OFIRMEV® (acetaminophen) for injection Reference Bibliography

This bibliography lists all identified manuscripts from PubMed of Randomized Controlled Clinical Trials and health economic and outcomes analyses (HEOR) studies, using intravenous acetaminophen (also known as paracetamol, especially outside the US)
Updated: February 2020

US Basic Science

1. Raffa RB, Pawasauskas J, Pergolizzi JV Jr, Lu L, Chen Y, Wu S, Jarrett B, Fain R, Hill L, Devarakonda K. Pharmacokinetics of oral and intravenous paracetamol (acetaminophen) when co-administered with intravenous morphine in healthy adult subjects. *Clin Drug Investig*. 2018;38(3):259-268. Link
2. Singla NK, Parulan C, Samson R, Hutchinson J, Bushnell R, Beja EG, Ang R, Royal MA. Plasma and cerebrospinal fluid pharmacokinetic parameters after single-dose administration of intravenous, oral, or rectal acetaminophen. *Pain Pract*. 2012;12(7):523-32. Link

US Non-Surgical

3. Ankumah N-AE, Tsao M, Hutchinson M, Pedroza C, Mehta J, Sibai BM, Chauhan SP, Blackwell SC, Refuerzo JS. Intravenous acetaminophen versus morphine for analgesia in labor: a randomized trial. *Am J Perinatol*. 2017;34(1):38-43. Link
4. Barnaby DP, Chertoff AE, Restivo AJ, Campbell CM, Pearlman S, White D, Bijur PE, Gallagher EJ. Randomized controlled trial of intravenous acetaminophen versus intravenous hydromorphone for the treatment of acute pain in the emergency department. *Ann Emerg Med*. 2019; 73(2):133-140. Link
5. Candiotti KA, Bergese SD, Viscusi ER, Singla SK, Royal MA, Singla NK. Safety of multiple-dose intravenous acetaminophen in adult inpatients. *Pain Med*. 2010;11(12):1841-8. Link
6. Chang AK, Bijur PE, Ata A, Campbell C, Pearlman S, White D, Chertoff A, Restivo A, Gallagher EJ. Randomized clinical trial of IV acetaminophen as an analgesic adjunct for older adults with acute severe pain. *Acad Emerg Med*. 2019;26(4):402-409. Link
7. Kett DH, Breitmeyer JB, Ang R, Royal MA. A randomized study of the efficacy and safety of intravenous acetaminophen vs. intravenous placebo for the treatment of fever. *Clin Pharmacol Ther*. 2011;90(1):32-9. Link
8. Meyering SH, Stringer RW, Hysell MK. Randomized trial of adding parenteral acetaminophen to prochlorperazine and diphenhydramine to treat headache in the emergency department. *West J Emerg Med.* 2017;18(3):373-381. Link
9. Peacock WF, Breitmeyer JB, Pan C, Smith WB, Royal MA. A randomized study of the efficacy and safety of intravenous acetaminophen compared to oral acetaminophen for the treatment of fever. *Acad Emerg Med*. 2011;18(4):360-6. Link
10. Schell-Chaple HM, Liu KD, Matthay MA, Sessler DI, Puntillo KA. Effects of IV acetaminophen on core body temperature and hemodynamic responses in febrile critically ill adults: a randomized controlled trial. *Crit Care Med*. 2017;45(7):1199-1207 Link
11. Sin B, Wai M, Tatunchak T, Motov SM. The use of intravenous acetaminophen for acute pain in the emergency department. *Acad Emerg Med*. 2016;23(5):543-553. Link
12. Sobieraj D, Martinez B, Miao B, Cicero M, Kamin R, Hernandez A, Coleman C, Baker W. Comparative effectiveness of analgesics to reduce acute pain in the prehospital setting. *Prehosp Emerg Care*. 2019;[published online: September 23, 2019]:1-12. Link

US Surgical

13. Apfel CC, Souza K, Portillo J, Dalal P, Bergese SD. Patient satisfaction with intravenous acetaminophen: A pooled analysis of five randomized, placebo-controlled studies in the acute postoperative setting. *J Healthc Qual*. 2015;37(3):155-62. Link
14. Apfel CC, Turan A, Souza K, Pergolizzi J, Hornuss C. Intravenous acetaminophen reduces postoperative nausea and vomiting: A systematic review and meta-analysis. *Pain*. 2013;154(5):677-89. Link
15. Altenau B, Crisp CC, Devaiah CG, Lambers DS. Randomized controlled trial of intravenous acetaminophen for post-cesarean delivery pain control. *Am J Obstet Gynecol*. 217(3):362.e1-e362.e6. Link
16. Atencio I, Beushausen M, Kowalczyk JJ, Flores-Hidalgo A, Fino NF, Baur DA. Use of intravenous acetaminophen in postoperative pain management after partial and full bony impacted third molar

extractions: a randomized double-blind controlled trial. *J Oral Maxillofac Surg*. 2018; 76(7):1414-1417. Link

17. Artime CA, Aijazi H, Zhang H, Syed T, Cai C, Gumbert SD, Ferrario L, C Normand K, Williams GW, Hagberg CA. Scheduled intravenous acetaminophen improves patient satisfaction with postcraniotomy pain management: a prospective, randomized, placebo-controlled, double-blind study. *J Neurosurg Anesthesiol*. 2018;30(3):231-236. Link
18. Aryaie AH, Lalezari S, Sergent WK, Puckett Y, Juergens C, Ratermann C, Ogg C. Decreased opioid consumption and enhance recovery with the addition of IV Acetaminophen in colorectal patients: a prospective, multi-institutional, randomized, double-blinded, placebo-controlled study (DOCIVA study). *Surg Endosc*. 2018;32(8):3432-3438. Link
19. Billings FT 4th, Petracek MR, Roberts LJ 2nd, Pretorius M. Perioperative intravenous acetaminophen attenuates lipid peroxidation in adults undergoing cardiopulmonary bypass: A randomized clinical trial. *PLoS One*. 2015;10(2):e0117625. Link
20. Blank JJ, Berger NG, Dux JP, Ali F, Ludwig KA, Peterson CY. The impact of intravenous acetaminophen on pain after abdominal surgery: a meta-analysis. *J Surg Res*. 2018;227:234-245. Link
21. Burbridge MA, Stone SA, Jaffe RA. Acetaminophen does not reduce postoperative opiate consumption in patients undergoing craniotomy for cerebral revascularization: a randomized control trial. *Cureus.* 2019;11(1):e3863 Link
22. Cooke FE, Samuels JD, Pomp A, Gadalla F, Wu X, Afaneh C, Dakin GF, Goldstein PA. A randomized, double-blind, placebo-controlled trial of intravenous acetaminophen on hospital length of stay in obese individuals undergoing sleeve gastrectomy. *Obes Surg*. 2018; 28(10):2998-3006. Link
23. Crisp CC, Khan M, Lambers DL, Westermann LB, Mazloomdoost DM, Yeung JJ, Kleeman SD, Pauls RN. The Effect of intravenous acetaminophen on postoperative pain and narcotic consumption after vaginal reconstructive surgery: a double-blind randomized placebo-controlled trial. *Female Pelvic Med Reconstr Surg.* 2017;23(2):80-85. Link
24. Daniels SE, Playne R, Stanescu I, Zhang J, Gottlieb IJ, Atkinson HC. Efficacy and safety of an intravenous acetaminophen/ibuprofen fixed-dose combination after bunionectomy: a randomized, double-blind, factorial, placebo-controlled trial. *Clin Ther*. 2019;41(10):1982-1995]. Link
25. De Oliveira GSJ, Rodes ME, Bialek J, Kendall MC, McCarthy RJ. Single dose systemic acetaminophen to improve patient reported quality of recovery after ambulatory segmental mastectomy: A prospective, randomized, double-blinded, placebo controlled, clinical trial. *Breast J*. 2018;24(3):240-244. Link
26. De Oliveira GS Jr, Castro-Alves LJ, McCarthy RJ. Single-dose systemic acetaminophen to prevent postoperative pain: A meta-analysis of randomized controlled trials. *Clin J Pain*. 2015;31(1):86-93. Link
27. El Chaar M, Stoltzfus J, Claros L, Wasylik T. IV acetaminophen results in lower hospital costs and emergency room visits following bariatric surgery: A double-blind, prospective, randomized trial in a single accredited bariatric center. *J Gastrointest Surg*. 2016;20(4):715-24. Link
28. Fearon JA, Dimas V, Ditthakasem K, Herbert MA. A randomized controlled trial of oral versus intravenous administration of a nonnarcotic analgesia protocol following pediatric craniosynostosis corrections on nausea and vomiting rates. *J Craniofac Surg*. 2015;26(6):1951-3. Link
29. Greenberg S, Murphy GS, Avram MJ, Shear T, Benson J, Parikh KN, Patel A, Newmark R, Patel V, Bailes J, Szokol JW. Postoperative intravenous acetaminophen for craniotomy patients: a randomized controlled trial. *World Neurosurg*. 2018;109:e554-e562. Link
30. Gupta A, Abubaker H, Demas E, Ahrendtsen L. A randomized trial comparing the safety and efficacy of intravenous ibuprofen versus ibuprofen and acetaminophen in knee or hip arthroplasty. *Pain Physician*. 2016;19(6):349-356. Link
31. Hammer GB, Maxwell LG, Taicher BM, Visoiu M, Cooper DS, Szmuk P, Pheng LH, Gosselin NH, Lu J, Devarakonda K. Randomized population pharmacokinetic analysis and safety of intravenous acetaminophen for acute postoperative pain in neonates and infants. *J Clin Pharmacol*. 2020; 60(1):16-27. Link
32. Hickman SR, Mathieson KM, Bradford LM, Garman CD, Gregg RW, Lukens DW. Randomized trial of oral versus intravenous acetaminophen for postoperative pain control. *Am J Health Syst Pharm*. 2018;75(6):367-375. Link

