September 20th, 2023 09:00 - 11:00

PARALLEL SESSION 4 - PHARMA 1

ID 89. Observational cohort study of opioid use in ventilated preterm infants and the association with evidence of brain injury

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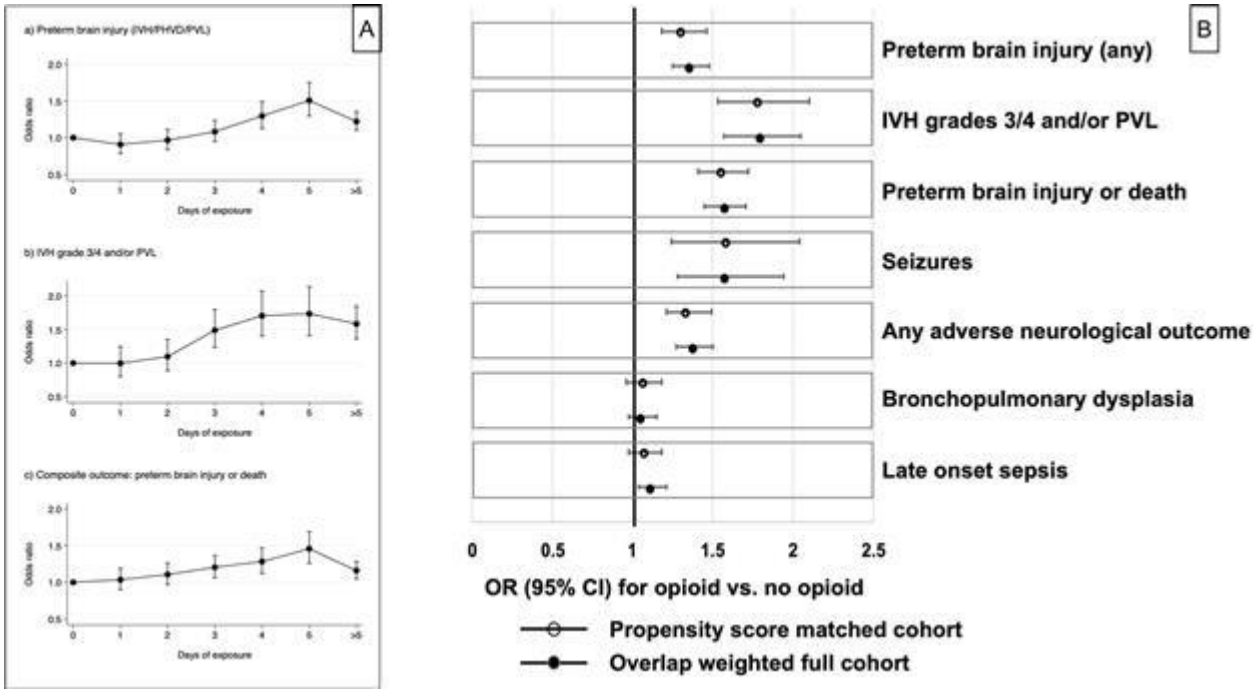
Background: Preterm infants often require mechanical ventilation (MV) which is a painful experience. Opioids such as morphine are used to provide analgesia despite conflicting evidence about their impact on the developing brain. We aimed to quantify the use of opioids during MV in infants born at <32 weeks' gestational age (GA), and to investigate the association between opioid use and evidence of brain injury.

Methods: Retrospective propensity score matched cohort study using routinely recorded data from the National Neonatal Research Database of infants admitted to neonatal units in England and Wales (2012–2020).

Results: 67% (45,254/67,279) of infants were mechanically ventilated for one or more days. Of these, 58% (26,250/45,254) received an opioid whilst ventilated. Opioids were given for a median of 67% of ventilated days (interquartile range (IQR) 43–92%) and the median (IQR) days of exposure was 4 (2–12). The percentage of mechanically ventilated infants who received opioids while ventilated increased from 52% in 2012 to 60% in 2020 (morphine, 51% to 56%; fentanyl, 6% to 18%).

In the propensity score matched cohort of 3,564 pairs who were ventilated for more than two consecutive days, accounting for differences in infants' characteristics including level of illness, the odds of any preterm brain injury (aOR=1.21, 95% CI 1.09 to 1.35), the most severe forms of brain injury, and the composite outcome of death or brain injury were higher in those who received opioids compared to those who did not (figure 1 B). The adjusted odds of these adverse outcomes increased with increasing number of days of opioid exposure (figure 1A).

