Anesthésie locorégionale vigile : possible en pédiatrie ?

Dr Sonia Delaporte Cerceau
Hôpital Armand Trousseau
GH SU – APHP Paris

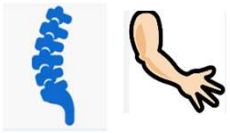
Quelles ALR en pédiatrie ?

ADARPEF

1996

85412 procédures

71,5% 28,5%



61,5% 38,5%

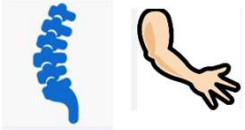
Technique	0–30 days premature	0–30 days full-term	1–6 mo premature	1–6 mo full-term	6 mo–3 yr	3–12 yr	>12 yr	Total Blocks	Total %[a]
Central blocks	143	363	625	1849	5073	6118	842	15,013	61.5%
Caudals	108	300	407	1536	4610	4978	172	12,111	49.6%
Spinals	30	25	188	137	50	18	58	506	2.1%

ADARPEF

2010

104612 procédures

70,2% 29,7%



34 % 66 %

Technique	*0–30 days premature* n = 121	*0–30 days full-term* n = 475	*1–6 months premature* n = 822	*1–6 months full-term* n = 2442	*6 months to 3 years* n = 10 499	*3–12 years* n = 12 974	*>12 years* n = 3799	*Total blocks*	%
Caudals	76	187	402	951	4141	2699	37	8493	27.2
Spinals	9	9	38	40	43	60	188	387	1.3

2012

100000 ALR

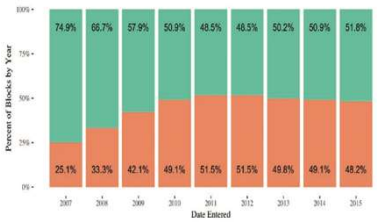
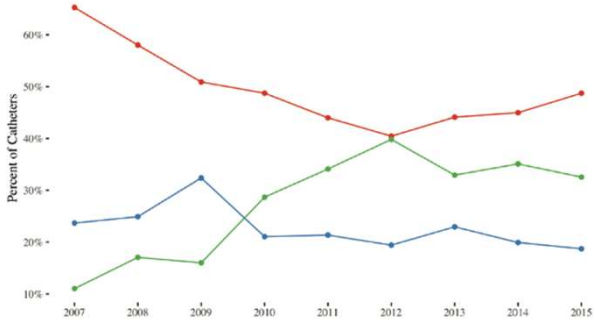


Table 1. Single-injection Blocks by Age Group

	Neonate	1–5 months	6–11 months	1–2 yr	3–9 yr	≥ 10 yr	Total
Total	705	7,385	12,595	16,738	20,974	27,931	86,328
	0,8%	8,5%	14%	19%	24%	32%	



Evolution des ALR centrales

	Neonate	1–5 months	6–11 months	1–2 yr	3–9 yr	≥ 10 yr	Total
Total	705	7,385	12,595	16,738	20,974	27,931	86,328
Neuraxial							
Caudal	520	5,830	10,918	12,989	7,515	544	38,116
Lumbar epidural	2	20	29	49	203	373	676
Sacral intervertebral	0	5	4	4	3	0	16
Subarachnoid	19	201	18	41	185	1,570	2,034
Thoracic epidural	3	12	6	16	37	86	162
Upper extremity							
Axillary	23	76	59	162	292	369	981
Infraclavicular	0	0	12	74	202	523	811
Interscalene	0	2	1	9	67	905	984
Supraclavicular	0	3	35	288	1,105	1,429	2,860
Other	0	0	3	10	9	39	61
Lower extremity							
AC/saphenous	0	1	2	36	509	2,196	2,744
Femoral	4	21	26	197	1,256	7,482	8,986
Lumbar plexus	0	0	0	14	63	197	274
Popliteal	0	2	23	82	611	2,211	2,929
Sciatic	0	9	12	61	570	2,611	3,263
Other	0	5	26	137	714	1,559	2,441
Truncal							
TI/IH	5	100	154	468	2,170	1,133	4,030
Intercostal	2	9	36	41	106	113	307
Paravertebral	19	55	27	57	112	265	535
Penile	1	434	510	604	879	391	2,819
Rectus sheath	10	113	107	344	1,280	584	2,438
TAP	92	352	248	579	2,033	2,326	5,630
Other	0	1	27	29	99	100	256
Head and neck							
Infraorbital	0	276	125	76	165	133	775
Maxillary/greater palatine	0	4	35	26	31	3	99
Superficial cervical plexus	3	10	58	178	520	448	1,217
Other	2	41	83	147	191	241	705
Other	0	3	7	19	44	93	166

ALR chez l'enfant

Complications in Pediatric Regional Anesthesia: An Analysis of More than 100,000 Blocks from the Pediatric Regional Anesthesia Network

Benjamin J Walker [1], Justin B Long, Madhankumar Sathyamoorthy, Jennifer Birstler, Christine Wolf,

Pediatric Regional Anesthesia Network Investigators

ANESTHESIOLOGY 2018

Table 1. Single-injection Blocks by Age Group

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Femoral	4	21	26	197	1,256	7,482	8,986
TAP	92	352	248	579	2,033	2,326	5,630

Complications
Atteinte neurologique: 2,4/10000
Accidents toxicité AL : 0,76/10000