33. Jelacic S, Bollag L, Bowdle A, Rivat C, Cain KC, Richebe P. Intravenous acetaminophen as an adjunct analgesic in cardiac surgery reduces opioid consumption, but not opioid related adverse effects: a randomized controlled trial. *J Cardiothorac Vasc Anesth*. 2016;30(4):997-1004. Link
34. Lange M, Lee CW, Knisely T, Perla S, Barber K, Kia M. Efficacy of intravenous acetaminophen in length of stay and postoperative pain control in laparoscopic Roux-en-Y Gastric bypass surgery patients. *Bariatr Surg Pract Patient Care*. 2018;13(3):103-108. Link
35. Lombardi TM, Kahn BS, Tsai LJ, Waalen JM, Wachi N. Preemptive oral compared with intravenous acetaminophen for postoperative pain after robotic-assisted laparoscopic hysterectomy: a randomized controlled trial. *Obstet Gynecol*. 2019;134(6):1293-1297. Link.
36. Mamoun NF, Lin P, Zimmerman NM, Mascha EJ, Mick SL, Insler SR, Sessler DI, Duncan AE. Intravenous acetaminophen analgesia after cardiac surgery: A randomized, blinded, controlled superiority trial. *J Thorac Cardiovasc Surg*. 2016;152(3):881-889.e1. Link.
37. Nour C, Ratsiu J, Singh N, Mason L, Ray A, Martin M, Hassanian M, Uhler J, Applegate RL. Analgesic effectiveness of acetaminophen for primary cleft palate repair in young children: A randomized placebo controlled trial. *Paediatr Anaesth*. 2014;24(6):574-81. Link
38. O'Neal JB, Freiberg AA, Yelle MD, Jiang Y, Zhang C, Gu Y, Kong X, Jian W, O'Neal WT, Wang J. Intravenous vs oral acetaminophen as an adjunct to multimodal analgesia after total knee arthroplasty: a prospective, randomized, double-blind clinical trial. *J Arthroplasty*. 2017;32(10):3029-3033. Link
39. Patel A, Pai B H P, Diskina D, Reardon B, Lai YH. Comparison of clinical outcomes of acetaminophen IV vs PO in the peri-operative setting for laparoscopic inguinal hernia repair surgeries: A triple-blinded, randomized controlled trial. *J Clin Anesth*. 2020;61:109628. Link
40. Plunkett A, Haley C, McCoart A, Beltran T, Highland KB, Berry-Caban C, Lamberth S, Bartoszek M. A preliminary examination of the comparative efficacy of intravenous vs oral acetaminophen in the treatment of perioperative pain. *Pain Med*. 2017;18(12):2466-2473. Link
41. Politi JR, Davis RL 2nd, Matrka AK. Randomized prospective trial comparing the use of intravenous versus oral acetaminophen in total joint arthroplasty. *J Arthroplasty*. 2017;32(4):1125-1127. Link.
42. Rakowski JA, Holloway RW, Ahmad S, Jeppson CN, James JA, Ghurani GB, Bigsby GE, Kendrick JE. A prospective randomized trial of intravenous ketorolac vs. acetaminophen administered with opioid patient-controlled analgesia in gynecologic surgery. *Gynecol Oncol*. 2019;155(3):468-472. Link
43. Reagan KML, O'Sullivan DM, Gannon R, Steinberg AC. Decreasing postoperative narcotics in reconstructive pelvic surgery: a randomized controlled trial. *Am J Obstet Gynecol*. 2017;217(3):325.e1-e325.e10. Link
44. Rindos NB, Mansuria SM, Ecker AM, Stuparich MA, King CR. Intravenous acetaminophen versus saline in perioperative analgesia with laparoscopic hysterectomy. *Am J Obstet Gynecol*. 2019;220(4):373.e1-373.e8 Link.
45. Rizkalla N, Zane NR, Prodell JL, Elci OU, Maxwell LG, DiLiberto MA, Zuppa AF. Use of intravenous acetaminophen in children for analgesia after spinal fusion surgery: a randomized clinical trial. *J Pediatr Pharmacol Ther*. 2018;23(5):395-404. Link
46. Roberts CA, Shah-Becker S, O'Connell Ferster A, Baker A, Stahl LE, Sedeek K, Carr MM. Randomized prospective evaluation of intraoperative intravenous acetaminophen in pediatric adenotonsillectomy. *Otolaryngol Head Neck Surg*. 2018;158(2):368-374. Link
47. Simpson SA, Zaccagni H, Bichell DP, et al. Acetaminophen attenuates lipid peroxidation in children undergoing cardiopulmonary bypass. *Pediatr Crit Care Med*. 2014;15(6):503-10. Link
48. Singla NK, Hale ME, Davis JC, et al. IV acetaminophen: Efficacy of a single dose for postoperative pain after hip arthroplasty: Subset data analysis of 2 unpublished randomized clinical trials. *Am J Ther*. 2015;22(1):2-10. Link
49. Sivakumar W, Jensen M, Martinez J, Tanana M, Duncan N, Hoesch R, Riva-Cambrin JK, Kilburg C, Ansari S, House PA. Intravenous acetaminophen for postoperative supratentorial craniotomy pain: a prospective, randomized, double-blinded, placebo-controlled trial. *J Neurosurg*. 2018;130(3):766-722. Link
50. Sola R Jr, Desai AA, Gonzalez KW, Doyle NM, Weaver KL, Poola AS, Fraser JD, St Peter SD, Millspaugh DL. Does intravenous acetaminophen improve postoperative pain control after laparoscopic appendectomy for perforated appendicitis? a prospective randomized trial. *Eur J Pediatr Surg*. 2019;29(2):159-165.Link