Conclusion: Use of opioids during mechanical ventilation of preterm infants has increased. Among those ventilated for more than two consecutive days, opioid use is associated with an increased risk of preterm brain injury and the risk increases with longer durations of exposure.



Outcomes in ventilated infants born at <32 weeks'GA in England&Wales (2012–2020) by A. the number of days of exposure to opioids and B.group that did and did not receive opioids

Outcomes in ventilated infants born at <32 weeks'GA in England&Wales (2012–2020) by A. the number of days of exposure to opioids and B.group that did and did not receive opioids

None declared

ID 539. Intranasal dexmetedomidine for pain management during eye exam for retinopathy of prematurity

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Background: Repetitive painful procedures may cause permanent sensory and behavioral problems by impairing the perception of pain and neuroendocrine stress responses in infants. Therefore, pain management is important during invasive procedures. Screening and treatment of retinopathy of prematurity (ROP) causes acute severe pain. It is important to provide analgesia without suppressing ventilation in procedural pain due to ROP examination. The aim of this study was to evaluate the efficacy of intranasal dexmedetomidine for pain management during the ROP examination.

Methods: Infants born at <34 weeks gestational age and routinely examined for ROP were included in this retrospective study. The infants were classified into two groups; group 1 (conventional group, n=43) and group 2 (dexmedetomidine group, n=56). Infants in both groups were swaddled with the arms and legs in the flexed position during the ROP examination. Before the procedure, oral dextrose was given and proparacaine was dripped for topical anesthesia. In the dexmedetomidine group, d dexmedetomidine 0.3 mcg/kg was administered intranasally before the procedure. PIPP–R score, pulse, respiratory rate, blood pressure and saturation values were compared before the procedure, at the 1st and 5th minutes of the procedure. Apnea, desaturation, bradycardia, intervention, feeding intolerance were investigated as adverse effects during or after the procedure.

Results: In dexmedetomidine group data were obtained at 1 and 5 minutes post–procedure, including PIPPR scores (10 vs 14, p<0.001; 4 vs 6, p<0.001), peak heart rate (182 vs 182/min, p<0.001; 148 vs 162/min, p=0.001), respiratory rates (60 vs 65/min, p=0.005; 56 vs 58/min, p=0.034) and saturation levels (88 vs 89, p=0.036; 96 vs. 93, p=0.003) was significantly lower than conventional group. Also, the frequency of adverse effects was also significantly lower in dexmedetomidine group than conventional group (11% vs 40%, p=0.001).

Conclusion: In this study, intranasal dexmedetomidine used for pain management was associated with a decrease in pain score.

None declared

ID 465. Stop giving adult mydriatic doses to preterm infants. Results from the Little Eye Drop Study.

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Background

There are multiple mydriatic regimes in use globally. In some neonatal units, preterm infants are being administered mydriatic eye drops that are equivalent to, or exceeding, what an adult would receive.

The aim of this research was to evaluate the efficacy and safety of low dose (LD, phenylephrine 1%, cyclopentolate 0.2%), compared to very low dose (VLD, phenylephrine 0.5%, cyclopentolate 0.1%), microdrop (~7uL) for retinopathy of prematurity eye examinations.

Methods

Multicentre, prospective, randomised controlled non-inferiority clinical trial (n=150). Infants were randomised to receive low dose or very low dose eye microdrops. The primary outcome was to determine if very low dose (VLD) microdrops is non-inferior to low dose (LD) microdrops for ophthalmologist determined successful retinopathy of prematurity eye examinations. Secondary analysis for ophthalmologist rated ease of screen, and exploratory analysis on Stage of ROP and iris pigment on ease of screen was performed.

Results

A total of 162 infants were enrolled in the study (LD; n=76, VLD; n=74; 12 withdrew). No statistically significant differences (mean±SD) were observed between groups for gestational age (LD 27.0±1.8, VLD 27.0±1.9 weeks) and birth weight (LD 1031±299, VLD 1062±285 grams). Non-inferiority of the VLD regimen for efficacy to the LD regimen was demonstrated (95%CI −0.09 — 0.03). All Māori infants had a successful eye examination (95%CI −0.02 — 0.19).

