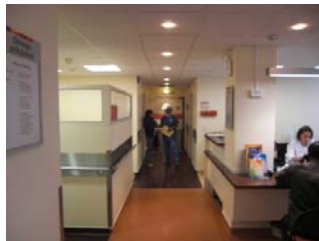


Analgésie de l'opéré ambulatoire



PRIORITE Centre AMBULATOIRE

- Récupération rapide post anesthésique
- Passage rapide en SSPI / Fast Tracking?

PERMETTANT
SORTIE

- rapide
- prévisible
- ⇒ programmable
- en confort
- en sécurité

ÉCUEIL

DPO non contrôlée
NVPO++

Somnolence, vertiges

H 24 30% Douleurs modérés à sévères
Farci BEH et al. Can J Anaesth 2004
(5703 patients)



PERSPECTIVES de L' AMBULATOIRE



Nouvelles Recommandations RFE SFAR 2009

« Privilégier ambulatoire dès que conditions de réalisation réunies »

Pression des tutelles

FUTUR = 80 % ambulatoire !

→ Entente préalable / Structure Ambulatoire obligatoire,

→ **Chirurgies douloureuses**

→ **DEFI Analgésique++**

DEFI Analgésique



= Pas de retard de sortie

.....ou annulation sortie / réadmission / recours aide extérieure
du à une DPO non contrôlée.....et/ou à des NVPO!



-Efficace d' emblée **sur l' intensité** prévisible DPO

-Efficace sur la **durée** prévisible DPO

ANTICIPATION !

RELAIS+++

-Sans induire d' **effets secondaires** handicapants: NVPO,..

ANTALGIQUES Disponibles

En pré-per et postopératoire

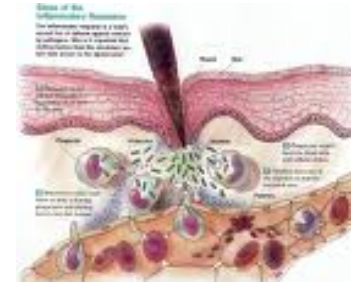
ANALGESIE MULTIMODALE

« 1er rang »

SYSTEMATIQUE

aucun effet secondaire qui puisse retarder une sortie

1- Paracétamol



2- AINS +++

Profènes,...

,Ibuprofène-Kétoprofène-Naproxène-Kétorolac,...

Agression chirurgicale \longrightarrow composante **INFLAMMATOIRE**

+/- inhibiteur de la pompe à protons + ingestion au moment des repas

48h max



CI suspicion de saignement digestif, I rénale, IEC ,personne âgée, association (AVK, Aspirine, ISRS, corticoïdes,..)

AINS en post opératoire



The Effects of Oral Ibuprofen and Celecoxib in Preventing Pain, Improving Recovery Outcomes and Patient Satisfaction After Ambulatory Surgery

Paul White et al. Anesth Analg February 2011;112:323-329_

CONCLUSIONS: « Both ibuprofen (1200 mg/d) and celecoxib (400 mg/d) significantly decreased the need for rescue analgesic medication in the early postdischarge period, leading to an improvement in the quality of recovery and patient satisfaction with their pain management after outpatient surgery. »

« Primary endpoint : Resumption of normal activities of daily life»

Efficacité + Epargne morphinique / NVPO

ANTALGIQUES Disponibles

En per et/ou postopératoire

« 2ème rang »

ANALGESIE MULTIMODALE

Avec effets secondaires pouvant retarder la sortie...ou nécessiter réadmission

1- **Nefopam** antalgique central non morphinique (inhibition recapture monoamines)

Sueurs tachycardie vertiges NVPO

peu adapté à l' Ambulatoire (p.os=0 ou « sur un sucre »)

Précautions: I Coronarienne, rénale et hépatocellulaire

2- **Tramadol** opiacé faible

NVPO vertiges somnolence

3- **Codéine et Morphine** à libération immédiate (Actiskenan®, Oxycodone®)

