Volba lokálních anestetik a adjuvancií v porodnictví

Petr Štourač

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Souhrn

- Aktuální pohled na ČR
  - Pohled prezidenta Havla
  - Pohled dalšího státníka - OBAAMA-CZ
  - Algoritmus toxicita LA AKUTNĚ.CZ
  - Nejčastější adjuvans a jeho úskalí
- Aktuální pohled PubMed.org
  - Wang X, Xu S, Qin X, Li X, Feng SW, Liu Y, Wang W, Guo X, Shen R, Shen X, Wang F. Comparison Between the Use of Ropivacaine Alone and Ropivacaine With Sufentanil in Epidural Labor Analgesia. Medicine (Baltimore). 2015
  - Roelants F, Lavand'homme P. Clonidine versus sufentanil as an adjuvant to ropivacaine in patient-controlled epidural labour analgesia: A randomised double-blind trial. Eur J Anaesthesiol. 2015
  - Chatrath V, Khetarpal R, Sharma S, Kumari P, Sudha, Bali K. Fentanyl versus tramadol with levobupivacaine for combined spinal-epidural analgesia in labor. Saudi J Anaesth. 2015
  - Cossu AP, De Giudici LM, Piras D, Mura P, Scanu M, Cossu M, Saba M, Finco G, Brazzi L. A systematic review of the effects of adding neostigmine to local anesthetics for neuraxial administration in obstetric anesthesia and analgesia. Int J Obstet Anesth. 2015
  - Guo S, Li B, Gao C, Tian Y. Epidural Analgesia With Bupivacaine and Fentanyl Versus Ropivacaine and Fentanyl for Pain Relief in Labor: A Meta-Analysis. Medicine (Baltimore). 2015

Čtyřicet let jste v tento den slyšeli z úst mých předchůdců v různých obměnách totéž…

- Toxicita, nástup a trvání účinku, Lipid rescue
- Koncentrace
  - <0,125%, 0,5%, ~~0,75%~~
- Analgezie
  - Ropivakain > Levobupivakain > Bupivakain
- Anestezie
  - Top-up: Lidokain > Levobupivakain > Bupivakain
  - SAB: Levobupivakain, Bupivakain spinal, Heavy
- Adjuvans
  - Sufentanil > Fentanyl

Pohled dalšího státníka – OBAAMA-CZ

Society for Obstetric Anesthesia and Perinatology

Section Editor: Cynthia A. Wong

Anesthesia for Cesarean Delivery in the Czech Republic: A 2011 National Survey

Petr Stourac, MD, PhD,* Jan Blaha, MD, PhD,† Radka Klozova, MD,‡ Pavlina Noskova, MD,† Dagmar Seidlova, MD, PhD,§ Lucie Brozova, Bc,|| and Jiri Jarkovsky, MSc, PhD||

Local Anesthetic Agent for Spinal Anesthesia	
Plain 0.5% Bupivacaine	424 (91)
Plain 0.5% Levobupivacaine	43 (9)
Opioid intrathecal adjuvant	
Sufentanil	41 (9)
Fentanyl	7 (1)
Morphine	12 (3)

Local Anesthetic Mixture for Epidural Anesthesia	
2% Lidocaine with sufentanil and epinephrine	75 (51)
0.5% Bupivacaine with sufentanil	64 (44)
Other (levobupivacaine or ropivacaine)	7 (5)

Analgezie u porodu v České republice v roce 2011 z pohledu studie OBAAMA-CZ – prospektivní observační studie

Analgesia for labour in the Czech Republic in the year 2011 from the perspective of OBAAMA-CZ study – Prospective National Survey

Štourač P.[1,2,6], Bláha J.[1,3], Nosková P.[1,3], Klozová R.[1,4], Seidlová D.[1,5], Jarkovský J.[6], Zelinková H.[6], OBAAMA-CZ studijní skupina

Epidurální analgezie		
Lokální anestetikum	Koncentrace	Četnost
Bupivakain	**0,125%**	**80,7%**
Levobupivakain	**0,125%**	**12,6%**
Ropivakain	**0,2%**	**6,7%**
Adjuvans	Dávka	
Sufentanil	**3-10µg**	**100%**