Table 5. Characteristics of Severe Local Anesthetic Systemic Toxicity Cases

Age	Block	Sedation	Technology	Local Anesthetic	Test Dose	Symptoms	Lipid Emulsion
1 month	Caudal	GA	Landmarks	1.5 mg/kg R	Yes	Seizure	No
2 months	Thor epid catheter	GA	Ultrasound	1.3 mg/kg B	Yes	Cardiac arrest	Yes
2 months	Subarachnoid	Awake	Landmarks	0.75 mg/kg B	Unknown	Cardiac arrest	Yes
3 months	Caudal	GA	Landmarks	2.5 mg/kg B	Yes	Cardiac arrest	Unknown
9 months	Paravertebral catheter	GA	Ultrasound	30 mg/kg CP	No	Seizure	No
3 yr	Caudal	GA	Landmarks	1.1 mg/kg B	Yes	Cardiac arrest	No
13 yr	Infraclavicular	Sedated	Ultrasound	1.28 mg/kg B	No	Seizure	Yes

B, bupivacaine, CP, chloroprocaine; GA, general anesthesia; R, ropivacaine; Thor epid, thoracic epidural.

Table 4. Neurologic Complications by Age Group (N = 104,393 Blocks)

Age Group	Cases	Blocks	Incidence	95% CI
Neonate	0	1,058	0:10,000	0–43.7
1–5 months	0	8,465	0:10,000	0–5.5
6–11 months	0	13,505	0:10,000	0–3.4
1–2 yr	0	18,751	0:10,000	0.02–4
3–9 yr	3	25,742	1.2:10,000	0.2–3.6
≥10 yr	27	36,872	7.3:10,000*	5–10.7

*$P < 0.01$. Cases total more than 25 because 4 patients received multiple blocks (3 patients received 2 blocks, and 1 patient received 3 blocks).

Aucune complication à long terme

Quelles ALR en pédiatrie : Comment ?

Epidemiology and morbidity of regional anesthesia in children: a one-year prospective survey of the French-Language Society of Pediatric Anesthesiologists

E Giaufré [1], B Dalens, A Gombert

1996 — 24409 procédures — **89% AG**

Epidemiology and morbidity of regional anesthesia in children: a follow-up one-year prospective survey of the French-Language Society of Paediatric Anaesthesiologists (ADARPEF)

2012 — 31132 procédures — **95,9% AG**

Epidemiology of regional anesthesia in children: Lessons learned from the European Multi-Institutional Study APRICOT

Christophe Dadure [1 2], Francis Veyckemans [3], Sophie Bringuier [4], Walid Habre [5]

2019 — 4377 procédures — **94,3% AG**

>> 90% AG

Pediatric Regional Anesthesia Network (PRAN): a multi-institutional study of the use and incidence of complications of pediatric regional anesthesia

David M Polaner [1], Andreas H Taenzer, Benjamin J Walker, Adrian Bosenberg, Elliot J Krane, Santhanam Suresh, Christine Wolf, Lynn D Martin

2012 — 14917 procédures — **95% AG**

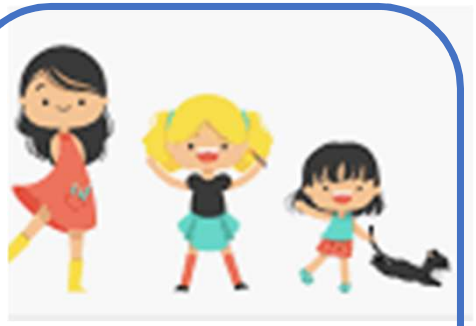
Complications in Pediatric Regional Anesthesia: An Analysis of More than 100,000 Blocks from the Pediatric Regional Anesthesia Network

Benjamin J Walker [1], Justin B Long, Madhankumar Sathyamoorthy, Jennifer Birstler, Christine Wolf, Pediatric Regional Anesthesia Network Investigators

2018 — 104393 procédures — **93,7% AG**

Pourquoi ?

J'ai l'habitude de l'AG
ALR + AG on cumule les risques
Plus simple
Plus facile à expliquer
L'enfant ne bouge pas si je fais une ALR sous AG
De toutes façons il aura besoin d'antalgiques



Trop petit
Trop peur
Trop long

C'est un enfant trop sensible, trop remuant, trop stressé..
Moi je n'ai pas supporté
Moi cela me fait peur
je préfère qu'il ne voie rien

ALR sous AG un problème ?

ADARPEF

Epidemiology and morbidity of regional anesthesia in children: a one-year prospective survey of the French-Language Society of Pediatric Anesthesiologists

E Giaufré [1], B Dalens, A Gombert

1996

24409 ALR /89% AG

COMPLICATIONS

Total : 0,9/1000 blocs
1,5 /1000 blocs centraux
0/1000 blocs périphériques

The National Pediatric Epidural Audit

N. LLEWELLYN, RN, RSCN, BA* AND A. MORIARTY FRCA†

Pediatric Anesthesia 2007

10633 péridurales
99% AG

COMPLICATIONS

96 incidents

Grade 1: 1/2000
Grade 2 : 1/1100
Long terme 1/10000

ADARPEF

Epidemiology and morbidity of regional anesthesia in children: a follow-up one-year prospective survey of the French-Language Society of Paediatric Anaesthesiologists (ADARPEF)

CLAUDE ECOFFEY MD, FRÉDÉRIC LACROIX MD, ELISABETH GIAUFRÉ MD, GILLES ORLIAGUET MD,

Paediatr Anaesth. 2010

29870 ALR sous AG
1262 ALR sans AG

COMPLICATIONS

Taux de complication: 0,12%
O séquelle

6x 

Asleep versus awake: does it matter?: Pediatric regional block complications by patient state: a report from the Pediatric Regional Anesthesia Network

Andreas H Taenzer [1], Benjamin J Walker, Adrian T Bosenberg, Lynn Martin, Santhanam Suresh,

Reg Anesth Pain Med. 2014 .