NVPO vertiges somnolence

~~Dextro~~propoxyphène (DPX) cf CC SFAR DPO 1997:« il n' est plus recommandé d' utiliser le DPX (1964 70M boites/an) en analgésie post op .»  Site SFAR mise à jour 16/01/2011

Postoperative Nausea and Vomiting Are Strongly Influenced by Postoperative Opioid Use in a Dose-Related Manner

Gregory W. Roberts, B Pharm, FSHP, BCPS⁺, Tenna B. Bekker, MSc Pharm[‡],
Helle H. Carlsen, MSc Pharm[‡], Christine H. Moffatt, MBBS, FANZCA[†],
Peter J. Slattery, MBBS, FANZCA, FFPMANZCA[†], and Anna F. McClure, B Pharm, BCPS⁺

(Anesth Analg 2005;101:1343–8)

*Pharmacy Department and †Department of Anesthesia, Intensive Care, and Pain Medicine, Repatriation General Hospital, Daw Park, Australia; and ‡Royal Danish School of Pharmacy, Copenhagen, Denmark

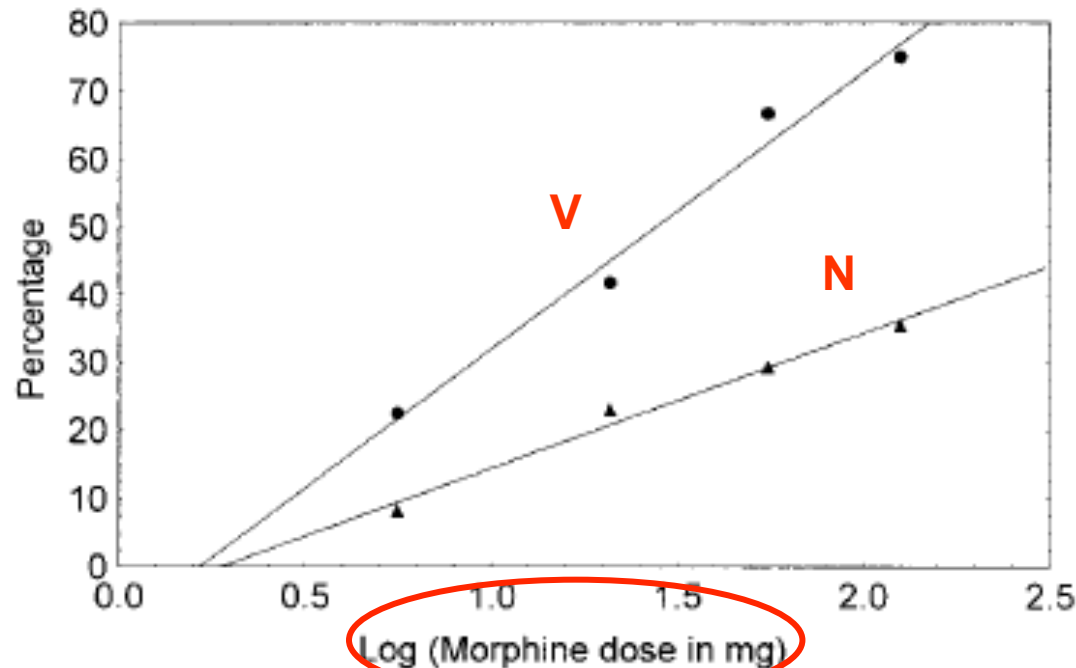


Figure 3. Log morphine dose (mg) in the immediate 24 h postoperatively versus vomiting (\blacktriangle) and nausea (\bullet). Vomiting: $r^2 = 0.98$, $P = 0.008$. Nausea: $r^2 = 0.98$, $P = 0.010$.