51. Strode MA, Sherman W, Mangieri CW, et al. Randomized trial of OFIRMEV versus placebo for pain management after laparoscopic sleeve gastrectomy. *Surg Obes Relat Dis*. 2016;12(4):772-777. Link
52. Suarez JC, Al-Mansoori AA, Kanwar S, Villa JM, McNamara CA, Patel PD. Effectiveness of novel adjuncts in pain management following total knee arthroplasty: a randomized clinical trial. *J Arthroplasty*. 2018;33(7S):S136-S141. Link
53. Subramaniam B, Shankar P, Shaefi S, Mueller A, O'Gara B, Banner-Goodspeed V, Gallagher J, Gasangwa D, Patxot M, Packiasabapathy S, Mathur P, Eikermann M, Talmor D, Marcantonio ER. Effect of intravenous acetaminophen vs placebo combined with propofol or dexmedetomidine on postoperative delirium among older patients following cardiac surgery: the DEXACET randomized clinical trial. *JAMA*. 2019;321(7):686-696. Link
54. Susheela AT, Packiasabapathy S, Gasangwa D-V, Patxot M, O'Neal J, Marcantonio E, Subramaniam B. The use of dexmedetomidine and intravenous acetaminophen for the prevention of postoperative delirium in cardiac surgery patients over 60 years of age: a pilot study. *F1000Res*. 2017;6:1842. [revised December 21, 2017]. Link
55. Takeda Y, Fukunishi S, Nishio S, Yoshiya S, Hashimoto K, Simura Y. Evaluating the effect of intravenous acetaminophen in multimodal analgesia after total hip arthroplasty: a randomized controlled trial. *J Arthroplasty. 2019;[published February 25, 2019]* Link.
56. Thung AK, Elmaraghy CA, Barry N, Tumin D, Jatana KR, Rice J, Raman V, Bhalla T, Martin DP, Corridore M, Tobias JD. Double-blind randomized placebo-controlled trial of single-dose intravenous acetaminophen for pain associated with adenotonsillectomy in pediatric patients with sleep-disordered breathing. *J Pediatr Pharmacol Ther*. 2017;22(5):344-351. Link
57. Turan A, Karimi N, Zimmerman NM, Mick SL, Sessler DI, Mamoun N. Intravenous acetaminophen does not decrease persistent surgical pain after cardiac surgery. *J Cardiothorac Vasc Anesth*. 2017;31(6):2058-2064. Link
58. Turner LC, Zyczynski HM, Shepherd JP. Intravenous acetaminophen before pelvic organ prolapse repair: a randomized controlled trial. *Obstet Gynecol*. 2019; 133(3):492-502 Link
59. Towers CV, Shelton S, van Nes J, Gregory E, Liske E, Smalley A, Mobley E, Faircloth B, Fortner KB. Preoperative cesarean delivery intravenous acetaminophen treatment for postoperative pain control: a randomized double-blinded placebo control trial. *Am J Obstet Gynecol*. 2018;218(3):353.e1-353.e4. Link
60. Tyler MA, Lam K, Ashoori F, Cai C, Kain JJ, Fakhri S, Citardi MJ, Cattano D, Luong A. Analgesic effects of intravenous acetaminophen vs placebo for endoscopic sinus surgery and postoperative pain: a randomized clinical trial. *JAMA Otolaryngol Head Neck Surg*. 2017;143(8):788-794 Link
61. Viswanath A, Oreadi D, Finkelman M, Klein G, Papageorge M. Does pre-emptive administration of intravenous ibuprofen (Caldolor) or intravenous acetaminophen (Ofirmev) reduce postoperative pain and subsequent narcotic consumption after third molar surgery? *J Oral Maxillofac Surg*. 2019; 77(2):262-270. Link
62. Wang VC, Preston MA, Kibel AS, Xu X, Gosnell J, Yong RJ, Urman RD. A prospective, randomized, double-blind, placebo-controlled trial to evaluate intravenous acetaminophen versus placebo in patients undergoing robotic-assisted laparoscopic prostatectomy. *J Pain Palliat Care Pharmacother*. 2018;32(2-3):82-89. Link.
63. Westrich GH, Birch GA, Muskat AR, Padgett DE, Goytizolo EA, Bostrom MP, Mayman DJ, Lin Y, YaDeau JT. Intravenous vs oral acetaminophen as a component of multimodal analgesia after total hip arthroplasty: a randomized, blinded trial. *J Arthroplasty.* 2019;34(7S):S215-S220. Link.
64. Wilson SH, Wolf BJ, Robinson SM, Nelson C, Hebbar L. Intravenous vs oral acetaminophen for analgesia after cesarean delivery: a randomized trial. *Pain Med*. 2019;20(8):1584-1591. Link
65. Wininger SJ, Miller H, Minkowitz HS, Royal MA, Ang RY, Breitmeyer JB, Singla NK. A randomized, double-blind, placebo-controlled, multicenter, repeat-dose study of two intravenous acetaminophen dosing regimens for the treatment of pain after abdominal laparoscopic surgery. *Clin Ther*. 2010;32(14):2348-69. Link
66. Ziemann-Gimmel P, Goldfarb AA, Koppman J, Marema RT. Opioid-free total intravenous anaesthesia reduces postoperative nausea and vomiting in bariatric surgery beyond triple prophylaxis. *Br J Anaesth*. 2014;112(5):906-11. Link

Outside US – Basic Sciences

67. Chiam E, Weinberg L, Bailey M, McNicol L, Bellomo R. The haemodynamic effects of intravenous paracetamol (acetaminophen) in healthy volunteers: A double-blinded, randomized, triple crossover trial. *Br J Clin Pharmacol*. 2016:81(4):605-12. Link
68. Flint RB, Roofthooft DW, van Rongen A, van Lingen RA, van den Anker JN, van Dijk M, Allegaert K, Tibboel D, Knibbe CAJ, Simons SHP. Exposure to acetaminophen and all its metabolites upon 10, 15, and 20 mg/kg intravenous acetaminophen in very-preterm infants. *Pediatr Res*. 2017;82(4):678-684. Link
69. Pickering G, Moustafa F, Desbrandes S, Cardot JM, Roux D, Dubray C. Paracetamol and opioid pathways: A pilot randomized clinical trial. *Fundam Clin Pharmacol*. 2013;27(3):339-45. Link

Outside US – Non-Surgical

70. Abd-El-Maeboud KH, Elbohoty AE, Mohammed WE, Elgamel HM, Ali WA. Intravenous infusion of paracetamol for intrapartum analgesia. *J Obstet Gynaecol Res*. 2014;40(11):2152-7. Link
71. Abd El-Mashad E-R, El-Mahdy H, El Amrousy D, Elgendy M. Comparative study of the efficacy and safety of paracetamol, ibuprofen, and indomethacin in closure of patent ductus arteriosus in preterm neonates. *Eur J Pediatr*. 2017;176(2):233-240. Link
72. Abdollahi MH, Mojibian M, Pishgahi A, Mallah F, Dareshiri S, Mohammadi S, Naghavi-Behzad M. Intravenous paracetamol versus intramuscular pethidine in relief of labour pain in primigravid women. *Niger Med J*. 2014;55(1):54-7. Link
73. Ahmadi A, Amri P, Shokri J, Hajian K. Comparison of the analgesic effect of intravenous paracetamol/midazolam and fentanyl in preparation of patients for colonoscopy: A double blind randomized clinical trial. *Caspian J Intern Med*. 2015;6(2):87-92. Link
74. Akinci N, Bakan N, Karaoren G, Tomruk SG, Sokmen HM, Yanli Y, Akcay ME. Comparison of Clinical Effects of Dexketoprofen and Paracetamol Used for Analgesia in Endoscopic Retrograde Cholangiopancreatography. *Turk J Anaesthesiol Reanim*. 2016;44(1):13-20. Link.
75. Aksel G, Guler S, Dogan NO, Corbacioglu SK. A randomized trial comparing intravenous paracetamol, topical lidocaine, and ice application for treatment of pain associated with scorpion stings. *Hum Exp Toxicol*. 2015;34(6):662-7. Link
76. Al B, Sunar MM, Zengin S, Sabak M, Bogan M, Can B, Kul S, Murat Oktay M, Eren SH. Comparison of intravenous dexketoprofen trometamol, fentanyl, and paracetamol in the treatment of patients admitted to the emergency department for renal colic: A randomized controlled trial. *Am J Emerg Med*. 2018;36(4):571-576. Link
77. Azizkhani R, Pourafzali SM, Baloochestani E, Masoumi B. Comparing the analgesic effect of intravenous acetaminophen and morphine on patients with renal colic pain referring to the emergency department: A randomized controlled trial. *J Res Med Sci*. 2013;18(9):772-6. Link
78. Bektas F, Eken C, Karadeniz O, Goksu E, Cubuk M, Cete Y. Intravenous paracetamol or morphine for the treatment of renal colic: A randomized, placebo-controlled trial. *Ann Emerg Med*. 2009;54(4):568-74. Link
79. Borazan H, Erdem TB, Kececioglu M, Otelcioglu S. Prevention of pain on injection of propofol: A comparison of lidocaine with different doses of paracetamol. *Eur J Anaesthesiol*. 2010;27(3):253-7. Link
80. Canbay O, Celebi N, Arun O, Karagoz AH, Saricaoglu F, Ozgen S. Efficacy of intravenous acetaminophen and lidocaine on propofol injection pain. *Br J Anaesth*. 2008;100(1):95-8. Link
81. Cenker E, Serinken M, Uyanik E. Intravenous paracetamol vs ibuprofen in renal colic: a randomised, double-blind, controlled clinical trial. *Urolithiasis*. 2018; 46(4):369-373. Link
82. Craig M, Jeavons R, Probert J, Benger J. Randomised comparison of intravenous paracetamol and intravenous morphine for acute traumatic limb pain in the emergency department. *Emerg Med J*. 2012;29(1):37-9. Link
83. Cuvillon P, Zoric L, Demattei C, Alonso S, Casano F, L'hermite J, Ripart J, Lefrant J-Y, Muller L. Opioid-sparing effect of nefopam in combination with paracetamol after major abdominal surgery: a randomized double-blind study. Minerva Anestesiol. 2017;83(9):914-920. Link
84. Demirozogul E, Yilmaz A, Ozen M, Turkcuer I, Seyit M, Arikan C. Intravenous dexketoprofen versus paracetamol in non-traumatic musculoskeletal pain in the emergency department: a randomized clinical trial. *Am J Emerg Med*. 2019; 2019 Dec;37(12):2136-21424, 2019]. Link