50000 blocs

COMPLICATIONS

Taux de complications
0,93/1000 groupe AG.
6,82/ 1000 sans AG

Tox systémique >

Review > Reg Anesth Pain Med. 2015 Sep-Oct;40(5):526-32.
doi: 10.1097/AAP.0000000000000280.

The European Society of Regional Anaesthesia and Pain Therapy and the American Society of Regional Anesthesia and Pain Medicine Joint Committee Practice Advisory on Controversial Topics in Pediatric Regional Anesthesia

Giorgio Ivani [1], Santhanam Suresh, Claude Ecoffey, Adrian Bosenberg, Per-Anne Lonnqvist, Elliot Krane, Francis Veyckemans, David M Polaner, Marc Van de Velde, Joseph M Neal

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Recommandations Formalisées d'Experts
Anesthésie loco – régionale en pédiatrie

ADARPEF

Pour le confort des patients et pour la sécurité du geste, il faut privilégier l'association ALR/AG préalable chez les jeunes enfants. Chez les enfants plus grands, il est possible de réaliser une ALR sans AG associée.

The European society of regional anesthesia and pain therapy and the American society of regional anesthesia and pain medicine joint committee practice advisory on controversial topics in pediatric regional anesthesia I and II: what do they tell us?

Per-Arne Lönnqvist [1], Claude Ecoffey, Adrian Bosenberg, Santhanam Suresh, Giorgio Ivani

Mais aussi …

Apnea after awake-regional and general anesthesia in infants: The General Anesthesia compared to Spinal anesthesia (GAS) study: comparing apnea and neurodevelopmental outcomes, a randomized controlled trial *Anesthesiology*. 2015 July

Andrew J. Davidson, MD[1,2,3], Neil S. Morton, MD FRCA[4,5], Sarah J. Arnup, MBiostat[6],

722 enfants : 394 BB prémas/325 BB à terme
< 60 SA ; chirurgie HI
361 RA /358 AG

Apnées 3% (10 RA/ 15 AG)
1er FDR: Prématurité

Proportion of children with apnea related outcomes in each group.

Outcome	Intention to treat - RA N=355	Intention to treat – GA N=356
Any apnea (0–12hr)	10 (3%)	15 (4%)
Any early apnea (0–30min)	3 (1%)	12 (3%)
Any late apnea (30min–12hr)	8 (2%)	7 (2%)

Incidence of severe critical events in paediatric anaesthesia (APRICOT): a prospective multicentre observational study in 261 hospitals in Europe

Walid Habre, Nicola Disma, Katalin Virag, Karin Becke, Tom G Hansen, Martin Jöhr, Brigitte Leva, Neil S Morton, Petronella M Vermeulen, Marzena Zielinska, Krisztina Boda, Francis Veyckemans, for the APRICOT Group of the European Society of Anaesthesiology Clinical Trial Network*

Etude sur 1an, 30874 enfants
Moyenne d'âge 6,3 ans

Respiratoires 3,1%
Hémodynamiques 1,9%
Incidents per opératoires sévères **5,2%**

Laryngospasm (n=368) | Bronchospasm (n=371) | Bronchial aspiration (n=29) | Stridor (n=208)

Severe cardiovascular events (n=549)

Drug errors (n=49)

C

Differences in Blood Pressure in Infants After General Anesthesia Compared to Awake Regional Anesthesia (GAS Study—A Prospective Randomized Trial)

M. E. McCann, MD, MPH,* D. E. Withington, BM,†‡ S. J. Arnup, M.Biostat.,§ A. J. Davidson, MD,‖¶#
N. Disma, MD,** G. Frawley, MBBS,‖¶# N. S. Morton, MD, FRCA,††‡‡ G. Bell, MB, ChB,‡‡
R. W. Hunt, PhD,#§§‖‖ D. C. Bellinger, PhD,¶¶##*** D. M. Polaner, MD,††† A. Leo, MD,‡‡‡
A. R. Absalom, MD,§§§ B. S. von Ungern-Sternberg, MD, PhD,‖‖‖¶¶¶ F. Izzo, MD,###
P. Szmuk, MD,****†††† V. Young, RN,* S. G. Soriano, MD,* and J. C. de Graaff, MD,‡‡‡‡§§§§‖‖‖‖‖‖
The GAS Consortium

722 enfants < 60 AC
Chirurgie HI
Groupe AG vs RA
Hypotension à partir de TAm < 45 mmHg
Hypotension significative TAm <35mmhg