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TOXICKÁ REAKCE NA LOKÁLNÍ ANESTETIKA VE STOMATOLOGII

Algoritmus popisuje reálnou situaci toxické reakce na lokální anestetikum v ambulanci zubního lékaře a spíše didakticky navozuje rozvoj od relativního předávkování až po předávkování absolutní s ohrožením života. Algoritmus by tak měl přispět k osvojení důležitých postupů při řešení takto vzniklého akutního stavu.

vloženo: 22. 12. 2011 | poslední úpravy: 14. 11. 2014 | autor: MUDr. Zdeněk Daněk, Andrea Hajná

TOXICKÁ REAKCE NA LOKÁLNÍ ANESTETIKA

Lokální anestetika jsou hojně používána anesteziology, operatéry, případně i praktickými lékaři. Při jejich použití hrozí riziko závažných toxických reakcí, které mohou vést i k fatálnímu konci. Předkládaný algoritmus ukazuje možnosti minimalizace těchto rizik a předkládá i postup při řešení závažné kardiovaskulární komplikace podle současných doporučení.

vloženo: 22. 12. 2011 | poslední úpravy: 14. 11. 2014 | autor: MUDr. Ivo Křikava, Ľubomíra Longauerová, Kristýna Melichárková, Tereza Šafaříková, Alexandra Lamprechtová

- Pro přípravu roztoků vždy používat izotonické roztoky (F1/1)
- CAVE: Aqua pro injectione
  - Hypotonická a hypoosmolární
  - Při aplikaci do epidurálního prostoru bolest
  - Může způsobit až trvalé poškození nervů

Aktuální pohled PubMed.org

- Local
- Anesthetics
- Labour

1. Risk factors for accidental dural puncture during epidural anesthesia for laboring women.
Michaan N, Lotan M, Galiner M, Amzalag S, Many A.
J Matern Fetal Neonatal Med. 2015 Nov 23:1-3. [Epub ahead of print]
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Cubayachi C, Couto RO, de Gaitani CM, Pedrazzi V, Freitas O, Lopez RF.
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3. Comparison Between the Use of Ropivacaine Alone and Ropivacaine With Sufentanil in Epidural Labor Analgesia.
Wang X, Xu S, Qin X, Li X, Feng SW, Liu Y, Wang W, Guo X, Shen R, Shen X, Wang F.
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Roelants F, Lavand'homme P.
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6. The extension of epidural blockade for emergency caesarean section: a survey of Scandinavian practice.
Wildgaard K, Hetmann F, Ismaiel M.
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Ashikhmina E, Farber MK, Mizuguchi KA.
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PMID: 26350523
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8. The toxic impact of **local anaesthetics** in menopausal women: causes, prevention and treatment after **local** anaesthetic overdose. **Local** anaesthetic systemic toxicity syndrome.
Sobolewski B, Doman P, Stetkiewicz T, Oszukowski P, Woźniak P.
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PMID: 26327891 **Free PMC Article**
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9. Markedly lowering the viscosity of aqueous solutions of DNA by additives.
Elkin I, Weight AK, Klibanov AM.
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10. Fentanyl versus tramadol with levobupivacaine for combined spinal-epidural analgesia in **labor**.
Chatrath V, Khetarpal R, Sharma S, Kumari P, Sudha, Bali K.
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Comparison Between the Use of Ropivacaine Alone and Ropivacaine With Sufentanil in Epidural Labor Analgesia.

- První doba porodní
  - Lepší účinnost kombinace
- Druhá doba porodní
  - Bez rozdílu v účinnosti
- Bez rozdílu v satisfakci
- Méně nežádoucích účinků s čistým LA vč. novorozeneckých

Medicine (Baltimore). 2015 Oct;94(43):e1882. doi: 10.1097/MD.0000000000001882.

Comparison Between the Use of Ropivacaine Alone and Ropivacaine With Sufentanil in Epidural Labor Analgesia.

Wang X[1], Xu S, Qin X, Li X, Feng SW, Liu Y, Wang W, Guo X, Shen R, Shen X, Wang F.