Ophthalmologist rated ease of screen as easy in most participants (RR 0.54, 95% CI 0.19 to 1.53, p=0.27) despite smaller pupil dilation in the VLD group compared with the LD group (RR 0.38, 95% CI 0.21 to 0.70, p=0.01).

Neither iris pigmentation (adj OR 1.77, 95% CI 0.53 to 5.93, p>0.05) nor presence of ROP impacted ease of ROPEE (adj OR 1.8, 95% CI 0.92 to 3.80, p>0.05).

No clinically or statistically significant systemic side effects were identified in either group.

Conclusions

Phenylephrine 0.5% and cyclopentolate 0.1% VLD microdrops was non-inferior for efficacy to phenylephrine 1% and cyclopentolate 0.2% LD microdrops for ROPEE.

Stage of ROP and iris pigment doesn't impact ease of screen on ROPEE success rate.

Using a neonatal specific mydriatic regimen will facilitate safer use of mydriatics in preterm infants.

none declared

ID 601. A GLOBAL SURVEY ON NEONATAL SEDATION AND ANALGESIA: IMPACT OF THE SOCIODEMOGRAPHIC INDEX (SDI)

Dr Cristina Arribas[1], Dr Giacomo Cavallaro[2], Dr Karel Allegaert[3], Dr Juan-Luis Gonzalez-Caballeero[4], Dr Carolina Lagares[4], Dr Genny Raffaeli[2,5], Dr Eduardo Villamor[6], Dr Sinno Simons[7], Dr Anne Smits[3,8], **Doctor Felipe Garrido**[1]

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BACKGROUND

Use of sedation and analgesia drugs in neonates varies in routine clinical practice between NICUs. Differences are focused on the indication for use, dosages, ways of administration, availability of clinical guidelines for pain management, and adherence to them. Commonly these drugs are used "off label" since most of them have not been approved for the neonatal period, and even long-term adverse effects have been described. The aim of this survey was to describe the use and management of sedation and analgesia in newborns admitted to NICUs globally, and find differences based on a sociodemographic index (SDI).

METHODS

A questionnaire with 28 questions was developed following the modified-Delphi technique. Survey circulated through professional societies and neonatal work groups. To establish the impact of the country's socio-demographic level on analgesia and sedation practices, we used the SDI. SDI is constructed based on the geometric mean of three indicators: income per capita, average years of schooling among people aged 15 years or older, and the total fertility rate. SDI values are scaled from 0 (highest fertility, lowest income, and lowest education) to 1 (highest income, highest education, and lowest fertility).

RESULTS

From May to November 2022, 1,305 responses from all continents were obtained. After depuration of the database, 976 were analyzed. 60.2% of those surveyed reported having an analgosedation guideline in their unit. Adherence to them was high or very high (67.4%). NICUs with the capacity to treat neonates less than 28 weeks had guidelines more significantly ($p<0.05$), although this fact had no impact on adherence to them ($p=0.310$). Procedures in which sedation and analgesia were more frequently used were insertion of a chest tube (81.3%), post-surgical management (76.1%), endotracheal intubation (73.4%), and mechanical ventilation (63,4%). SDI had a significant impact on most neonatal pain management variables (table 1).

CONCLUSIONS

There is variability in the use of sedative and analgesic drugs in the NICU globally, so efforts must be made to promote practice with less variability and based on clinical evidence. Global sociodemographic differences have significant impact on how pain is managed in neonates.

Table 1: This table represents the responses to our questionnaire in the form of frequencies and percentages (in brackets), distributed in columns according to the sociodemographic index. We have distributed the countries according to the sociodemographic index into four groups, combining the countries with low and low-middle income due to fewer responses with low income. The differences between the different incomes have been calculated using the chi-square. The value of p-value < 0.05 was considered statistically significant. (*).

