology

The Journal of the American Society of Anesthesiologists, Inc.  
www.anesthesiology.org

## Ketamine: From the Origins of "Dissociative Anesthesia" to Modern Analgesic

## Ketamine: From the Origins of "Dissociative Anesthesia" to Modern Analgesic



- Angst and Clark: Ketamine for Managing Perioperative Pain in Opioid-dependent Patients with Chronic Pain: A Unique Indication?, pp. 514–5.
- Loftus *et al.*: Intraoperative Ketamine Reduces Perioperative Opiate Consumption in Opiate-dependent Patients with Chronic Back Pain Undergoing Back Surgery, pp. 639–46.
- Domino: Taming the Ketamine Tiger, pp. 678–84.

Full Text  
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