Author information

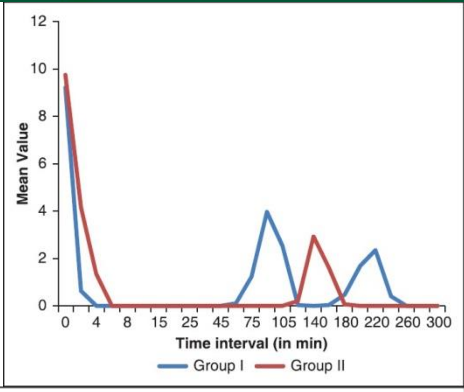
Abstract

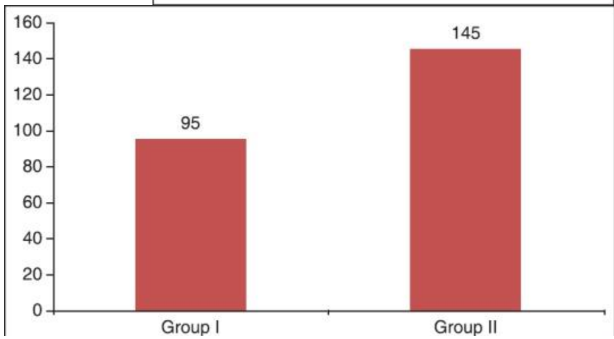
To compare the analgesic efficacy and safety of the sole local anesthetic ropivacaine with the combination of both local anesthetic ropivacaine and opioidergic analgesic sufentanil given epidurally on the labor pain control.After institutional review board approval and patient consent, a total of 500 nulliparas requesting epidural labor analgesia were enrolled and 481 eventually were randomized into 2 groups: a sole local anesthetic group (ropivacaine 0.125%) and a combination of local anesthetic and opioidergic analgesic group (0.125% ropivacaine+0.3μg/mL sufentanil). After the test dose, a 10-mL epidural analgesic solution was given in a single bolus, followed by intermittent bolus injection of 10 to 15mL of the solution. The primary outcome was the analgesic efficacy measured using Numerical Rating Scale (NRS) of pain. Other maternal and infant variables were evaluated as secondary outcomes.A total of 346 participants completed the study. The median NRS pain score during the 1st stage of labor was significantly lower in the combination group 2.2 (interquartile range [IQR]: 1.8-2.7) comparing to the sole local analgesic group 2.4 (IQR: 2.0-2.8) (P< 0.0001). No significant difference was observed in NRS pain score prior epidural analgesia and during the 2nd stage of labor. Patients in both groups rated same satisfaction of analgesia. Patients in the sole local analgesic group experienced fewer side effects than those in the combination group (37.7% vs 47.2%, P=0.082). The individual analgesia-related cost in the sole local analgesic group was less (\$5.7±2.06) than that in the combination group (\$9.76±3.54) (P<0.0001). The incidence of 1-minute Apgar ≤ 7 was lower in the sole local analgesic group 2 (1.2%) than the combination group 10 (5.5%) (P=0.038). No difference was found between other secondary outcomes.The sole local anesthetic ropivacaine produces a comparable labor analgesic effect as the combination of both local anesthetic ropivacaine and opioidergic analgesic sufentanil at different stages of labor (ΔNRS=0.2) but the former has less side effects, lower cost, and less incidence of lower 1-minute Apgar scoring. These results imply the necessity of a systematic reevaluation of epidural labor analgesia with sole local anesthetics against combination regimens of local anesthetics and other opioids.

Fentanyl versus tramadol with levobupivacaine for combined spinal-epidural analgesia in labor

SJA Saudi Journal of Anaesthesia
Official Publicationn of Saudi Anaesthetic Association

- Fentanyl rychlejší nástup účinku
- Tramadol delší doba trvání účinku
- Tramadol méně nežádoucích účinků
- Podezřelá účinnost – VAS 0
- Podání top up při 2 kontrakcích
  - VAS > 4





Saudi J Anaesth. 2015 Jul-Sep;9(3):263-7. doi: 10.4103/1658-354X.154700.

Fentanyl versus tramadol with levobupivacaine for combined spinal-epidural analgesia in labor.

Chatrath V[1], Khetarpal R[1], Sharma S[2], Kumari P[1], Sudha[1], Bali K[3].

