

chronickému užívání až vzniku závislosti. Pro zajištění efektivního managementu bolesti je nezbytné minimalizovat dávky opioidů, kombinovat je s non-opioidní formou farmakoterapie a vyhnout se monoterapii.

Léčba musí být individualizovaná, zohledňující odlišnou toleranci každého pacienta a proměnlivou reakci na stejné dávky – tzv. farmakogenetický polymorfismus. To souvisí s možnou změnou farmakokinetiky léků

u popáleninových úrazů, zejména v počátečních fázích léčby, kdy dochází k neustálým změnám cirkulujícího objemu v důsledku reakce na popáleninový šok a objemovou resuscitací.

LITERATURA

- Romanowski KS, Carson J, Pape K, et al. American Burn Association Guidelines on the Management of Acute Pain in the Adult Burn Patient: A Review of the Literature, a Compilation of Expert Opinion, and Next Steps. *J Burn Care Res.* 2020;41(6):1129-1151.
- Yabanoğlu H, Yağmurdur MC, Taşkıntuna N, et al. Early period psychiatric disorders following burn trauma and the importance of surgical factors in the etiology. *Ulus Travma Acil Cerrahi Derg.* 2012;18:436-440.
- Emery MA, Eitan S. Drug-specific differences in the ability of opioids to manage burn pain. *Burns: journal of the International Society for Burn Injuries.* 2020;46(3):503-513.
- Kim DE, Pruskowski KA, Ainsworth CR, et al. A Review of Adjunctive Therapies for Burn Injury Pain During the Opioid Crisis. *J Burn Care Res.* 2019;40(6):983-995.
- Nelson S, Conroy C, Logan D. The biopsychosocial model of pain in the context of pediatric burn injuries. *Eur J Pain* 2019;23:421-434.
- DeJesus J, Shah NR, Franco-Mesa C, et al. Risk factors for opioid use disorder after severe burns in adults. *Am J Surg.* 2023;225(2):400-407.
- Naderi F, Aghayi A, Mohammadzadeh M. Comparing the effect of music on pain threshold, anxiety, behavioral responses to pain and the hemodynamic parameters during dressing change in burn patients. *Q Horiz Med Sci.* 2014;20(1):63-68.
- De Young AC, Hendrikz J, Kenardy JA, et al. Prospective evaluation of parent distress following pediatric burns and identification of risk factors for young child and parent post-traumatic stress disorder. *J Child Adolesc Psychopharmacol.* 2014;24(1):9-17.
- Scott JC, Cooke JE, Stanski DR. Electroencephalographic quantitation of opioid effect: comparative pharmacodynamics of fentanyl and sufentanil. *Anesthesiology.* 1991;74(1):34-42.
- Zhang J, Chen L, Sun Y, et al. Comparative effects of fentanyl versus sufentanil on cerebral oxygen saturation and postoperative cognitive function in elderly patients undergoing open surgery. *Aging Clin Exp Res.* 2019;31(12):1791-1800.
- Souhrn údajů o přípravku Sufentanil Torrex 5 mikrogramů/ml injekční roztok [on-line] Státní ústav pro kontrolu léčiv. [cited 2023 Aug 16]. Available from: <http://www.sukl.cz/>.
- Zhang XH, Gao XX, Wu WW, et al. Impact of orally administered tramadol combined with self-selected music on adult outpatients with burns undergoing dressing change: A randomized controlled trial. *Burns.* 2020;46(4):850-859.
- Pastino A, Lakra A. Patient-Controlled Analgesia. [Updated 2023 Jan 29]. In: StatPearls [on-line]. Treasure Island (FL): StatPearls Publishing; 2024 Jan. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK551610/>.
- Souhrn údajů o přípravku Talgit 50 mg tvrdé tobolky [on-line] Státní ústav pro kontrolu léčiv. [cited 2023 Aug 16]. Available from: <http://www.sukl.cz/>.
- Emery MA, Shawn Bates ML, Wellman PJ, et al. Hydrocodone is More Effective than Morphine or Oxycodone in Suppressing the Development of Burn-Induced Mechanical Allodynia. *Pain Med.* 2017;18(11):2170-2180.
- Zeng Z, Lu J, Shu C, et al. A comparison of nalbuphine with morphine for analgesic effects and safety : meta-analysis of randomized controlled trials. *Sci Rep.* 2015;5:10927.