85. Duhamel JF, Le Gall E, Dalphin ML, Payen-Champenois C. Antipyretic efficacy and safety of a single intravenous administration of 15 mg/kg paracetamol versus 30 mg/kg propacetamol in children with acute fever due to infection. *Int J Clin Pharmacol Ther*. 2007;45(4):221-9. Link
86. Eken C, Serinken M, Elicabuk H, Uyanik E, Erdal M. Intravenous paracetamol versus dexketoprofen versus morphine in acute mechanical low back pain in the emergency department: A randomised double-blind controlled trial. *Emerg Med J*. 2014;31(3):177-81. Link
87. Elbohoty AE, Abd-Elrazek H, Abd-El-Gawad M, Salama F, El-Shorbagy M, Abd-El-Maeboud KH. Intravenous infusion of paracetamol versus intravenous pethidine as an intrapartum analgesic in the first stage of labor. *Int J Gynaecol Obstet*. 2012;118(1):7-10. Link
88. Esmailian M, Moshiri R, Zamani M. Comparison of the analgesic effect of intravenous acetaminophen and morphine sulfate in rib fracture; a randomized double-blind clinical trial. *Emerg (Tehran)*. 2015;3(3):99-102. Link
89. Evron S, Ezri T, Protianov M, et al. The effects of remifentanil or acetaminophen with epidural ropivacaine on body temperature during labor. *J Anesth*. 2008;22(2):105-11. Link
90. Faridaalaee G, Rahmani SH, Mehryar H, et al. Comparison of intravenous metoclopramide and acetaminophen in primary headaches: A randomized controlled trial. *Emerg (Tehran)*. 2015;3(2):70-4. Link
91. Farnia MR, Babaei R, Shirani F, et al. Analgesic effect of paracetamol combined with low-dose morphine versus morphine alone on patients with biliary colic: A double blind, randomized controlled trial. *World J Emerg Med*. 2016;7(1):25-9. Link
92. Filitz J, Ihmsen H, Gunther W, et al. Supra-additive effects of tramadol and acetaminophen in a human pain model. *Pain*. 2008;136(3):262-70. Link
93. Furyk J, Levas D, Close B, Laspina K, Fitzpatrick M, Robinson K, Vangaveti VN, Ray R. Intravenous versus oral paracetamol for acute pain in adults in the emergency department setting: a prospective, double-blind, double-dummy, randomised controlled trial. *Emerg Med J*. 2018;35(3):179-184. Link
94. Ghaderian M, Armanian AM, Sabri MR Montaseri M. Low-dose intravenous acetaminophen versus oral ibuprofen for the closure of patent ductus arteriosus in premature neonates. *J Res Med Sci.* 2019;24:13 Link.
95. Grissa MH, Claessens YE, Bouida W, et al. Paracetamol vs piroxicam to relieve pain in renal colic. results of a randomized controlled trial. *Am J Emerg Med*. 2011;29(2):203-6. Link
96. Gulen B, Dur A, Serinken M, Karcioglu O, Sonmez E. Pain treatment in patients with acute pancreatitis: A randomized controlled trial. *Turk J Gastroenterol*. 2016;27(2):192-6. Link
97. Gupta K, Mitra S, Kazal S, Saroa R, Ahuja V, Goel P. I.V. paracetamol as an adjunct to patient-controlled epidural analgesia with levobupivacaine and fentanyl in labour: a randomized controlled study. *Br J Anaesth*. 2016;117(5):617-622. Link
98. Harkin P, Harma A, Aikio O, Valkama M, Leskinen M, Saarela T, Hallman M. Paracetamol accelerates closure of the ductus arteriosus after premature birth: a randomized trial. *J Pediatr*. 2016;177:72-77.e2. Link.
99. Hochwald O, Mainzer G, Borenstein-Levin L, Jubran H, Dinur G, Zucker M, Mor M, Khoury A, Kugelman A. adding paracetamol to Ibuprofen for the treatment of patent ductus arteriosus in preterm infants: a double-blind, randomized, placebo-controlled pilot study. *Am J Perinatol*. 2018; 35(13):1319-1325. Link
100. Honarmand H, Abdollahi M, Ahmadi A, et al. Randomized trial of the effect of intravenous paracetamol on inflammatory biomarkers and outcome in febrile critically ill adults. *Daru*. 2012;20(1):12. Link
101. Huang X, Wang F, Wang K. Paracetamol versus ibuprofen for the treatment of patent ductus arteriosus in preterm neonates: a meta-analysis of randomized controlled trials. *J Matern Fetal Neonatal Med*. 2018;31(16):2216-2222. Link
102. Imani F, Faiz HR, Sedaghat M, Hajiashrafi M. Effects of adding ketamine to fentanyl plus acetaminophen on postoperative pain by patient controlled analgesia in abdominal surgery. Anesth Pain Med. 2014;4(1):e12162. Link
103. Ing Lorenzini K, Besson M, Daali Y, Salomon D, Dayer P, Desmeules J. A randomized, controlled trial validates a peripheral supra-additive antihyperalgesic effect of a paracetamol-ketorolac combination. *Basic Clin Pharmacol Toxicol*. 2011;109(5):357-64. Link
104. Jalili M, Mozaffarpour Noori A, Sedaghat M, Safaie A. Efficacy of intravenous paracetamol versus intravenous morphine in acute limb trauma. *Trauma Mon*. 2016;21(1):e19649. Link