	Low & Low-Middle		Middle		Middle-High		High		p-value
Written guideline for analgesia and sedation in NICU:									
- Yes	35 (44.9)		95 (45.5)		226 (66.5)		230 (66.5)		
- No	43 (55.1)		114 (54.5)		114 (33.5)		116 (33.5)		< 0.001*
Adherence to analgesia and sedation guidelines:									
- Very low (< 20%)	11 (22.4)		28 (22.6)		21 (8.5)		11 (4.5)		
- Low (20-50%)	10 (20.4)		33 (26.6)		58 (23.6)		46 (18.7)		
- High (50-80%)	20 (40.8)		46 (37.1)		110 (44.7)		110 (44.7)		
- Very high (> 80%)	8 (16.3)		17 (13.7)		57 (23.2)		79 (32.1)		< 0.001*
Use of scales to measure pain in sick neonates:									
- Very low (< 20%)	45 (59.2)		80 (39.2)		83 (24.6)		49 (14.3)		
- Low (20-50%)	15 (19.7)		57 (27.9)		69 (20.4)		47 (13.7)		
- High (50-80%)	9 (11.8)		37 (18.1)		84 (24.9)		78 (22.7)		
- Very high (> 80%)	7 (9.2)		30 (14.7)		102 (30.2)		169 (49.3)		< 0.001*
Who is responsible for applying pain scales in your NICU:									
- Nurses	19 (26.8)		64 (32.8)		152 (46.3)		271 (80.9)		
- Doctors	24 (33.8)		44 (22.6)		37 (11.3)		4 (1.2)		
- Both	28 (39.4)		87 (44.6)		139 (42.4)		60 (17.9)		< 0.001*
Medical staff paying attention to scales when measured by nurses:									
- Very low (< 20%)	30 (44.1)		52 (28)		49 (15.9)		38 (11.4)		
- Low (20-50%)	12 (17.6)		66 (35.5)		87 (28.2)		82 (24.6)		
- High (50-80%)	17 (25)		45 (24.2)		103 (33.4)		121 (36.2)		
- Very high (> 80%)	9 (13.2)		23 (12.4)		69 (22.4)		93 (37.8)		< 0.001*
Pain scales used in NICU:	Yes	No	Yes	No	Yes	No	Yes	No	
- PIPP/PIPP-R	31 (39.7)	47 (60.3)	57 (27.3)	152 (72.7)	136 (39.6)	205 (60.1)	78 (22.4)	270 (77.6)	< 0.001*
- NPASS	14 (17.9)	64 (82.1)	48 (23)	161 (77.0)	103 (30.2)	238 (69.8)	124 (35.6)	224 (64.4)	0.001*
- NIPS	16 (20.5)	62 (79.5)	77 (36.8)	136 (65.1)	103 (30.2)	238 (69.8)	61 (17.5)	287 (82.5)	< 0.001*
- CRIES	30 (38.5)	48 (61.5)	73 (34.9)	187 (89.5)	94 (27.6)	247 (72.4)	16 (4.6)	332 (95.4)	< 0.001*
- CONFORT	11 (14.1)	67 (85.9)	22 (10.5)		63 (18.5)	278 (81.5)	78 (22.4)	270 (77.6)	0.004*
Use of analgosedation in neonatal procedures:	Yes	No	Yes	No	Yes	No	Yes	No	
- Mechanical ventilation	49 (62.8)	29 (37.2)	129 (61.7)	80 (38.3)	245 (71.8)	96 (28.2)	196 (56.3)	152 (43.7)	< 0.001*
- Brief respiratory techniques (BRT)	49 (62.8)	29 (37.2)	114 (54.5)	95 (45.5)	256 (75.1)	85 (24.9)	307 (88.2)	41 (11.8)	< 0.001*
- Vascular access techniques (VAT)	31 (39.7)	47 (60.3)	117 (56.0)	92 (44.0)	224 (65.7)	117 (34.3)	167 (48.0)	181 (52.0)	< 0.001*
- Surgical techniques (ST)	65 (83.3)	13 (16.3)	196 (93.8)	13 (6.2)	316 (92.7)	25 (7.3)	325 (93.4)	23 (6.6)	0.017*
- Hypothermia	13 (16.7)	65 (83.3)	72 (34.4)	137 (65.6)	230 (67.4)	111 (32.6)	240 (69)	108 (31)	< 0.001*
- Other techniques (OT)	40 (51.3)	38 (48.7)	105 (50.2)	104 (49.8)	213 (62.5)	128 (37.5)	179 (51.4)	169 (48.6)	0.008*
Premedication used for neonatal intubation:									
- Very low (< 20%)	34 (45.9)		102 (50.2)		93 (28.0)		49 (14.4)		
- Low (20-50%)	16 (21.6)		36 (17.7)		70 (21.1)		28 (8.2)		
- High (50-80%)	16 (21.6)		25 (12.3)		61 (18.4)		59 (17.4)		
- Very high (> 80%)	8 (10)		40 (19.7)		108 (32.5)		204 (60.0)		< 0.001*
Combination of medication used for neonatal intubation:	Yes	No	Yes	No	Yes	No	Yes	No	