DILEMME



DPO



NVPO



STRATEGIE



1-2-3

EN pré-per opératoire:

1- **Prévenir** apparition **NVPO** chez patients à risque

2- **Diminuer** au maximum consommation morphinique per et post opératoire **Épargne morphinique++**



AINS,... Ketamine, corticoïdes,
ALR: blocs, infiltrations

3- **Initialiser** l' analgésie post opératoire++

1- Prévenir apparition NVPO chez patients à risque

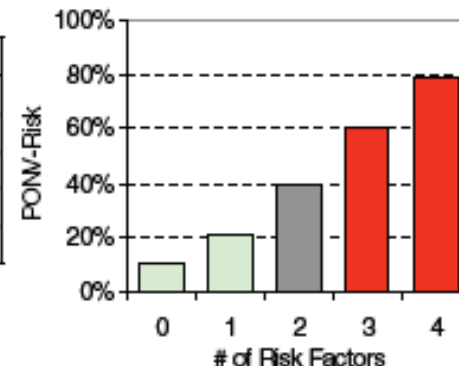
Society for Ambulatory Anesthesia Guidelines for the Management of Postoperative Nausea and Vomiting

Table 2. Strategies to Reduce Baseline Risk

- Avoidance of general anesthesia by the use of regional anesthesia (11,16) (randomized, controlled trial, RCT)
- Use of propofol for induction and maintenance of anesthesia (4,14,41,42) (RCT/systematic review, SR)
- Avoidance of nitrous oxide (3,4,43,44) (RCT/SR)
- Avoidance of volatile anesthetics (15,28) (RCT)
- Minimization of intraoperative (SR) and postoperative opioids (3,13,15,17,18,20,28,43) (RCT/SR)
- Minimization of neostigmine (19,45) (SR)
- Adequate hydration (46) (RCT)

Tong J. Gan, MD*
 Tricia A. Meyer, PharmD, MS††
 Christian C. Apfel, MD, PhD§
 Frances Chung, FRCP(C)|
 Peter J. Davis, MD¶
 Ashraf S. Habib, MB, FRCA*
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 Anthony L. Kovac, MD**
 Peter Kranke, MD, PhD, MBA††
 Paul Myles, MD‡‡
 Beverly K. Philip, MD§§
 Gregory Samsa, PhD||
 Daniel I. Sessler, MD¶¶
 James Temo, CRNA, MSN, MBA##
 Martin R. Tramér, MD, DPhil***
 Craig Vander Kolk, MD†††
 Mehernoor Watcha, MD‡‡‡

Risk Factors	Points
Female Gender	1
Non-Smoker	1
History of PONV	1
Postoperative Opioids	1
Sum =	0 ... 4



2/1- Diminuer au maximum consommation morphiniques

Table 4. Univariate Analyses of Factors Predictive of Postoperative Nausea or Vomiting

Variable	Level	No. in Level	% With PONV	P value
Pre-/intraoperative fentanyl ($\mu\text{g}/\text{kg}$)	<1.5	87	21%	<0.001
	≥ 1.5	81	46%	
Surgery type	Hernia	25	40%	0.001
	Male knee	25	20%	
	Plastic	25	72%	
	Laparoscopy	25	40%	
	Transvaginal	25	24%	
	Breast	25	24%	
Surgery duration (min)	Female knee	25	20%	0.003
	<60	101	26%	
	60-119	3	41%	
	>119	11	72%	
Cumulative fentanyl (μg) ^a	<150	103	27%	0.02
	≥ 150	72	44%	
Intraoperative ketorolac	No	111	41%	0.03
	Yes	64	23%	
Anesthesia (breast surgery cases only)	General anesthesia	15	40%	0.05
	Local anesthesia	10	0%	

PONV = postoperative nausea and/or vomiting.

^a Cumulative fentanyl = pre-/intraoperative fentanyl plus recovery fentanyl dose.