Author information

Abstract

BACKGROUND: Neuraxial labor analgesia using new local anesthetics such as levobupivacaine has become very popular by virtue of the safety and lesser motor blockade caused by these agents. Combined spinal-epidural analgesia (CSEA) has become the preferred method for labor analgesia as it combines benefits of both spinal analgesia and flexibility of the epidural catheter. Adding opioids to local anesthetic drugs provide rapid onset and prolonged analgesia but may be associated with several maternal and fetal adverse effects. The purpose of this study is to compare fentanyl and tramadol used in CSEA in terms of duration of analgesia and frequency of the adverse fetomaternal outcome.

MATERIALS AND METHODS: A total of 60 primiparas with a singleton pregnancy in active labor were given CSEA after randomly allocating them in two groups of 30 each. Group I received intrathecal 2.5 mg levobupivacaine + 25 µg fentanyl followed by epidural top ups of 20 ml 0.125% solution of the same combination. Group II received 25 mg tramadol instead of fentanyl. Epidural top ups were given when parturient complained of two painful contractions (visual analogue scale ≥ 4). Data collected were demographic profile of the patients, analgesic qualities, side- effects and the fetomaternal outcome.

RESULTS: Patients in Group II had significantly prolonged analgesia (145 ± 9 minutes) than in Group I (95 ± 7 minutes). Patients receiving fentanyl showed rapid onset of analgesia, but there were more incidence of side-effects like shivering, pruritus, transient fetal bradycardia, hypotension, nausea and vomiting. Only side-effect in the tramadol group was nausea and vomiting. During labor, maternal satisfaction was excellent.

CONCLUSIONS: Adding tramadol to local anesthetic provides prolonged analgesia with minimal side effects. Fentanyl, when used as adjuvant to local anesthetic, has a rapid onset of analgesia but has certain fetomaternal side-effects.

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Clonidine versus sufentanil as an adjuvant to ropivacaine in patient-controlled epidural labour analgesia: A randomised double-blind trial

- 195 žen
- Skupiny se sufentanilem 0,25 µg/ml, clonidinem 3 nebo 1,5 µg/ml
- Hlavní cíl – počet záchranných dávek Ropi
  - srovnatelný
- Nauzea
  - Nižší RC1,5 i RC3
- Instrumentální porody
  - Vyšší RC1,5 i RC3

Eur J Anaesthesiol. 2015 Nov;32(11):805-11. doi: 10.1097/EJA.0000000000000347.

Clonidine versus sufentanil as an adjuvant to ropivacaine in patient-controlled epidural labour analgesia: A randomised double-blind trial.

Roelants F[1], Lavand'homme P.

Author information

Abstract

BACKGROUND: Adjuvants to local anaesthetics for epidural labour analgesia are useful if they reduce side-effects or personnel requirements. Epidural clonidine improves analgesia and provides a significant local anaesthetic-sparing effect.

OBJECTIVE: To compare the number of rescue doses administered by the anaesthesiologist when clonidine or sufentanil is added to epidural ropivacaine.

DESIGN: A randomised double-blind trial.

SETTING: Cliniques Universitaires Saint-Luc, Université Catholique de Louvain, Brussels, Belgium, from June 2009 to June 2010.

PATIENTS: One hundred and ninety-five women in labour.

INTERVENTION: Epidural analgesia initiated with 10 ml ropivacaine 0.1%, women randomised to receive patient-controlled epidural analgesia (5 ml demand bolus, 15 min lockout) with ropivacaine 0.1% and sufentanil 0.25 µg ml (RS group; n=65), or ropivacaine 0.1% and clonidine 1.5 µg ml (RC1.5 group; n=65) or ropivacaine 0.1% and clonidine 3 µg ml (RC3 group; n=65). Rescue analgesia was available as needed - 10 ml ropivacaine 0.1% (numerical rating scale <6/10) or ropivacaine 0.2% (numerical rating scale ≥6/10).

MAIN OUTCOME: Comparison of the total number of rescue doses.

RESULTS: The total number of rescue doses was similar among the groups [median (interquartile range): 1 (0 to 1) in the RC1.5 group, 1 (1 to 2) in the RC3 group and 2 (1 to 2) in the RS group; overall P=0.056]. However, fewer patients in both the RC1.5 and RC3 groups needed two or more rescue doses (25 and 29% versus 52% in the RS group, P=0.01). The rate of instrumental delivery was higher in both clonidine groups (13 and 12% versus 0%, P=0.03). Nausea was significantly less frequent in both the clonidine groups. Satisfaction scores, total ropivacaine consumption, maternal sedation, and hypotension and neonatal outcomes were similar among the groups.