105. Jeon Y, Baek SU, Park SS, Kim SO, Baek WY, Yeo JS. Effect of pretreatment with acetaminophen on withdrawal movements associated with injection of rocuronium: A prospective, randomized, double-blind, placebo controlled study. *Korean J Anesthesiol*. 2010;59(1):13-6. Link
106. Juujarvi S, Kallankari H, Patsi P, Leskinen M, Saarela T, Hallman M, Aikio O. Follow-up study of the early, randomised paracetamol trial to preterm infants, found no adverse reactions at the two-years corrected age. *Acta Paediatr*. 2019;108(3):452-458. Link
107. Karaaslan E, Akbas S, Ozkan AS, Zayman EP. Effects of preemptive intravenous paracetamol and ibuprofen on headache and myalgia in patients after electroconvulsive therapy: A placebo-controlled, double-blind, randomized clinical trial. *Medicine (Baltimore)*. 2019;98(51):e18473. Link.
108. Kaur Makkar J, Jain K, Bhatia N, Jain V, Mal Mithrawal S. Comparison of analgesic efficacy of paracetamol and tramadol for pain relief in active labor. *J Clin Anesth*. 2015;27(2):159-63. Link
109. Kaynar M, Koyuncu F, Buldu I, et al. Comparison of the efficacy of diclofenac, acupuncture, and acetaminophen in the treatment of renal colic. *Am J Emerg Med*. 2015;33(6):749-53. Link
110. Kelly SJ, Moran JL, Williams PJ, Burns K, Rowland A, Miners JO, Peake SL. Haemodynamic effects of parenteral vs. enteral paracetamol in critically ill patients: a randomised controlled trial. *Anaesthesia*. 2016;71(10):1153-1162. Link
111. Kouchek M, Mansouri B, Mokhtari M, Goharani R, Miri MM, Sistanizad M. A comparative study of intravenous paracetamol and fentanyl for pain management in ICU. *Iran J Pharm Res*. 2013;12(1):193-8. Link
112. Lallar M, Anam HU, Nandal R, Singh SP, Katyal S. Intravenous paracetamol infusion versus intramuscular tramadol as an intrapartum labor analgesic. *J Obstet Gynaecol India*. 2015;65(1):17-22. Link
113. Leinisch E, Evers S, Kaempfe N, Sostak P, Jürgens T, Straube A, May A. Evaluation of the efficacy of intravenous acetaminophen in the treatment of acute migraine attacks: A double-blind, placebo-controlled parallel group multicenter study. *Pain*. 2005;117(3):396-400. Link
114. Manne VSSK, Gondi SR. Comparative Study of the Effect of intravenous paracetamol and tramadol in relieving of postoperative pain after general anesthesia in nephrectomy patients. *Anesth Essays Res*. 2017;11(1):117-120. Link
115. Mahshidfar B, Rezai M, Abbasi S, Farsi D, Hafezimoghadam P, Mofidi M, Almasi R, Khosravi S. Intravenous acetaminophen vs. ketorolac in terms of pain management in prehospital emergency services: a randomized clinical trial. *Adv J Emerg Med*. 2019;3(4):e37. Link
116. Masoumi K, Forouzan A, Asgari Darian A, Feli M, Barzegari H, Khavanin A. Comparison of clinical efficacy of intravenous acetaminophen with intravenous morphine in acute renal colic: a randomized, double-blind, controlled trial. *Emerg Med Int*. 2014;2014:571326. Link
117. Medina-Vera AJ, Novoa LM. Reduced anaesthetic requirements and postoperative analgesics in patients undergoing laparoscopic cholecystectomy: premedication with intravenous paracetamol versus ketorolac, a double blind and randomised clinical trial. *Rev Esp Anestesiol Reanim*. 2017;64(2):64-70. Link
118. Momeni M, Vahidi E, Badrizadeh M, Naderpour Z, Saeedi M. Oral diclofenac potassium versus intravenous acetaminophen in acute, isolated, closed-limb trauma. *Adv Emerg Nurs J*. 2019;41(1):48-55. Link
119. Munsterhjelm E, Niemi TT, Ylikorkala O, Neuvonen PJ, Rosenberg PH. Influence on platelet aggregation of I.V. parecoxib and acetaminophen in healthy volunteers. *Br J Anaesth*. 2006;97(2):226-31. Link
120. Paramba FC, Naushad VA, Purayil N, Mohammed OH, Chandra P. Randomized controlled study of the antipyretic efficacy of oral paracetamol, intravenous paracetamol, and intramuscular diclofenac in patients presenting with fever to the emergency department. *Ther Clin Risk Manag*. 2013;9:371-6. Link
121. Parker SL, Saxena M, Gowardman J, Lipman J, Myburgh J, Roberts JA. Population pharmacokinetics of intravenous paracetamol in critically ill patients with traumatic brain injury. *J Crit Care*. 2018;47:15-20. Link
122. Pathan SA, Mitra B, Straney LD, et al. Delivering safe and effective analgesia for management of renal colic in the emergency department: A double-blind, multigroup, randomised controlled trial. *Lancet*. 2016:387(10032):1999-2007. Link

123. Pickering G, Moustafa F, Macian N, Schmidt J, Pereira B, Dubray C. A new transmucous-buccal formulation of acetaminophen for acute traumatic pain: A non-inferiority, randomized, double-blind, clinical trial. *Pain Physician*. 2015;18(3):249-57. Link
124. Roy S, Simalti AK. Comparison of antipyretic efficacy of intravenous (IV) acetaminophen versus oral (PO) acetaminophen in the management of fever in children. *Indian J Pediatr*. 2018;85(1):1-4. Link
125. Saxena MK, Taylor C, Billot L, Bompoint S, Gowardman J, Roberts JA, Lipman J, Myburgh Jl. The effect of paracetamol on core body temperature in acute traumatic brain injury: A randomised, controlled clinical trial. *PLoS One*. 2015;10(12):e0144740. Link
126. Scharbert G, Gebhardt K, Sow Z, Duris M, Deusch E, Kozek-Langenecker S. Point-of-care platelet function tests: Detection of platelet inhibition induced by nonopioid analgesic drugs. *Blood Coagul Fibrinolysis*. 2007;18(8):775-80. Link
127. Serinken M, Eken C, Gungor F, Emet M, Al B. Comparison of intravenous morphine vs paracetamol in sciatica: A randomized placebo controlled trial. *Acad Emerg Med*. 2016;23(6):674-678. Link
128. Serinken M, Eken C, Turkcuer I, Elicabuk H, Uyanik E, Schultz CH. Intravenous paracetamol versus morphine for renal colic in the emergency department: A randomised double-blind controlled trial. *Emerg Med J*. 2012;29(11):902-5. Link
129. Serinken M, Eken C, Karcioglu O. IV dexketoprofen vs. IV paracetamol in patients presented with dysmenorrhea to emergency department: a randomized controlled trial. *Balkan Med J*. 2018; 35(4):301-305. Link
130. Shams Vahdati S, Morteza Baghi HR, Ghobadi J, Rajaei Ghafouri R, Habibollahi P. Comparison of paracetamol (Apotel(R)) and morphine in reducing post pure head trauma headache. *Anesth Pain Med*. 2014;4(3):e14903. Link
131. Tasmacioglu B, Aydinli I, Keskinbora K, Pekel AF, Salihoglu T, Sonsuz A. Effect of intravenous administration of paracetamol on morphine consumption in cancer pain control. *Support Care Cancer*. 2009;17(12):1475-81. Link
132. Tsaganos T, Tseti IK, Tziolos N, Soumelas G-S, Koupetori M, Pyrpasopoulou A, Akinosoglou K, Gogos C, Tsokos N, Karagiannis A, Sympardi S, Giamarellos-Bourboulis EJ. Randomized controlled multicenter clinical trial of the antipyretic effect of intravenous paracetamol in patients admitted to hospital with infection. *Br J Clin Pharmacol*. 2017;83(4):742-750. Link
133. Turkcuer I, Serinken M, Eken C, Yilmaz A, Akdag Ö, Uyan E, Kiray C, Elicabuk H. Intravenous paracetamol versus dexketoprofen in acute migraine attack in the emergency department: A randomised clinical trial. *Emerg Med J*. 2014;31(3):182-5. Link
134. Yilmaz A, Sabirli R, Ozen M, Turkcuer I, Erdur B, Arikan C, Demirozogul E, Sarohan A, Seyit M, Ok N. Intravenous paracetamol versus dexketoprofen in acute musculoskeletal trauma in the emergency department: A randomised clinical trial. *Am J Emerg Med*. 2019; 37(5):902-908. Link
135. Young P, Saxena M, Bellomo R, Freebairn R, Hammond N, van Haren F, Holliday M, Henderson S, Mackle D, McArthur C, McGuinness S, Myburgh J, Weatherall M, Webb , Beasley R; HEAT Investigators; Australian and New Zealand Intensive Care Society Clinical Trials Group. Acetaminophen for fever in critically ill patients with suspected infection. *N Engl J Med*. 2015;373(23):2215-24. Link
136. Zare MA, Ghalyaie AH, Fathi M, Farsi D, Abbasi S, Hafezimoghadam P. Oral oxycodone plus intravenous acetaminophen versus intravenous morphine sulfate in acute bone fracture pain control: A double-blind placebo-controlled randomized clinical trial. *Eur J Orthop Surg Traumatol*. 2014;24(7):1305-9. Link