- Opioid analgesia (OA)	54 (69.2)	24 (30.8)	151 (72.2)	58 (27.8)	294 (86.2)	47 (13.8)	268 (77)	80 (23.0)	< 0.001*
- Non opioid analgesia (NOA)	13 (16.7)	65 (83.3)	22 (10.5)	187 (89.5)	13 (3.8)	328 96.2)	73 (21)	275 (79.0)	< 0.001*
- Hypnotic (HY)	38 (48.7)	40 (51.3)	96 (45.9)	113 (54.1)	160 (46.9)	181 (53.1)	73 (21.0)	275 (79.0)	< 0.001*
- Anesthetic (AN)	14 (17.9)	64 (82.19	16 (7.7)	193 (92.3)	49 (14.4)	292 (85.6)	106 (30.5)	242 (69.5)	< 0.001*
- Muscle relaxants (MR)	15 (19.2)	63 (80.8)	26 (12.4)	183 (87.6)	69 (20.2)	272 (79.8)	161 (46.3)	187 (53.7)	< 0.001*
- Atropine	23 (29.5)	55 (70.5)	36 (17.2)	173 (82.8)	102 (29.9)	239 (70.1)	204 (58.6)	144 (41.4)	< 0.001*
Sedoanalgesia for preterm used during mechanical ventilation:									
- Very low (< 20%)	39 (52.7)		92 (44.7)		99 (29.4)		119 (34.9)		
- Low (20-50%)	13 (17.6)		54 (26.2)		92 (27.3)		99 (29.0)		
- High (50-80%)	12 (16.2)		34 (16.5)		66 (19.6)		69 (20.2)		
- Very high (> 80%)	10 (13.5)		26 (12.6)		80 (23.7)		54 (15.8)		< 0.001*
Combination of medication for neonatal intubation:	Yes	No	Yes	No	Yes	No	Yes	No	
- Opioid analgesia (OA)	62 (70.5)	16 (20.5)	182 (87.1)	27 (12.9)	318 (93.3)	23 (6.7)	320 (92.0)	28 (8.0)	0.001*
- Non opioid analgesia (NOA)	26 (33.3)	52 (66.7)	56 (26.8)	153 (73.2)	64 (18.8)	277 (81.2)	83 (23.9)	265 (76.1)	0.021*
- Hypnotic (HY)	32 (41.0)	46 (59.0)	127 (60.8)	82 (39.2)	163 (47.8)	178 (52.2)	149 (42.8)	199 (57.2)	< 0.001*
- Anesthetic (AN)	5 (6.4)	73 (93.6)	9 (4.3)	200 (95.7)	15 (4.4)	326 (95.6)	44 (4.5)	333 (95.7)	0.869
- Muscle relaxants (MR)	12 (5.4)	66 (84.6)	7 (3.3)	202 (96.7)	19 (5.6)	322 (94.4)	25 (7.2)	323 (92.8)	0.002*
Way of administration of analgosedation for preterm babies:	Yes	No	Yes	No	Yes	No	Yes	No	
- Continuous infusion	34 (43.6)	44 (56.4)	91 (43.5)	118 (56.5)	135 (39.6)	209 (60.1)	139 (39.9)	209 (60.1)	0.750
- Bolus	34 (43.6)	44 (56.4)	66 (31.6)	143 (68.4)	70 (20.5)	271 (79.5)	108 (31.0)	240 (69.0)	< 0.001*
- Continuous infusion & bolus as rescue	23 (29.5)	55 (70.5)	84 (40.2)	125 (59.8)	189 (55.4)	152 (44.6)	217 (62.4)	131 (37.6)	< 0.001*
- Bolus followed by continuous infusion	13 (16.7)	65 (83.3)	62 (29.7)	147 (70.3)	75 (22)	266 (78)	128 (36.8)	220 (63.2)	< 0.001*
Way of administration of relaxants for preterm babies:	Yes	No	Yes	No	Yes	No	Yes	No	
- Continuous infusion	9 (11.5)	69 (88.5)	38 (18.2)	171 (81.8)	44 (12.9)	297 (87.1)	71 (20.4)	277 (79.6)	0.032*
- Bolus	19 (24.4)	59 (75.6)	50 (23.9)	159 (76.1)	110 (32.3)	231 (67.7)	151 (43.4)	197 (56.6)	<0.001*
- Continuous infusion & bolus as rescue	7 (9.0)	71 (91.0)	16 (7.7)	193 (92.3)	35 (10.3)	306 (89.7)	44 (12.6)	304 (87.4)	0.292
- Bolus followed by continuous infusion	5 (6.4)	73 (93.6)	15 (7.2)	194 (92.8)	18 (5.3)	323 (94.7)	56 (16.1)	292 (83.9)	<0.001*
- Never use muscle relaxants	40 (51.3)	38 (48.7)	102 (48.8)	107 (51.2)	158 (46.3)	183 (53.7)	92 (26.4)	256 (73.6)	<0.001*
Use of sedoanalgesia for term during mechanical ventilation:									
- Very low (< 20%)	32 (43.2)		74 (35.9)		54 (16.0)		64 (18.9)		
- Low (20-50%)	13 (17.6)		56 (27.2)		66 (19.6)		78 (23.0)		