Chirurgie longue ou inconfortable → ALR + AG = Épargne Morphinique

Ex: Chirurgie de l'épaule

2/2-Diminuer au maximum consommation morphiniques

634 AMBULATORY ANESTHESIA PAVLIN ET AL.
PAIN AFTER AMBULATORY SURGERY

AINS per opératoire

ANESTH ANALG
2002;95:627-34

Table 4. Univariate Analyses of Factors Predictive of Postoperative Nausea or Vomiting

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	60-119	3	41%	
	>119	11	73%	
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	≥ 150	72	44%	
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	Yes	64	23%	
Anesthesia (breast surgery cases only)	General anesthesia	15	40%	0.05
	Local anesthesia	10	0%	

PONV = postoperative nausea and/or vomiting.

^a Cumulative fentanyl = pre-/intraoperative fentanyl plus recovery fentanyl dose.

2/3- Diminuer au maximum consommation morphinique

Ketamine IV perop : 0.15 µg/kg
0.5µg/kg + 10 µg kg⁻¹min

Menigaux Anest Analg 2001;93:472-6 **G**
Loftus. Anesthesiology 2010;113:639-646

« Intraoperative Ketamine Reduces Perioperative Opiate Consumption in Opiate-dependent Patients with Chronic Back Pain Undergoing Back Surgery..... and pain intensity throughout the postoperative period in this patient population.
This benefit is without an increase in side effects.

Dexamethazone IV H-1 preop : 8mg 15mg Bisgaard. Annals of Surgery. 2003;238:651-660 **V**
Antimétique ! Jokela. Anesth Analg. 2009;109:607-15 **H**

3- initialiser l' analgésie dès la période pré ou per opératoire

➤ Antalgiques de « premier rang » : Cf.

- **Prémédication analgésique P.os** (intervention courte durée)
- **Per opératoire IV.**

AINS
Paracétamol
Kétamine
Dexamethazone

➤ Anesthésiques Locaux

- **Pré opératoire**

ALR et/ou infiltration

Spencer S. Liu, MD*, Wyndam M. Strodbeck, MD*, Jeffrey M. Richman, MD†, Christopher L. Wu, MD†

Departments of Anesthesiology, *Virginia Mason Medical Center and the University of Washington, Seattle, Washington; †Department of Anesthesiology and Critical Care Medicine, The Johns Hopkins University, Baltimore, Maryland

Table 3. Effects of Central Neuraxial Block Versus General Anesthesia on Ambulatory Surgical Patients

Outcome	n	Number of trials	Central neuraxial block* (mean)	General anesthesia* (mean)	OR or WMD** (95% confidence interval)	P value
Anesthesia induction time (min)	384	7	17.8	7.8	8.1 (4.1 to 12.1)	0.0001
PACU time (min)	476	10	56.1	51.9	0.42 (-7.1 to 7.9)	0.91
VAS in PACU (mm)	563	7	12.7	24.4	-9 (-15.5 to -2.6)	0.006
Nausea	637	12	5%	14.7%	0.40 (0.15 to 1.06)	0.06
Phase 1 bypass	218	4	30.8%	13.5%	5.1 (0.6 to 53.6)	0.15
Need for postoperative analgesics	716	11	31%	56%	0.32 (0.18 to 0.57)	0.0001
Time until discharge from ASU (min)	839	14	190	153	34.6 (13 to 56.1)	0.002
Excellent patient satisfaction	709	11	81%	78%	1.5 (0.8-23.1)	0.45

OR = odds ratio; WMD = weighted mean difference; * weighted by subject number; ** weighted by inverse variance; PACU = postanesthesia care unit; ASU = ambulatory surgical unit; POD = postoperative day; VAS = visual analogue scale. 15 randomized controlled trials with 1003 patients were included for meta-analyses.