Groupe AG: 87% et 49%
Groupe RA : 41% et 16%

Outcome by Frequency and by Time Period	GA (355)	RA (354)
Number of epochs of hypotension < 35 mm Hg		
Any epoch < 35 mm Hg	49% (175)	16% (56)
0	51% (180)	84% (298)
1–4	26% (93)	11% (39)
5–9	15% (54)	3% (12)
10–15	7% (25)	1% (3)
15–19	1% (3)	0% (1)
20 or >	0% (0)	0% (1)
Number of epochs of hypotension < 45 mm Hg		
Any epoch <45 mm Hg	87% (309)	41% (145)
0	13% (46)	59% (209)
1–4	20% (72)	22% (79)
5–9	36% (128)	14% (49)
10–14	23% (82)	4% (13)
15–19	6% (20)	1% (2)
20 or >	2% (7)	1% (2)

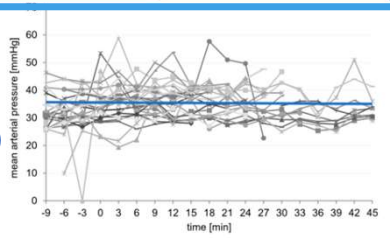
Effects of awake caudal anesthesia on mean arterial blood pressure in very low birthweight infants

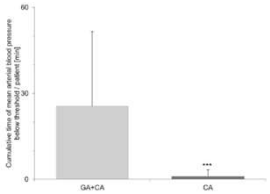
: *Anesthesiology* (2020) 20:175

Frank Fideler[1*], Michael Walker[2] and Christian Grasshoff[1]

42 nouveaux nés (pds 1-1,5kg) HI :
groupe caudale + AG : 26 patients
groupe caudale seule : 16 patients

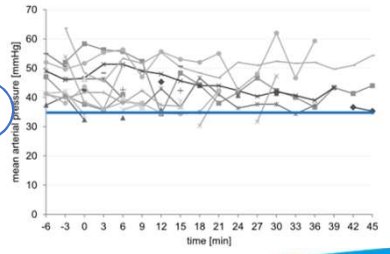
A +C

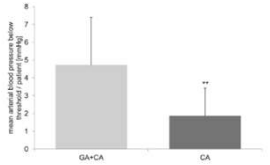


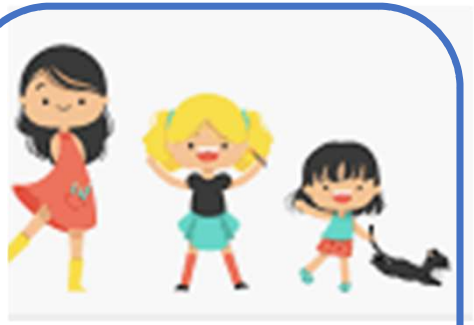


Mesures < Tam critique:
3% mesures groupe C
47 % mesures groupe A+ C

C







Trop petit ?
Trop peur ?
Trop long ?

Le nouveau-né: Caudale ou Rachianesthésie ??

La Caudale

Are Caudal Blocks for Pain Control Safe in Children? An Analysis of 18,650 Caudal Blocks from the Pediatric Regional Anesthesia Network (PRAN) Database 2015

Santhanam Suresh, MD,* Justin Long, MD,* Patrick K. Birmingham, MD,* and Gildasio S. De Oliveira, Jr, MD, MSCI†

Table 2. Incidence of Specific Complications in Caudal Block

	Incidence (95% confidence interval)
Block failure	1% (0.8 to 1.1)
Blood aspiration	0.6% (0.5 to 0.8)
Positive test dose	0.1% (0.1 to 0.2)
Dural puncture	0.08% (0.005 to 0.01)
Cardiac arrest	0.005% (– to 0.002)
Seizure	0.005% (– to 0.002)
Sacral pain	0.005% (– to 0.002)
Muscle spasm	0.005% (– to 0.002)

Eveillé= 0,5% Sédation 1,5%

The success rate and complications of awake caudal epidural bupivacaine alone or in combination with intravenous midazolam and ketamine in pre-term infants 2015

Mahin Seyedhejazi[1], Majed Mashhoori[1], Rasoul Azarfarin[2], Daryoush Shekhzadeh[1], Nasrin Taghizadieh[1]

90 enfants <3 mois , <5 kg
Caudale seule : C
Caudale + sédation: C+S (2)
C+S 93,2% succès vs C 80%

Confirmation of success rate of landmark-based caudal blockade in children using ultrasound: A prospective analysis 2020

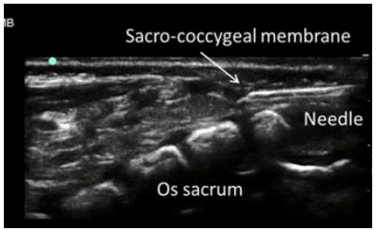
Karen R Boretsky [1], Carlos Camelo [1 2], David B Waisel [1 2], Veronique Falciola [1 3],

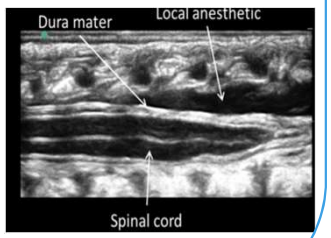
Aiguille bien positionnée : 80% cas

Real-Time Ultrasound Improves Accuracy of Caudal Block in Children 2008

Adam C Adler [1], Craig A Belon [1], Danielle M Guffey [2], Charles G Minard [2], Nihar V Patel [1],

109 caudales
78,9 % aiguille bien placée
21,1% mal evalué





Caudale ou Rachianesthésie ??