- High (50-80%)	13 (17.6)		38 (18.4)		86 (25.5)		84 (24.8)		
- Very high (> 80%)	16 (21.6)		38 (18.4)		131 (38.9)		113 (33.3)		< 0.001*
Combination of medication for terms during mechanical ventilation:	Yes	No	Yes	No	Yes	No	Yes	No	
- Opioid analgesia (OA)	62 (79.5)	16 (20.5)	184 (88.0)	25 (12.0)	325 (5.3)	16 (4.7)	330 (94.8)	18 (5.2)	< 0.001*
- Non opioid analgesia (NOA)	18 (23.1)	60 (76.9)	52 (24.9)	157 (75.1)	66 (19.4)	275 (80.6)	85 (24.4)	263 (75.6)	0.342
- Hypnotic (HY)	47 (60.3)	31 (39.7)	148 (70.8)	61 (29.2)	237 (69.5)	104 (30.5)	230 (66.1)	118 (33.9)	0.281
- Anesthetic (AN)	4 (5.1)	74 (94.9)	18 (7.7)	193 (92.3)	29 (8.5)	312 (91.5)	32 (9.2)	316 (90.8)	0.675
- Muscle relaxants (MR)	18 (23.1)	60 (76.9)	7 (3.3)	202 (96.7)	40 (11.7)	301 (88.3)	60 (17.2)	288 (82.8)	< 0.001*
Way of administration of analgosedation for term babies:	Yes	No	Yes	No	Yes	No	Yes	No	
- Continuous infusion	30 (38.5)	48 (61.5)	86 (41.4)	123 (58.9)	125 (36.7)	216 (63.3)	137 (39.4)	211 (60.6)	0.754
- Bolus	33 (42.3)	45 (57.7)	54 (25.8)	155 (74.2)	67 (19.6)	274 (80.4)	110 (31.6)	238 (68.4)	< 0.001*
- Continuous infusion & bolus as rescue	23 (29.5)	55 (70.5)	90 (43.1)	119 (56.9)	190 (55.7)	151 (44.3)	209 (60.1)	139 (39.9)	< 0.001*
- Bolus followed by continuous infusion	18 (23.1)	60 (76.9)	57 (27.3)	152 (72.7)	86 (25.2)	255 (74.8)	142 (40.8)	206 (59.2)	< 0.001*
Way of administration of muscle relaxants for term babies:	Yes	No	Yes	No	Yes	No	Yes	No	
- Continuous infusion	7 (9.0)	71 (91.0)	47 (22.5)	162 (77.5)	49 (14.4)	292 (85.6)	85 (24.4)	263 (75.6)	< 0.001*
- Bolus	27 (34.6)	51 (65.4)	68 (32.5)	141 (67.5)	125 (36.7)	216 (63.3)	162 (46.6)	186 (53.4)	0.004*
- Continuous infusion & bolus as rescue	7 (9.0)	71 (91.0)	14 (6.7)	195 (93.3)	39 (11.4)	302 (88.6)	59 (17.0)	289 (83.0)	0.003*
- Bolus followed by continuous infusion	11 (14.1)	67 (85.9)	23 (11.0)	186 (89.0)	38 (11.1)	303 (88.9)	70 (20.1)	278 (79.9)	0.003*
- Never use muscle relaxants	32 (41.0)	46 (59.0)	73 (34.9)	136 (65.1)	116 (34.0)	225 (66.0)	64 (18.4)	284 (81.6)	< 0.001*
Combination of medication for asphyxiated neonates undergoing hypothermia:	Yes	No	Yes	No	Yes	No	Yes	No	
- Opioid analgesia (OA)	55 (70.5)	23 (29.5)	154 (73.7)	55 (26.3)	294 (86.2)	47 (13.8)	303 (87.1)	45 (12.9)	< 0.001*
- Non opioid analgesia (NOA)	11 (14.1)	67 (85.9)	20 (9.6)	189 (90.4)	28 (8.2)	313 (91.8)	33 (9.5)	315 (90.5)	0.459
- Hypnotic (HY)	25 (32.1)	53 (67.9)	66 (31.6)	143 (68.4)	110 (32.2)	231 (67.6)	121 (34.8)	227 (65.2)	0.849
- Anesthetic (AN)	1 (1.3)	77 (98.7)	3 (1.4)	206 (98.6)	5 (1.5)	336 (98.5)	5 (1.4)	343 (98.6)	^ NS
Use of local analgesia to perform lumbar puncture:									
- Very low (< 20%)	53 (72.6)		138 (69.3)		149 (45.3)		171 (50.3)		
- Low (20-50%)	9 (12.3)		22 (11.1)		36 (10.9)		23 (6.8)		
- High (50-80%)	4 (5.3)		17 (8.5)		37 (11.2)		34 (10.0)		
- Very high (> 80%)	7 (9.6)		22 (11.1)		107 (32.5)		112 (32.9)		< 0.001*
Medication used for local analgesia in lumbar puncture:									
- EMLA	26 (39.4)		59 (33.7)		239 (78.4)		210 (73.2)		
- Tetracaine gel	40 (60.6)		107 (61.1)		61 (20.0)		74 (25.8)		
- Lidocaine	0 (0.0)		9 (5.1)		5 (1.6)		3 (1.0)		< 0.001*