Outside US – Surgical

137. Abdulla S, Eckhardt R, Netter U, Abdulla W. A randomized, double-blind, controlled trial on non-opioid analgesics and opioid consumption for postoperative pain relief after laparoscopic cholecystectomy. *Acta Anaesthesiol Belg*. 2012;63(1):43-50. Link
138. Abdulla S, Eckhardt R, Netter U, Abdulla W. Efficacy of three IV non-opioid-analgesics on opioid consumption for postoperative pain relief after total thyroidectomy: A randomised, double-blind trial. *Middle East J Anaesthesiol*. 2012;21(4):543-52. Link
139. Abdulla S, Eckhardt R, Netter U, Abdulla W. Randomized, double-blind, placebo-controlled study to assess the efficacy of nonopioid analgesics on pain following arthroscopic knee surgery. *Pain Res Treat*. 2012;2012:305821. Link
140. Acmaz G, Aksoy H, Ozoglu N, Aksoy U, Albayrak E. Effect of paracetamol, dexketoprofen trometamol, lidocaine spray, and paracervical block application for pain relief during suction termination of first-trimester pregnancy. *Biomed Res Int*. 2013;2013:869275. Link
141. Akcali GE, Iskender A, Demiraran Y, et al. Randomized comparison of efficacy of paracetamol, lornoxicam, and tramadol representing three different groups of analgesics for pain control in extracorporeal shockwave lithotripsy. *J Endourol*. 2010;24(4):615-20. Link
142. Akil A, Api O, Bektas Y, Yilmaz AO, Yalti S, Unal O. Paracetamol vs dexketoprofen for perineal pain relief after episiotomy or perineal tear. *J Obstet Gynaecol*. 2014;34(1):25-8. Link
143. Akinci G, Hatipoglu Z, Gulec E, Ozcengiz D. Effects of ultrasound-guided thoracic paravertebral block on postoperative pain in children undergoing percutaneous nephrolithotomy. *Turk J Anaesthesiol Reanim*. 2019;47(4):295-300. Link
144. Aksoy M, Ince I, Ahiskalioglu A, Keles S, Doymus O. Effect of intravenous preoperative versus postoperative paracetamol on postoperative nausea and vomiting in patients undergoing strabismus surgery: A prospective randomized study. *Agri*. 2018;30(1):1-7. Link
145. Alhashemi JA, Daghistani MF. Effect of intraoperative intravenous acetaminophen vs. intramuscular meperidine on pain and discharge time after paediatric dental restoration. *Eur J Anaesthesiol*. 2007;24(2):128-33. Link
146. Alhashemi JA, Alotaibi QA, Mashaat MS, Kaid TM, Mujallid RH, Kaki AM. Intravenous acetaminophen vs oral ibuprofen in combination with morphine PCIA after cesarean delivery. *Can J Anaesth*. 2006;53(12):1200-6. Link
147. Alhashemi JA, Daghistani MF. Effects of intraoperative I.V. acetaminophen vs I.M. meperidine on post-tonsillectomy pain in children. *Br J Anaesth*. 2006;96(6):790-5. Link
148. Ali MA, Shamim F, Chughtai S. Comparison between intravenous paracetamol and fentanyl for intraoperative and postoperative pain relief in dilatation and evacuation: Prospective, randomized interventional trial. *J Anaesthesiol Clin Pharmacol*. 2015;31(1):54-8. Link
149. Api O, Unal O, Ugurel V, Emeksiz MB, Turan C. Analgesic efficacy of intravenous paracetamol for outpatient fractional curettage: A randomised, controlled trial. *Int J Clin Pract*. 2009;63(1):105-11. Link
150. Arici S, Gurbet A, Turker G, Yavascaoglu B, Sahin S. Preemptive analgesic effects of intravenous paracetamol in total abdominal hysterectomy. *Agri*. 2009;21(2):54-61. Link
151. Arslan M, Celep B, Cicek R, Kalender HU, Yilmaz H. Comparing the efficacy of preemptive intravenous paracetamol on the reducing effect of opioid usage in cholecystectomy. *J Res Med Sci*. 2013;18(3):172-7. Link
152. Arslan M, Cicek R, Celep B, Yilmaz H, Ustun Kalender H. [Comparison of the analgesic effects of intravenous paracetamol and lornoxicam in postoperative pain following thyroidectomies]. *Agri*. 2011;23(4):160-6. Link
153. Atef A, Fawaz AA. Intravenous paracetamol is highly effective in pain treatment after tonsillectomy in adults. *Eur Arch Otorhinolaryngol*. 2008;265(3):351-5. Link
154. Ayatollahi V, Faghihi S, Behdad S, Heiranizadeh N, Baghianimoghadam B. Effect of preoperative administration of intravenous paracetamol during cesarean surgery on hemodynamic variables relative to intubation, postoperative pain and neonatal apgar. *Acta Clin Croat*. 2014;53(3):272-8. Link
155. Bameshki A, Peivandi Yazdi A, Sheybani S, Rezaei Boroujerdi H, Taghavi Gilani M. The assessment of addition of either intravenous paracetamol or diclofenac suppositories to patient-controlled morphine analgesia for postgastrectomy pain control. *Anesth Pain Med*. 2015;5(5):e29688. Link

156. Baygin O, Tuzuner T, Isik B, Kusgoz A, Tanriver M. Comparison of pre-emptive ibuprofen, paracetamol, and placebo administration in reducing post-operative pain in primary tooth extraction. *Int J Paediatr Dent*. 2011;21(4):306-13. Link
157. Bilir S, Yurtlu BS, Hanci V, Okyay RD, Erdogan Kayhan G, Ayoglu HP, Ozkocak Turan I. Effects of peroperative intravenous paracetamol and lornoxicam for lumbar disc surgery on postoperative pain and opioid consumption: A randomized, prospective, placebo-controlled study. *Agri*. 2016;28(2):98-105. Link.
158. Bonnal A, Dehon A, Nagot N, Macioce V, Nogue E, Morau E. Patient-controlled oral analgesia versus nurse-controlled parenteral analgesia after caesarean section: a randomised controlled trial. *Anaesthesia*. 2016;71(5):535-543. Link
159. Borisov DB, Levin AV, Uvarov DN, Kapanadze LG, Nedashkovskii EV. [Balanced postoperative analgesia in abdominal surgery: Efficiency of the combined use of epidural block and non-opioid analgesics]. *Anesteziol Reanimatol*. 2009;-2(2):35-7. Link
160. Borisov DB, Levin AV, Vyl'iurov IV, Sokolov AV, Nedashkovskii EV. [Efficiency of preemptive intravenous paracetamol analgesia in abdominal surgery]. *Anesteziol Reanimatol*. 2007;-5(5):38-40. Link
161. Brett CN, Barnett SG, Pearson J. Postoperative plasma paracetamol levels following oral or intravenous paracetamol administration: A double-blind randomised controlled trial. *Anaesth Intensive Care*. 2012;40(1):166-71. Link
162. Brodner G, Gogarten W, Van Aken H, et al. Efficacy of intravenous paracetamol compared to dipyrone and parecoxib for postoperative pain management after minor-to-intermediate surgery: A randomised, double-blind trial. *Eur J Anaesthesiol*. 2011;28(2):125-32. Link
163. Cakan T, Inan N, Culhaoglu S, Bakkal K, Basar H. Intravenous paracetamol improves the quality of postoperative analgesia but does not decrease narcotic requirements. *J Neurosurg Anesthesiol*. 2008;20(3):169-73. Link
164. Caliskan E, Sener M, Kocum A, Ozyilkan NB, Ezer SS, Aribogan A. The efficacy of intravenous paracetamol versus dipyrone for postoperative analgesia after day-case lower abdominal surgery in children with spinal anesthesia: A prospective randomized double-blind placebo-controlled study. *BMC Anesthesiol*. 2013;13(1):34. Link
165. Caliskan E, Sener M, Kipri M, Yilmaz I, Aribogan A. Comparison of the effects of intravenous dexketoprofen trometamol versus paracetamol on postoperative analgesia in patients undergoing septoplasty: A randomised double-blind clinical trial. *Pak J Med Sci*. 2018;34(3):546-552. Link
166. Capici F, Ingelmo PM, Davidson A, et al. Randomized controlled trial of duration of analgesia following intravenous or rectal acetaminophen after adenotonsillectomy in children. *Br J Anaesth*. 2008;100(2):251-5. Link
167. Cattabriga I, Pacini D, Lamazza G, et al. Intravenous paracetamol as adjunctive treatment for postoperative pain after cardiac surgery: A double blind randomized controlled trial. *Eur J Cardiothorac Surg*. 2007;32(3):527-31. Link
168. Ceelie I, de Wildt SN, van Dijk M, et al. Effect of intravenous paracetamol on postoperative morphine requirements in neonates and infants undergoing major noncardiac surgery: A randomized controlled trial. *JAMA*. 2013;309(2):149-54. Link
169. Caliskan E, Sener M, Kipri M,, Yilmaz I, Aribogan A. Comparison of the effects of intravenous Dexketoprofen Trometamol versus Paracetamol on postoperative analgesia in patients undergoing Septoplasty: A randomised double-blind clinical trial. *Pak J Med Sci*. 2018;34(3):546-552. Link
170. Celik EC, Kara D, Koc E, Yayik AM. The comparison of single-dose preemptive intravenous ibuprofen and paracetamol on postoperative pain scores and opioid consumption after open septorhinoplasty: a randomized controlled study. *Eur Arch Otorhinolaryngol*. 2018; 275(9):2259-2263. Link
171. Ceyhan D, Bilir A, Gulec MS. Evaluation of the analgesic efficacy of dexketoprofen added to paracetamol. *Turk anestezi reanim*. 2016;44(6):312-316. Link
172. Chiam E, Bellomo R, Churilov L, Weinberg L. The hemodynamic effects of intravenous paracetamol (acetaminophen) vs normal saline in cardiac surgery patients: A single center placebo controlled randomized study. *PLoS One*. 2018;13(4):e0195931. Link.
173. Choudhuri AH, Uppal R. A comparison between intravenous paracetamol plus fentanyl and intravenous fentanyl alone for postoperative analgesia during laparoscopic cholecystectomy. *Anesth Essays Res*. 2011;5(2):196-200. Link