La Rachianesthésie

Predictors of failure of awake regional anesthesia for neonatal hernia repair: data from the General Anesthesia compared to Spinal anesthesia (GAS) study: comparing apnoea and neurodevelopmental outcomes

Geoff Frawley, MBBS,[1,2,3] Graham Bell, MB, ChB,[4] Nicola Disma, MD,[5] Davinia E. Withington, BM,[6,7] Jurgen C. de Graaff, PhD,[8] Neil S. Morton, MD,[4,9] Mary Ellen McCann, MD,[10] Sarah J. Arnup, MBiostat,[11] Oliver Bagshaw, MB, ChB, FRCA, FFICM,[12] Andrea Wolfler, MD,[13] David Bellinger, PhD,[14] Andrew J. Davidson, MD,[1,2,3] and the GAS Consortium

722 enfants <60 SPC
339 groupe Rachi
Rachi : 83,2 % succès
Echec 10% (AG)
Bloc en sus: 15%
6,8 % sédation
Echec>> inexpérience opérateur
Durée de la chirurgie

Spinal anesthesia in children: A review

Anju Gupta, Usha Saha[1]
Departments of Anesthesiology and Intensive Care, Delhi State Cancer Hospital, Dilshad Garden [1]LHMC and Associated Hospitals, New Delhi, India
Journal of Anaesthesiology Clinical Pharmacology | January-March 2014

4911 Rachianesthésies
Durée max 70 -80 mn
Echec entre 5 -15%
Rachi totale 0,6%

Pediatric Anesthesia

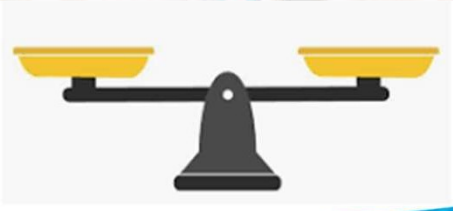
Comparison of awake spinal with awake caudal anesthesia in preterm and ex-preterm infants for herniotomy[1]

MARTIN HOELZLE MD, MARKUS WEISS MD, CLAUDIA DILLIER MD, ANDREAS GERBER MD

	Spinal	*Caudal*
Number of anesthetists involved (*n*)	14	28
Puncture attempts (*n*)	1.83 (1.08)	1.44 (0.71)*
Motor block (min)	148 (90)	104 (43)*
Isotonic fluid infused (ml)	60.6 (34.4)	58.9 (31.2)
Total spinal anesthesia	2.4%	0.5%
Need of supplementation	7.4%	6.0%
Need of general anesthesia	7.7%	3.9%

Data are mean (sd). *$P < 0.001$.

Caudale ou Rachianesthésie ??



Chacun son équipe…

Pediatric Anesthesia

Pediatric Anesthesia ISSN 1155-5645

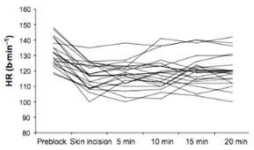
ORIGINAL ARTICLE

Management of hypertrophic pylorus stenosis with ultrasound guided single shot epidural anaesthesia – a retrospective analysis of 20 cases

Harald Willschke[1], Anette-Marie Machata[1], Winfried Rebhandl[2], Thomas Benkoe[2], Stephan C. Kettner[1], Lydia Brenner[1] & Peter Marhofer[1]

1 Department of Anaesthesia, Intensive Care Medicine and Pain Therapy, Medical University of Vienna, Vienna, Austria
2 Department of Surgery, Division of Paediatric Surgery, Medical University of Vienna, Vienna, Austria

Patient data	
Gender (m/f)	17/3
Age (months)	1.7 (1.5–4.0)
Weight (g)	3895 (1800–5000)
Duration of surgery (min)	25 (10–40)



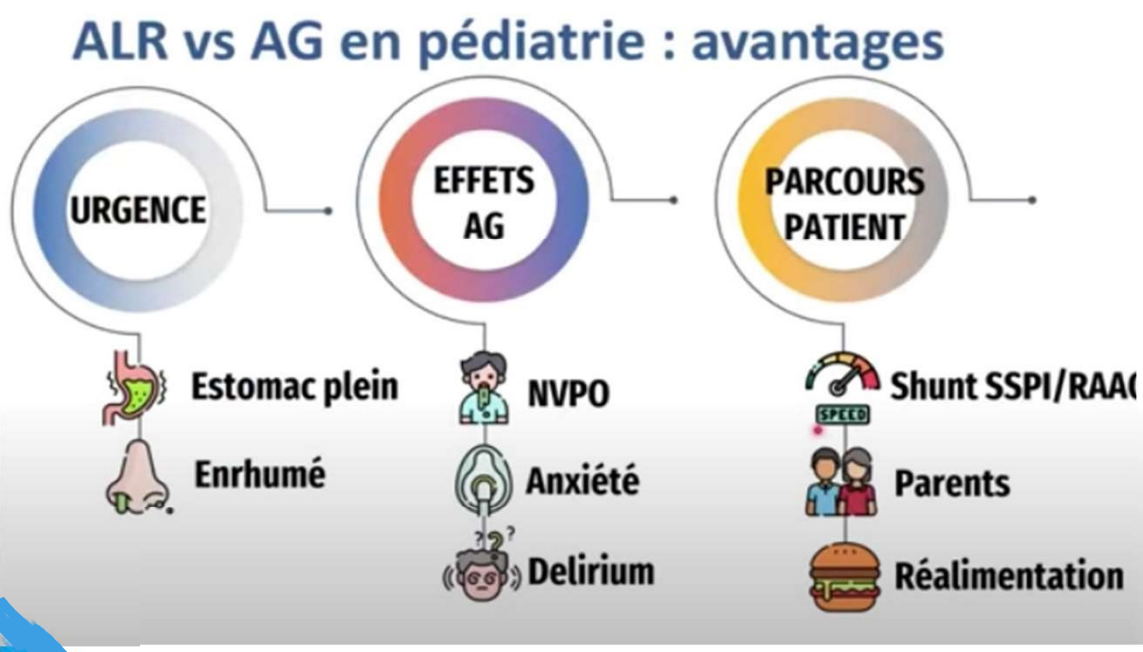
Sédation:Nalbuphine et propofol
Péridurale 0,75 ml/kg de Ropivacaine 0,475
100% enfants opérés
1 désaturation