Table 4. Effects of Peripheral Nerve Block Versus General Anesthesia on Ambulatory Surgical Patients

Outcome	n	Number of trials	Peripheral nerve block* (mean)	General anesthesia* (mean)	OR or WMD** (95% confidence interval)	P value
Anesthesia induction time (min)	329	6	19.6	8.8	8.1 (2.6 to 13.7)	0.0001
PACU time (min)	308	6	45.2	72	-24.3 (-36.3 to -12)	0.0001
VAS in PACU (mm)	359	7	9.6	35.8	-24.5 (-35.7 to -13.3)	0.0001
Nausea	319	6	6.8%	30%	0.17 (0.08 to 0.33)	0.0001
Phase 1 bypass	329	6	81%	315	14.3 (7.5 to 27.4)	0.0001
Need for postoperative analgesics	259	6	6.2%	42.3%	0.11 (0.03 to 0.43)	0.001
Time until discharge from ASU (min)	328	6	133.3	159.1	-29.7 (-75.3 to 15.8)	0.2
Excellent patient satisfaction	158	4	88%	72%	4.7 (1.8 to 12)	0.001

OR = odds ratio; WMD = weighted mean difference; * weighted by subject number; ** weighted by inverse variance; PACU = Postanesthesia care unit; ASU = ambulatory surgical unit; POD = postoperative day; VAS = visual analogue scale. 7 randomized controlled trials with 359 patients were included for meta-analysis.

ALR

❖ BLOCS PÉRIPHÉRIQUES

Membres

❖ RACHIANESTHÉSIE UNILATERALE

Membre inférieur



Bupivaciane Hyperbare = 5 mg
± Sufentanil = 2.5 à 5 mcg

❖ SADDLE BLOCK BLOC PUDENDAL

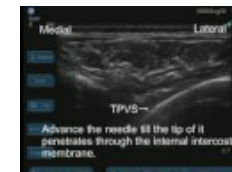
Proctologie Chirurgie périnée



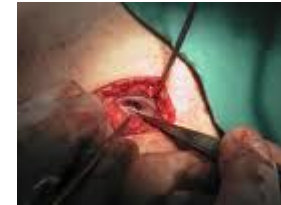
~~Morphine~~



❖ BLOC PARA VERTÉBRAL Sein



INFILTRATIONS



❖ **CICATRICIELLES** Hernie, sein, orthopédie (épaule), rein,...

❖ **SOUS CUTANÉES** Chir. Plastique (visage,, liposuction,..)



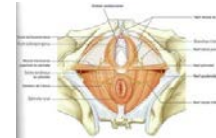
❖ **PLANS PROFONDS**

-Abdominaux : **TAP bloc bloc ilio inguinal et hypogastrique**
Hernie / Chir.sous ombilicale.



Bloc grands droits Chir.peri ombilicale.

-Périnéaux : Chir. Proctologique/ périnéale



❖ **INTRA ARTICULAIRE** Arthroscopie du genou



⚠ KT ~~E~~paule

❖ **INTRAPERITONEALE** Coelioscopie (vésicule....)



RELAIS!

ALR vs AG

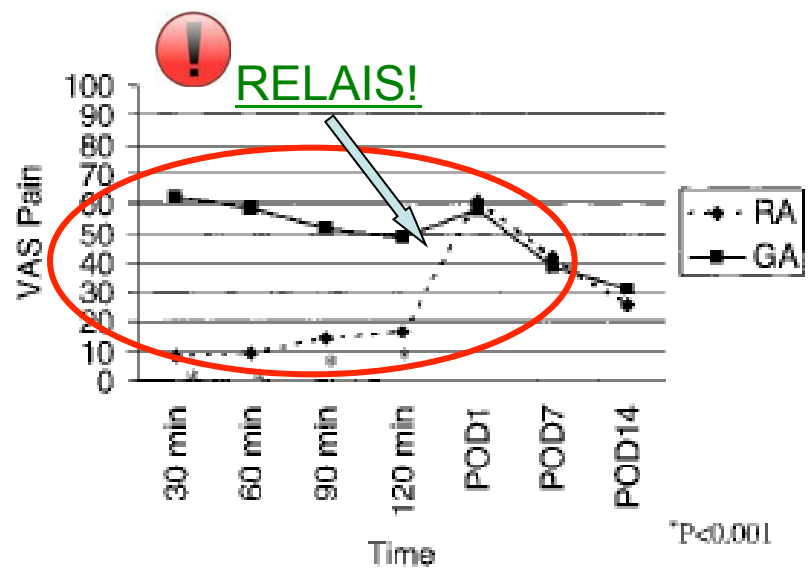
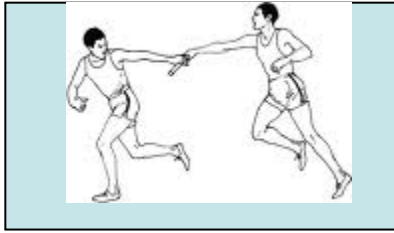