PIPP: Premature Infant Pain Profile; PIPP- R: Premature Infant Pain Profile-Revised; N-PASS: Neonatal Pain Agitation and Sedation Scale; NIPS: Neonatal Infant Pain Scale; CRIES: Crying, Requires Oxygen Saturation, Increased Vital Signs, Expression, Sleeplessness; NFCS: Neonatal Facial Coding System; NFCS-R: Neonatal Facial Coding System-Revised; DAN: Douleur Aiguë Nouveau-né scale; BIPP: Behavioral Infant Pain Profile; COMFORTneo: Comfort neo scale. BPN: Bernese Pain Scale Neonates; EDIN: Échelle Douleur Inconfort Nouveau-Né, neonatal pain, and discomfort scale; BRT: Brief respiratory techniques (intubation; surfactant administration by minimally invasive techniques); VAT: Vascular access techniques (peripheral cannular insertion, central long lines insertion, heel prick, skin-breaking procedures [phlebotomy, intramuscular and subcutaneous injection]); ST: Surgical Techniques (abdominal tube insertion, suprapubic puncture or catheter insertion, pelvis catheter insertion or nephrostomy, cerebral ventricular puncture, pericardial puncture, bone marrow puncture, post-surgical pain management); AO: Opioid analgesia (morphine, fentanyl, remifentanyl); HY: Hypnotics (midazolam, dexmedetomidine); AN: Anesthetics (ketamine, propofol); MR: Muscle relaxants (cisatracurium, pancuronium, rocuronium, vecuronium, succinyl-choline); NOA: Non-opioid analgesics (paracetamol). ^ NS: No significant.

Table 1: This table represents the responses to our questionnaire in the form of frequencies and percentages (in brackets), distributed in columns according to the sociodemographic index.

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None declared