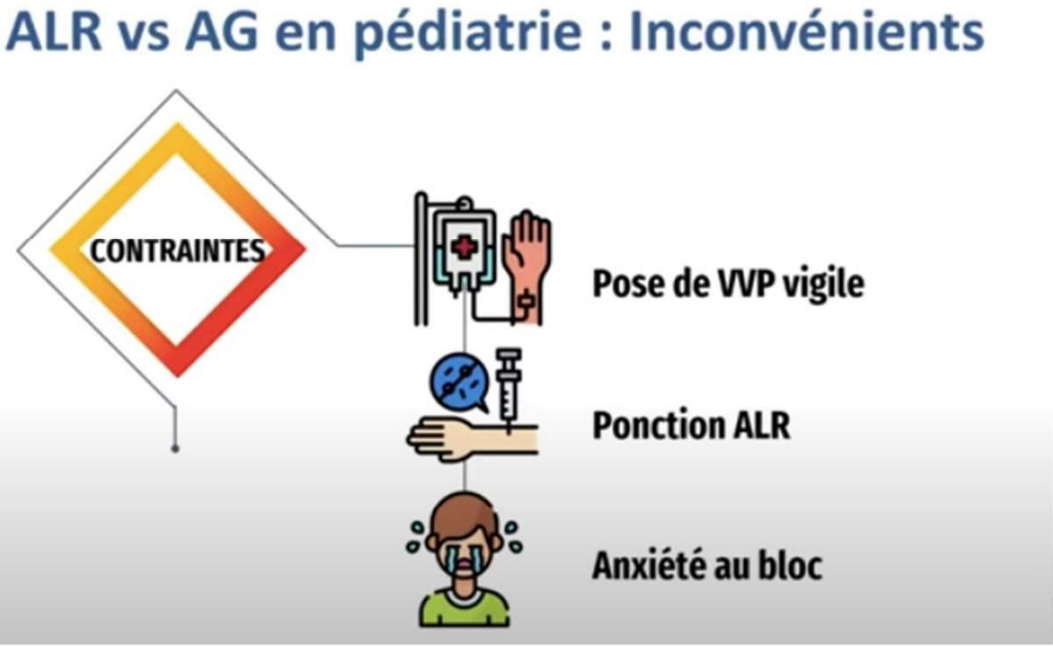
Pediatric Anesthesia

EDITORIAL

The potential future or just a way of trespassing the safety limits of pediatric regional anesthesia?

Et chez le plus grand…





Dans l'urgence …

La fracture du fémur ..

Bloc iliofascial en médecine préhospitalière pour les fractures du fémur

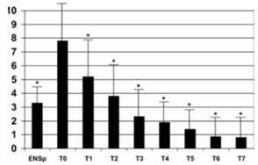
Fascia iliaca block for femoral bone fractures in prehospital medicine

C. Gozlan [a,*], V. Minville [a], K. Asehnoune [a], P. Raynal [b], P. Zetlaoui [a], D. Benhamou [a]

[a] *Département d'anesthésie et de réanimation, CHU de Bicêtre, 78, rue du Général-Leclerc, 94275 Le-Kremlin-Bicêtre, France*
[b] *Samu 91, centre hospitalier Sud-Francilien, Corbeil-Essonne, France*

Reçu le 11 septembre 2004 ; accepté le 21 mars 2005

52 Patients adultes
Fractures du fémur
Aucun échec
94% Succès complet



Cochrane Library

Cochrane Database of Systematic Reviews

Nerve blocks for initial pain management of femoral fractures in children (Review)

Black KJL, Bevan CA, Murphy NG, Howard JJ

1 seule étude: 55 enfants (16 mois- 15 ans)
Analgésie ALR vs Morphine
Efficacité idem
ALR: 15 % Douleur injection
MO: 21 % dépression respi / 14% NVPO
Echec 8% (ALR) vs 29% (M)

Emergency department use of a continuous femoral nerve block for pain relief for fractured femur in children

Briar Stewart, Catrin Tudur Smith, Linda Teebay, Mary Cunliffe, Boon Low

Emerg Med J 2007;**24**:113–114. doi: 10.1136/emj.2006.041335

40 enfants 1-16 ans (5 ans)
Pose de KT (2 échecs)
5 enfants 1 ou 2 doses de Morphine

Bloc fémoral en analgésie préhospitalière pour traumatisme du membre inférieur. Enquête de pratique observationnelle sur 107 cas

Prehospital analgesia with femoral nerve block following lower extremity injury. A 107 cases survey

T. Gros [c], E. Viel [b], J. Ripart [b,*], V. Delire [a], J.-J. Eledjam [a], M. Sebbane [a]

Annales Françaises d'Anesthésie et de Réanimation 31 (2012) 846–849

Pas assez pratiqué par non MAR : 10 échecs

Dans l'urgence …

Pour les traumatismes des 2, 3 4 eme doigts ..