CONCLUSION: Compared with sufentanil 0.25 µg ml, addition of clonidine (1.5 to 3 µg ml) to patient-controlled epidural analgesia with ropivacaine 0.1% provided similar labour analgesia and a similar need for anaesthesiologist-administered rescue doses. Clonidine 3 µg ml did not offer any advantage over clonidine 1.5 µg ml. The instrumentation rate was higher in both the clonidine groups.

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A systematic review of the effects of adding neostigmine to local anesthetics for neuraxial administration in obstetric anesthesia and analgesia

- 16 studií s 1183 rodičkami
  - 666 neostigmine (10 - 750 µg)
    - 536 epidurálně (372 kontrolní)
    - 130 subarachnoidálně (145 kontrolní)
- Neostigmine redukuje dávku lokálního anestetika
- Pruritus
- Nauzea
  - EPI – ne
  - SA - ano

Int J Obstet Anesth. 2015 Aug;24(3):237-46. doi: 10.1016/j.ijoa.2015.05.002. Epub 2015 May 19.

A systematic review of the effects of adding neostigmine to local anesthetics for neuraxial administration in obstetric anesthesia and analgesia.

Cossu AP[1], De Giudici LM[2], Piras D[2], Mura P[2], Scanu M[3], Cossu M[3], Saba M[2], Finco G[2], Brazzi L[4].

Author information

Abstract

BACKGROUND: Drugs used in obstetric patients must accomplish two goals: efficacy and safety for both mother and fetus. Neostigmine has been co-administered epidurally and intrathecally with local anesthetics and other adjuncts in the obstetric setting. The aim of this meta-analysis was to assess the efficacy and incidence of adverse events related to the use of neostigmine in obstetric anesthesia.

METHODS: A meta-analysis of randomized-controlled human trials was conducted using the data sources Google Scholar and PubMed (updated 1 November 2014). Inclusion criteria were: random allocation to treatment; comparison of neostigmine or neostigmine with local anesthetics and/or other adjuvants versus placebo or placebo with local anesthetics and/or other adjuvants; and approval by an ethics committee.

RESULTS: The use of neostigmine as an adjuvant in neuraxial anesthesia is associated with a reduction in the dose of local anesthetic during labor analgesia and postoperative analgesia following cesarean section: mean reduction of local anesthetic (ropivacaine or bupivacaine) vs. control -4.08 (95% CI -6.7 to -1.5) mg/h (P=0.002). The risk of nausea was increased vs. control with intrathecal neostigmine (OR 8.99 [95% CI 4.74 to 17.05], P <0.001) but not with epidural neostigmine (OR 0.97 [95% CI 0.46 to 2.05], P=0.94). Use of neuraxial neostigmine was associated with a decrease in the risk of pruritus but there was no increase in the incidence of hypotension, dizziness or sedation and no effect on the incidence of abnormal fetal heart rate patterns or Apgar scores.

CONCLUSIONS: Neuraxial administration of neostigmine significantly reduces local anesthetic consumption without serious adverse side effects to the mother or fetus. However, neostigmine is only recommended for epidural administration as intrathecal use significantly increases the incidence of maternal nausea and vomiting.

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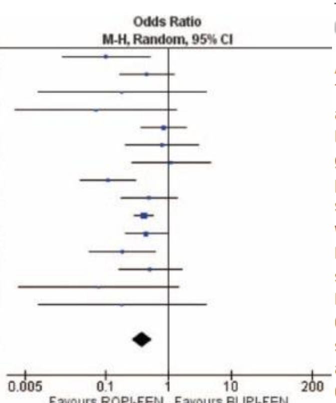
Epidural Analgesia With Bupivacaine and Fentanyl Versus Ropivacaine and Fentanyl for Pain Relief in Labor: A Meta-Analysis

- 15 RCT studií, 2097 rodiček
- Koncetrace Bupivakainu i Ropivakainu 0,1%,
- Bez rozdílu ve VAS, incidenci SC či instrumentálního porodu, délce 1. či 2. doby porodní, nástupu či délce analgezie či NÚ
- Ropivakain nižší výskyt motorické blokády