Table 2. Postoperative Analgesic Consumption and Adverse Effects

	RA Group (n = 50)	GA Group (n = 50)	Significance, P Value
Time to first analgesic request, min*	97.6 (50.2)	29.9 (22.8)	< 0.001
Intravenous fentanyl in PACU, μ g*	7 (22)	77.5 (50.3)	< 0.001
Oral morphine equivalent in PACU and DSU, mg*	7.3 (15.2)	22.8 (18.1)	< 0.01
Nausea and vomiting in PACU/DSU, No. of patients	3†	12	< 0.05
Analgesic consumption POD 1, mg oral morphine*	42.1 (35.1)	53.3 (47.9)	0.2
Analgesic consumption POD 7, mg oral morphine*	20.6 (31.4)	21.5 (43.3)	0.9
Analgesic consumption POD 14, mg oral morphine*	13.2 (22.3)	12.3 (26.5)	0.9

* Data presented as mean (SD). † Two patients received general anesthesia (GA) for regional block failure.
 DSU = day surgery unit; PACU = postanesthesia care unit; POD = postoperative day; RA = regional anesthesia.

Et le RELAIS !



après l' ALR



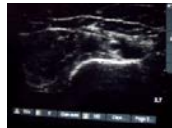
ANTICIPER Levée brutale bloc/ infiltration..... à domicile

Trois Possibilités:

❖ Relais antalgique PER OS 1^{er} niveau +/- 2^{ème} niveau
(inconvenients potentiels)



❖ Bolus analgésique



❖ Cathéter -Plexique ou Tronculaire



-Cicatriciel



RELAIS



Continuous peripheral nerve block in acute pain management

Chelly JE. BrJ Anaesth 2010;105:86-96

« The *indications* for continuous nerve blocks for the perioperative pain management in hospitalized and ***ambulatory*** patients have extended well ***beyond orthopaedics***. These techniques are not only used to control pain in patients undergoing major ***upper and lower extremity surgery***, but also to provide perioperative analgesia in patients undergoing ***abdominal, plastic, urological, gynaecological, thoracic, and trauma surgeries***.... Continuous nerve blocks have proved ***safe and effective in reducing opioid consumption*** and ***related side-effects***, accelerating recovery, and in many patients reducing the length of hospital stay »

RELAIS



Use of catheters in the postoperative patient.

Swenson JD Orthopedics. 2010;33:20-2.