Transthecal digital block: an underutilized technique in the ED

Archives of Emergency Medicine, 1993, **10**, 35–38

Raymond G. Hart MD, MPH[a,b,*], Francisco A.S. Fernandas MD[b], Joseph E. Kutz MD[c]

Technique sure -27 G- Efficace

Transthecal digital block

W. G. MORRISON American Journal of Emergency Medicine (2005) **23**, 340–342

Department of Accident and Emergency Medicine, Queen Alexandra Hospital, Cosham, Portsmouth.

46 patients 7-77 ans
Injection ds la gaine
1 échec
Efficacité en 3 mn

Dose Effectiveness of Transthecal Digital Block

Thanapong Waitayawinyu, MD, Seth D. Dodds, MD, Sunyarn Niempoog, MD

JHS • Vol 34A, March 2009

45 patients adultes
Volume ?
3ml > 2 ou 1 ml

Chez l'enfant: En sous cutané!

Le plus grand …Trop peur ?!

A Systematic Review of Randomized Controlled Trials Examining Psychological Interventions for Needle-related Procedural Pain and Distress in Children and Adolescents: An Abbreviated Cochrane Review*

Lindsay S. Uman,[1,2] Christine T. Chambers[1,2,3] Patrick J. McGrath,[1,2,3,4] and Stephen Kisely[4,5,6]
[1]Department of Psychology, Dalhousie University, [2]IWK Health Centre, [3]Department of Pediatrics, [4]Department of Psychiatry, [5]Department of Community Health & Epidemiology, Dalhousie University, and [6]School of Medicine, Griffith University, Australia

April 2, 2008

Méta-analyse de 28 études
1039 enfants de 2 à 19 ans
Toutes les techniques proposées
Toutes les procédures impliquant une ponction par aiguille
Evaluation douleur et «détresse» enfant et accompagnant

Efficacité de ces techniques évaluées moyenne 20%
EMLA : efficacité 20 – 50%

Table III. Efficacy of Psychological Interventions Assessed in Meta-analysis

Intervention	Douleur E	Angoisse	Accompagnant
Blowing out air	?	–	–
Combined CBT	?	?	✓
Distraction	✓	?	?
Distraction + suggestion	✓	–	–
Filmed modeling	–	–	–
Hypnosis	✓	✓	–
Memory alteration	?	?	–
Nurse coach + distraction	?	?	–
Parent coach + distraction	?	–	–
Parent positioning + distraction	?	–	✓
Providing information/preparation	?	✓	–
Suggestion	?	?	–
Videotaped modeling + parent coaching	–	–	–
Virtual reality	?	–	–

Le plus grand …Trop peur ?!

Systematic Review and Meta-Analysis of Distraction and Hypnosis for Needle-Related Pain and Distress in Children and Adolescents

Kathryn A. Birnie,[1,2] BA (Hons), Melanie Noel,[3] PhD, Jennifer A. Parker,[2] PhD,

Journal of Pediatric Psychology 39(8) pp. 783–808, 2014

Méta-analyse Comparaison des techniques de distraction et des techniques d'hypnose

Trés nombreux biais dans ces études

La distraction et l'hypnose sont efficaces dans la diminution de la douleur et l'angoisse à l'insertion de l'aiguille

Hypnose

7 études - 222 enfants (3 -16 ans)
Age: 8-12
Actes peut être plus douloureux
Opérateur dépendant donc limité
Suggestibilité enfant
Plus efficace si suggestions focus sur antalgie

Distraction

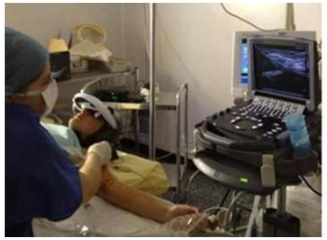
26 études - 2548 enfants (2- 19 ans)
Age 6-11
Peu d'influence
Degré implication adulte NS
Technologie distraction NS
Interactive passif NS
Voix enfant ou adulte NS

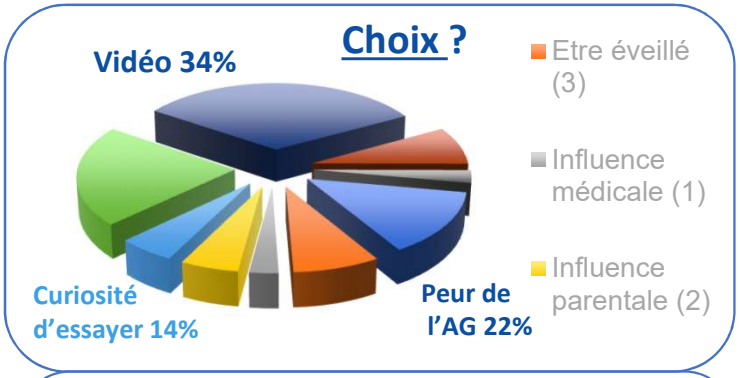
Mais chez les plus grands ..ALR périphérique : possible ??