174. Ciftci B, Ekinci M, Celik EC, Kaciroglu A, Karakaya MA, Demiraran Y, Ozdenkaya Y. Comparison of intravenous ibuprofen and paracetamol for postoperative pain management after laparoscopic sleeve gastrectomy. a randomized controlled study. *Obes Surg*. 2019;29(3):765-770. Link.
175. Cok OY, Eker HE, Pelit A, et al. The effect of paracetamol on postoperative nausea and vomiting during the first 24 h after strabismus surgery: A prospective, randomised, double-blind study. *Eur J Anaesthesiol*. 2011;28(12):836-41. Link
176. Cornesse D, Senard M, Hans GA, et al. Comparison between two intraoperative intravenous loading doses of paracetamol on pain after minor hand surgery: Two grams versus one gram. *Acta Chir Belg*. 2010;110(5):529-32. Link
177. Damirchi AN, Kamali A, Azami M, Monfared ME. Comparison of the effect of Apotel and pregabalin on postoperative pain among patients undergoing lower limb orthopedic surgeries. *J Family Med Prim Care*. 2019;8(7):2405-2408. Link
178. Danelli G, Bonarelli S, Tognu A, et al. Prospective randomized comparison of ultrasound-guided and neurostimulation techniques for continuous interscalene brachial plexus block in patients undergoing coracoacromial ligament repair. *Br J Anaesth*. 2012;108(6):1006-10. Link
179. Divella M, Cecconi M, Fasano N, et al. Pain relief after total hip replacement: Oral CR oxycodone plus IV paracetamol versus epidural levobupivacaine and sufentanil. A randomized controlled trial. *Minerva Anestesiol*. 2012;78(5):534-41. Link
180. Durak P, Yagar S, Uzuner A, Kilic M, Dilber E, Ozgok A. [Postoperative pain therapy after laparoscopic cholecystectomy: Paracetamol versus diclofenac]. *Agri*. 2010;22(3):117-20. Link
181. Eftekharian H, Tabrizi R, Kazemi H, Nili M. Evaluation of a single dose intravenous paracetamol for pain relief after maxillofacial surgery: A randomized clinical trial study. *J Maxillofac Oral Surg*. 2014;13(4):478-82. Link
182. Eker HE, Cok OY, Ergenoglu P, Aribogan A, Arslan G. IV paracetamol effect on propofol-ketamine consumption in paediatric patients undergoing ESWL. *J Anesth*. 2012;26(3):351-6. Link
183. Ekinci M, Ciftci B, Celik EC, Kose EA, Karakaya MA, Ozdenkaya Y. A randomized, placebo-controlled, double-blind study that evaluates efficacy of intravenous ibuprofen and acetaminophen for postoperative pain treatment following laparoscopic cholecystectomy surgery. *J Gastrointest Surg. 2019*;[published online: April 22, 2019] Link
184. El-Fattah AM, Ramzy E. Pre-emptive triple analgesia protocol for tonsillectomy pain control in children: Double-blind, randomised, controlled, clinical trial. *J Laryngol Otol*. 2013;127(4):383-91. Link
185. Elseify ZA, El-Khattab SO, Khattab AM, Atta EM, Ajjoub LF. Combined parecoxib and I.V. paracetamol provides additional analgesic effect with better postoperative satisfaction in patients undergoing anterior cruciate ligament reconstruction. *Saudi J Anaesth*. 2011;5(1):45-9. Link
186. Emir E, Serin S, Erbay RH, Sungurtekin H, Tomatir E. Tramadol versus low dose tramadol-paracetamol for patient controlled analgesia during spinal vertebral surgery. *Kaohsiung J Med Sci*. 2010;26(6):308-15. Link
187. Erdogan Kayhan G, Sanli M, Ozgul U, Kirteke R, Yologlu S. Comparison of intravenous ibuprofen and acetaminophen for postoperative multimodal pain management in bariatric surgery: A randomized controlled trial. *J Clin Anesth*. 2018;50:5-11. Link
188. Eremenko AA, Kuslieva EV. [Analgesic and opioid-sparing effects of intravenous paracetamol in the early period after aortocoronary bypass surgery]. *Anesteziol Reanimatol*. 2008;5(5):11-4. Link
189. Ergenoglu P, Akin S, Yalcin Cok O, et al. Effect of intraoperative paracetamol on catheter-related bladder discomfort: A prospective, randomized, double-blind study. *Curr Ther Res Clin Exp*. 2012;73(6):186-94. Link
190. Faiz HR, Rahimzadeh P, Visnjevac O, Behzadi B, Ghodraty MR, Nader ND. Intravenous acetaminophen is superior to ketamine for postoperative pain after abdominal hysterectomy: Results of a prospective, randomized, double-blind, multicenter clinical trial. *J Pain Res*. 2014;7:65-70. Link
191. Faiz SH, Rahimzadeh P, Alebouyeh MR, Sedaghat M. A randomized controlled trial on analgesic effects of intravenous acetaminophen versus dexamethasone after pediatric tonsillectomy. *Iran Red Crescent Med J*. 2013;15(11):e9267. Link
192. Fenlon S, Collyer J, Giles J, et al. Oral vs intravenous paracetamol for lower third molar extractions under general anaesthesia: Is oral administration inferior? *Br J Anaesth*. 2013;110(3):432-7. Link