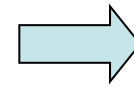
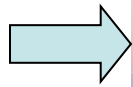
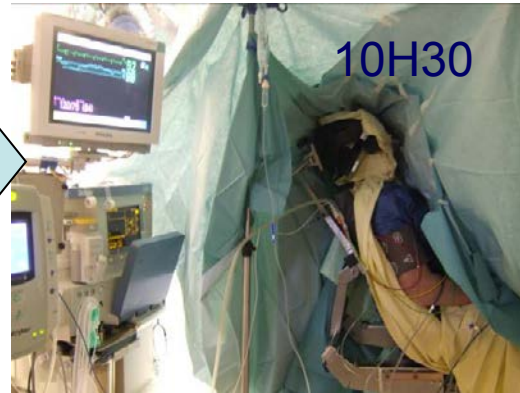
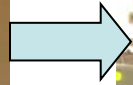
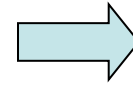
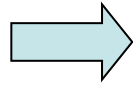
«**Techniques** for continuous peripheral nerve block have **advanced significantly in the past decade**, particularly as a result of affordable, high-resolution **ultrasound equipment** that permits rapid and successful administration and results in reduced procedure-related pain, Because of its **safety and efficacy**, continuous peripheral nerve block has broad application in **ambulatory** »



Ambulatory anesthesia and regional catheters: when and how.

Swenson Anesthesiol Clin. 2010 Jun;28(2):267-80

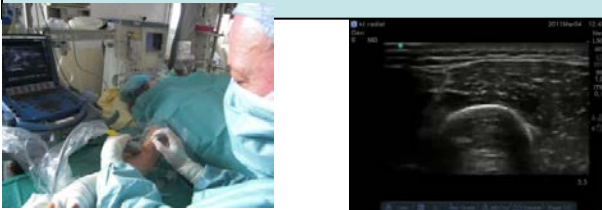
KT analgésique BIS en Ambulatoire pour chirurgie épaule



Blocs analgésiques sélectifs sous échographie

Cathéters distaux analgésiques

Prise en charge DPO
+ **intense** et + **longue**
AVEC motricité conservée



KT Radial analgésique

Rhizarthrose : 50% D sévère > J1
Vial F et al Ann Fr Anesth Rean 2000



Bloc anesthésique Axillaire

AL courte durée d' action : Lidocaïne 1,5% adré

Bloc analgésique nerf radial :

AL longue durée d' action: Ropivacaine 0,2 %

Bolus 10ml et/ou Débit 2ml/h pendant 36-48h



RFE Anesthésie en Ambulatoire 2009

de l'Analgésie

- R31.** Mettre en place une **stratégie multimodale** prise en charge DPO y compris au lieu de **résidence** : information, prévention, traitement et évaluation
- S 32.** **Ordonnances d'antalgiques** remises au patient **dès CS préopératoire**
- R33.** Ordonnances d'antalgiques précisent **horaires** de prise **systematique** et conditions de **recours aux antalgiques de niveau plus élevé** si nécessaire.
- S34.** Les modalités de gestion et de prise des analgésiques de « secours » sont expliquées **dès CS préopératoire**
- S35.** Souhaitable d'utiliser **infiltrations** et **blocs périphériques** seuls ou en complément d'une autre technique d'anesthésie
- R36.** Formaliser **organisation suivi analgésie par Kt périmerveux** au domicile
- R37.** Prescrire **tout moyen non médicamenteux** permettant de réduire la DPO (application de froid, posture antalgique,...).



FUTUR ?

~~Cathéter~~



Anesthésiques Locaux de très longue durée d'action : 48h!!!

❖ Extended-duration analgesia: update on microspheres and liposomes

Rose JS et al. Reg Anesth Pain Med.2005

❖ Long –lasting infiltration anaesthesia by lidocaine-loaded biodegradable nanoparticles in hydrogel in rats

Wu L et al. Acta Anaesthesiol Scand.2009

❖ Prolonged suppression of postincisional pain by a slow-release formulation of Lidocaine

Wang, Chi-Fei et al. Anesthesiology. January 2011; 114(1):135-149,

Conclusions

❖ **CONTROLLER** DPO / minimum effets secondaires

Épargne morphinique

Prise en charge Multimodale

❖ **ANTICIPER**

Intensité et durée DPO

Initialisation du traitement

Relais et les traitement de secours

❖ Utilisation Large **AINS** et **AL**

❖ **EVALUER**



Appel J+1



Anesthésiques
Locaux