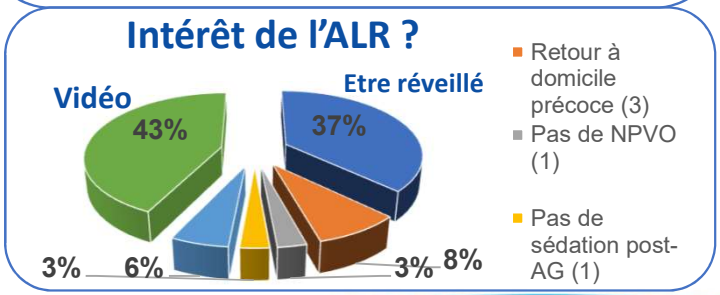
Peut-on réaliser une intervention chirurgicale sous ALR sans AG chez l'enfant ?
Intérêt de la technique de distraction par vidéo 3D
Etude Trousseau - Abstract ASA 2015

Etude prospective 38 enfants
Age >6 ans
Pose VVP
ALR
EVA /EVN Douleur /anxiété
82% MS
18% MI

Taux Satisfaction : 100%
A distance: 84% idem
4% Sans opinion
12% 4G douleur ALR, plaisir AG







chez les plus grands ..ALR périphérique : possible ??

Etude RATAPED 2022 – Abstract SFAR

Sujet : ALR anesthésique seule pour la chirurgie du membre supérieur en urgence chez l'enfant d'âge scolaire

FAISABILITE

Evaluer la faisabilité sous ALR pure, sans AG, ni sédation

Etude RATAPED

INCLUSION	NON INCLUSION
Chirurgie membre supérieur en urgence	Refus Enfant / Parents / Chirurgien
Âge 6-12 ans	Urgence Vitale
ASA 1-2	Durée Chirurgie > 1h30
	Contre-Indications ALR

RESULTATS

		SANS sédation n=81	AVEC Sédation n=16	p
mYPAS	Pendant l'ALR	**31.2**	**69.8**	<0.001
	À l'incision	28.5	32.2	0.24
	Durant chirurgie	28.5	32.0	0.22
EVA anxiété à l'incision (mm)		19.3	21.8	0.94

Satisfaction : Excellente

Aucun évènement indésirable

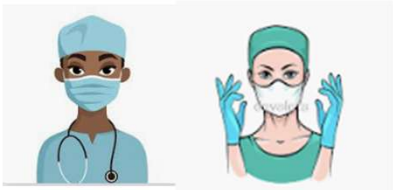
Modification du PHBQ J14 : 20 patients

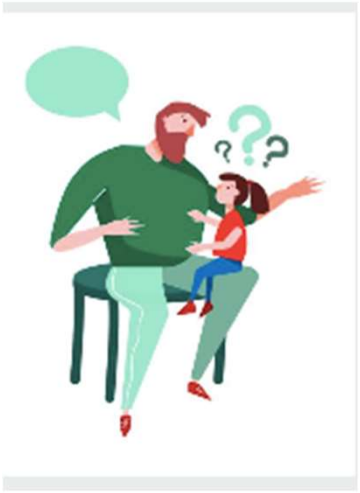
19 patients **1 patient**

Meilleure perception du monde médical pour 17 patients

Chez les plus grands ..ALR périphérique : possible !!

Le parcours patient : La clé!!





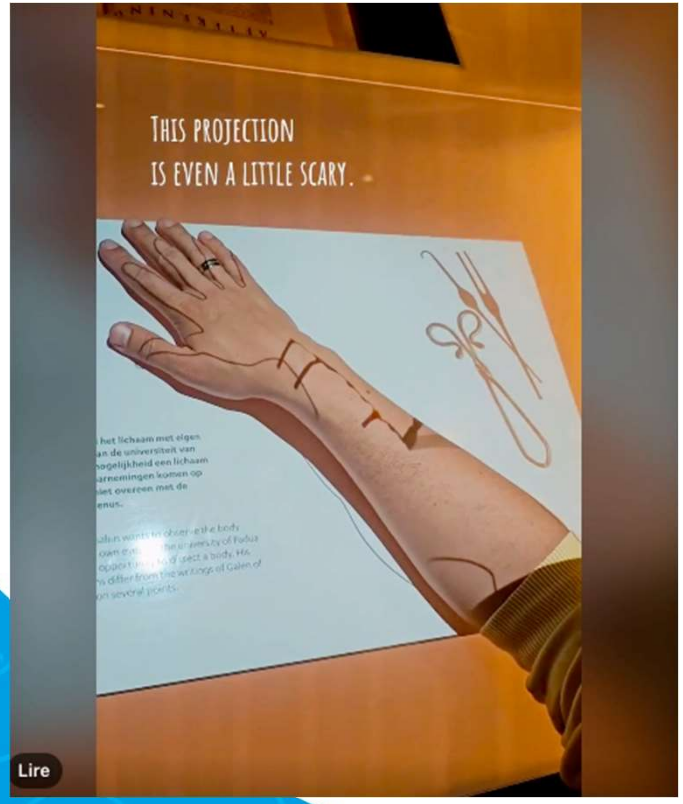
Prémédication

N20 ?

Anesthésie locorégionale vigile : possible en pédiatrie ?

ALR périphérique : Le parcours patient du futur

Information de l'enfant et sa famille



Arrivée au bloc accompagné par un robot

Au bloc opératoire de demain

Merci ..