Study or Subgroup	ROPI-FEN Events	ROPI-FEN Total	BUPI-FEN Events	BUPI-FEN Total	Weight	Odds Ratio M-H, Random, 95% CI
Asik et al 2002	2	25	13	28	4.0%	0.10 [0.02, 0.51]
Atienzar et al 2008	13	34	18	31	8.5%	0.45 [0.17, 1.21]
Bolukbasi et al 2005	0	20	2	20	1.2%	0.18 [0.01, 4.01]
Campbell et al 2000	0	20	5	20	1.3%	0.07 [0.00, 1.34]
Chen et al 2014 CEI	11	120	13	120	10.4%	0.83 [0.36, 1.94]
Chen et al 2014 PCEA	4	120	5	120	5.4%	0.79 [0.21, 3.03]
Fernandez-Gui. et al 2001	4	47	4	51	4.8%	1.09 [0.26, 4.64]
Finegold et al 2000	6	50	28	50	8.2%	0.11 [0.04, 0.30]
Girard et al 2006	10	27	18	33	8.0%	0.49 [0.17, 1.39]
Halpern et al 2003	111	279	171	276	21.1%	0.41 [0.29, 0.57]
Lee et al 2004	10	173	21	173	11.4%	0.44 [0.20, 0.97]
Meister et al 1999	8	25	18	25	6.4%	0.18 [0.05, 0.61]
Owen et al 2001	8	25	12	25	6.9%	0.51 [0.16, 1.61]
Paddalwar et al 2013	0	30	5	30	1.3%	0.08 [0.00, 1.44]
Pirbudak et al 2002	0	20	2	20	1.2%	0.18 [0.01, 4.01]
Total (95% CI)		**1015**		**1022**	**100.0%**	**0.38 [0.27, 0.54]**
Total events	187		335			

Heterogeneity: $Tau^2 = 0.12$; $Chi^2 = 20.13$, $df = 14$ ($P = 0.13$); $I^2 = 30\%$
Test for overall effect: $Z = 5.45$ ($P < 0.00001$)



Medicine (Baltimore). 2015 Jun;94(23):e880. doi: 10.1097/MD.0000000000000880.

Epidural Analgesia With Bupivacaine and Fentanyl Versus Ropivacaine and Fentanyl for Pain Relief in Labor: A Meta-Analysis.

Guo S[1], Li B, Gao C, Tian Y.

Author information

Abstract

The aim of this study was to compare the efficacy and safety of the combinational use of bupivacaine and fentanyl versus ropivacaine and fentanyl in epidural analgesia for labor. Multiple electronic databases were searched by using appropriate MeSH terms, and keywords for original research papers published before October 2014. Meta-analyses were based on mean differences between the groups as well as odds ratios. Statistical heterogeneity was tested by I² index. Fifteen randomized controlled trials, recruiting 2097 parturient mothers overall, were selected for the meta-analyses. Concentrations of the preparations used (weight/volume; mean and standard deviations) were bupivacaine 0.1023% ± 0.0375%, ropivacaine 0.1095% ± 0.042%, and fentanyl 0.00021% ± 0.000089%. There were no statistically significant differences between both the combinations in the mean change in Visual Analog Score for pain during labor, incidence of instrumental or cesarean delivery, neonate Apgar score of <7, maternal satisfaction, duration of either first or second stage of labor, oxytocin use for induction, onset of analgesia, and duration of analgesia. Women who received ropivacaine and fentanyl had significantly lower incidence of motor blocks (odds ratio [95% CI] = 0.38 [0.30, 0.48] P < 0.00001, fixed effect and 0.38 [0.27, 0.54] P < 0.0001, random effects I² 30%) when compared with women who received bupivacaine and fentanyl. Incidence of side effects was similar for both the combinations. Analgesia with ropivacaine in combination with fentanyl at 0.1%:0.0002% ratio for labor pain relief is associated with lower incidence of motor blocks in comparison with analgesia with bupivacaine and fentanyl at similar ratio (0.1%: 0.0002%).

Děkuji za pozornost

… sejdeme se na AKUTNĚ.CZ …

19. 11. 2016

Univerzitní kampus Bohunice

Brno

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