- Souhrn údajů o přípravku Nalbuphin Orpha 10 mg/ml injekční roztok [on-line] Státní ústav pro kontrolu léčiv. [cited 2023 Aug 18]. Available from: <http://www.sukl.cz/>.
- Hill DM, DeBoer E. State and Future Science of Opioids and Potential of Biased-ligand Technology in the Management of Acute Pain After Burn Injury. *J Burn Care Res.* 2023;44(3):524-534.
- Hinrichs M, Weyland A, Bantel C. "Piritramid : Eine kritische Übersicht" [Piritramid: A critical review]. 2017;31(4):345-352. doi: 10.1007/s00482-017-0197-y.
- Souhrn údajů o přípravku Dipidolor 7,5 mg/ml injekční roztok [on-line] Státní ústav pro kontrolu léčiv. [cited 2023 Oct 4]. Available from: <http://www.sukl.cz/>.
- Lee MC, Ploner M, Wiech K, et al. Amygdala activity contributes to the dissociative effect of cannabis on pain perception. *Pain.* 2013;154(1):124-134.
- Swartwood C, Salottolo K, Madayag R, et al. Efficacy of Dronabinol for Acute Pain Management in Adults with Traumatic Injury: Study Protocol of A Randomized Controlled Trial. *Brain Sci.* 2020;10(3):161.
- Griggs C, Goverman J, Bittner EA, et al. Sedation and Pain Management in Burn Patients. *Clin Plast Surg.* 2017;44(3):535-540.
- Wardhan R, Fahy BG. Regional Anesthesia and Acute Pain Management for Adult Patients with Burns. *J Burn Care Res.* 2023;44(4):791-799.
- de Castro RJ, Leal PC, Sakata RK. Pain management in burn patients. *Braz Anesthesiol.* 2013;63(1):149-153.
- Gray P, Kirby J, Smith MT, et al. Pregabalin in severe burn injury pain: a double-blind, randomised placebo-controlled trial. *Pain.* 2011;152(6):1279-1288.
- Chiang LJ, Lai PC, Huang YT. Effectiveness and Adverse Events of Gabapentinoids as Analgesics for Patients with Burn Injuries: A Systematic Review with Meta-Analysis and Trial Sequential Analysis. *Journal of Clinical Medicine.* 2023;12(15):5042.
- Lan X, Tan Z, Zhou T, et al. Use of Virtual Reality in Burn Rehabilitation: A Systematic Review and Meta-analysis. *Arch Phys Med Rehabil.* 2023;104(3):502-513.
- Vasantachart AY, Yeo E, Chau B. Virtual and Augmented Reality-based Treatments for Phantom Limb Pain: A Systematic Review. *Innov Clin Neurosci.* 2022;19(10-12):48-57. PMID: 36591552; PMCID: PMC9776775.
- Smith V, Warty RR, Sursas JA, et al. The Effectiveness of Virtual Reality in Managing Acute Pain and Anxiety for Medical Inpatients: Systematic Review. *J Med Internet Res.* 2020;22(11):e17980. doi: 10.2196/17980. PMID: 33136055; PMCID: PMC7669439.
- Ginandes C, Brooks P, Sando W, et al. Can medical hypnosis accelerate post-surgical wound healing? Results of a clinical trial. *Am J Clin Hypn.* 2003;45:333-351.
- Frenay MC, Faymonville ME, Devlieger S, et al. Psychological approaches during dressing changes of burned patients: a prospective randomised study comparing hypnosis against stress reducing strategy. *Burns* 2001;27:793-799.
- Barkhordari Ahmadi F, Sezavar M, Kashani I, et al. The effect of aromatherapy on pain, itching, state anxiety levels and respiratory distress in children with Burns: a systematic review. *Int J Pediatr.* 2020;8(10):11189-11196.
- Kemper KJ, Danhauer SC. Music as therapy. *South Med J.* 2005;98(3):282-288.
- Voss JK, Lozenski J, Hansen JK, et al. Sedation and Analgesia for Adult Outpatient Burn Dressing Change: A Survey of American Burn Association Centers. *J Burn Care Res.* 2020;41(2):322-327.
- Shiferaw A, Mola S, Gashaw A, Sintayehu A. Evidence-based practical guideline for procedural pain management and sedation for burn pediatrics patients undergoing wound care procedures. *Ann Med Surg (Lond).* 2022;83:104756.
- Wardhana A, Rachadian Ramadan M, Sugiarto A, et al. Analgesia for Dressing Changes in Burns: A Systematic Review. *Jurnal Plastik Rekonstruksi.* 2018;5(1):170-187.