193. Gehling M, Arndt C, Eberhart LH, Koch T, Kruger T, Wulf H. Postoperative analgesia with parecoxib, acetaminophen, and the combination of both: A randomized, double-blind, placebo-controlled trial in patients undergoing thyroid surgery. *Br J Anaesth*. 2010;104(6):761-7. Link
194. Ghaffarpasand F, Dadgostar E, Ilami G, Shoaee F, Niakan A, Aghabaklou S, Ghadimi M, Goudarzi S, Dehghankhalili M, Alavi M. Intravenous acetaminophen (paracetamol) for postcraniotomy pain: systematic review and meta-analysis of randomized controlled trials. *World Neurosurg*. 2020;134:569-576. Link
195. Gokten OE, Kilicarslan H, Dogan HS, Turker G, Kordan Y. Efficacy of levobupivacaine infiltration to nephrosthomy tract in combination with intravenous paracetamol on postoperative analgesia in percutaneous nephrolithotomy patients. *J Endourol*. 2011;25(1):35-9. Link
196. Gousheh SM, Nesioonpour S, Javaher Foroosh F, Akhondzadeh R, Sahafi SA, Alizadeh Z. Intravenous paracetamol for postoperative analgesia in laparoscopic cholecystectomy. *Anesth Pain Med*. 2013;3(1):214-8. Link
197. Grundmann U, Wornle C, Biedler A, Kreuer S, Wrobel M, Wilhelm W. The efficacy of the non-opioid analgesics parecoxib, paracetamol and metamizol for postoperative pain relief after lumbar microdiscectomy. *Anesth Analg*. 2006;103(1):217-22, table of contents. Link
198. Gunusen I, Karaman S, Acar A, Sargin A, Firat V. The efficacy of paracetamol versus tenoxicam on postoperative pain and morphine consumption after abdominal hysterectomy: A placebo-controlled, randomized study. *Clin Exp Obstet Gynecol*. 2012;39(1):49-52. Link
199. Guo H, Wang C, He Y. A meta-analysis evaluates the efficacy of intravenous acetaminophen for pain management in knee or hip arthroplasty. *J Orthop Sci*. 2018; 23(5):793-800. Link
200. Haddadi S, Marzban S, Karami MS, Heidarzadeh A, Parvizi A, Naderi Nabi B. Comparing the duration of the analgesic effects of intravenous and rectal acetaminophen following tonsillectomy in children. *Anesth Pain Med*. 2014;4(1):e13175. Link
201. Haliloglu AH, Gokce MI, Tangal S, Boga MS, Tapar H, Aladag E. Comparison of postoperative analgesic efficacy of penile block, caudal block and intravenous paracetamol for circumcision: A prospective randomized study. *Int Braz J Urol*. 2013;39(4):551-7. Link
202. Ham SY, Song JW, Shim JK, Lee WK, Kim HJ, Kwak YL. Periprocedural analgesic efficacy of a single, pre-emptive administration of propacetamol in catheter ablation for atrial fibrillation: a randomized controlled trial. *Minerva Anestesiol*. 2018;84(6):675-683. Link
203. Hamed MA, Al-Saeed MA. The Efficacy of intravenous magnesium sulfate versus intravenous paracetamol on children posttonsillectomy pain and analgesic requirement: a randomized controlled study. *Anesth Essays Res*. 2018;12(3):724-728. Link
204. Hashemi SM, Esmaeelijah A, Golzari S, et al. Intravenous paracetamol versus patient-controlled analgesia with morphine for the pain management following diagnostic knee arthroscopy in trauma patients: A randomized clinical trial. *Arch Trauma Res*. 2015;4(4):e30788. Link
205. Hiller A, Helenius I, Nurmi E, et al. Acetaminophen improves analgesia but does not reduce opioid requirement after major spine surgery in children and adolescents. *Spine (Phila Pa 1976)*. 2012;37(20):E1225-31. Link
206. Hong JY, Kim WO, Chung WY, Yun JS, Kil HK. Paracetamol reduces postoperative pain and rescue analgesic demand after robot-assisted endoscopic thyroidectomy by the transaxillary approach. *World J Surg*. 2010;34(3):521-6. Link
207. Hong JY, Kim WO, Koo BN, Cho JS, Suk EH, Kil HK. Fentanyl-sparing effect of acetaminophen as a mixture of fentanyl in intravenous parent-/nurse-controlled analgesia after pediatric ureteroneocystostomy. *Anesthesiology*. 2010;113(3):672-7. Link
208. Hong JY, Won Han S, Kim WO, Kil HK. Fentanyl sparing effects of combined ketorolac and acetaminophen for outpatient inguinal hernia repair in children. *J Urol*. 2010;183(4):1551-5. Link
209. Idehen HO, Edowmonyi NP, Imarengiaye CA, Kute MO. A comparative study of a combination of paracetamol infusion (perfalgan) and intramuscular diclofenac versus intravenous pethidine, in the management of post caesarean pain. *Niger Postgrad Med J*. 2015;22(1):50-5. Link
210. Jahangiri Fard A, Babaee T, Alavi SM, et al. Intravenous patient-controlled remifentanil versus paracetamol in post-operative pain management in patients undergoing coronary artery bypass graft surgery. *Anesth Pain Med*. 2014;4(5):e19862. Link
211. Jokela R, Ahonen J, Seitsonen E, Marjakangas P, Korttila K. The influence of ondansetron on the analgesic effect of acetaminophen after laparoscopic hysterectomy. *Clin Pharmacol Ther*. 2010;87(6):672-8. Link

212. Juhl GI, Norholt SE, Tonnesen E, Hiesse-Provost O, Jensen TS. Analgesic efficacy and safety of intravenous paracetamol (acetaminophen) administered as a 2 g starting dose following third molar surgery. *Eur J Pain*. 2006;10(4):371-7. Link
213. Kamali A, Vakilian K, Mortazavi L, Shokrpour M. The effects of Apotel and Remifentanil on postoperative pain. *Altern Ther Health Med.* 2019;25(3):8-12. Link
214. Kamel EZ, Abd-Elshafy SK, Sayed JA, Mostafa MM, Seddik MI. Pain alleviation in patients undergoing cardiac surgery; presternal local anesthetic and magnesium infiltration versus conventional intravenous analgesia: a randomized double-blind study. *Korean J Pain*. 2018;31(2):93-101. Link.
215. Kampe S, Warm M, Landwehr S, et al. Clinical equivalence of IV paracetamol compared to IV dipyrone for postoperative analgesia after surgery for breast cancer. *Curr Med Res Opin*. 2006;22(10):1949-54. Link
216. Kemppainen T, Kokki H, Tuomilehto H, Seppa J, Nuutinen J. Acetaminophen is highly effective in pain treatment after endoscopic sinus surgery. *Laryngoscope*. 2006;116(12):2125-8. Link
217. Khalili G, Salimianfard M, Zarehzadeh A. Comparison between paracetamol, piroxicam, their combination, and placebo in postoperative pain management of upper limb orthopedic surgery (a randomized double blind clinical trial). *Adv Biomed Res*. 2016;5:114. Link.
218. Khalili G, Janghorbani M, Saryazdi H, Emaminejad A. Effect of preemptive and preventive acetaminophen on postoperative pain score: A randomized, double-blind trial of patients undergoing lower extremity surgery. *J Clin Anesth*. 2013;25(3):188-92. Link
219. Khajavi MR, Sabouri SM, Shariat Moharari R, Pourfakhr P, Najafi A, Etezadi F, Imani F. Multimodal analgesia with ketamine or tramadol in combination with intravenous paracetamol after renal surgery. *Nephrourol Mon*. 2016;8(4):e36491. Link
220. Kharouba J, Hawash N, Peretz B, Blumer S, Srour Y, Nassar M, Sabbah M, Safadi A, Khorev A, Somri M. Effect of intravenous paracetamol as pre-emptive compared to preventive analgesia in a pediatric dental setting: a prospective randomized study. *Int J Paediatr Dent*. 2018;28(1):83-91. Link
221. Kilic O, Akand M, Kulaksizoglu H, et al. Intravenous paracetamol for relief of pain during transrectal-ultrasound-guided biopsy of the prostate: A prospective, randomized, double-blind, placebo-controlled study. *Kaohsiung J Med Sci*. 2015;31(11):572-9. Link
222. Kilicaslan A, Tuncer S, Yuceaktas A, Uyar M, Reisli R. [The effects of intravenous paracetamol on postoperative analgesia and tramadol consumption in cesarean operations]. *Agri*. 2010;22(1):7-12. Link
223. Kinoshita J, Fushida S, Kaji M, Oyama K, Fujimoto D, Hirono Y, Tsukada T, Fujimura T, Ohyama S, Yabushita K, Kadoya N, Nishijima K, Ohta T. A randomized controlled trial of postoperative intravenous acetaminophen plus thoracic epidural analgesia vs. thoracic epidural analgesia alone after gastrectomy for gastric cancer. *Gastric Cancer*. 2019;22(2):392-402. Link
224. Ko MJ, Lee JH, Cheong SH, et al. Comparison of the effects of acetaminophen to ketorolac when added to lidocaine for intravenous regional anesthesia. *Korean J Anesthesiol*. 2010;58(4):357-61. Link
225. Kocum A, Sener M, Izmirli H, Haydardedeoglu B, Aribogan A. [Efficacy of intravenous dexketoprofen trometamol compared to intravenous paracetamol for postoperative pain management after day-case operative hysteroscopy: Randomized, double-blind, placebo-controlled study]. *Agri*. 2014;26(1):15-22. Link
226. Kocum AI, Sener M, Caliskan E, et al. Intravenous paracetamol and dipyrone for postoperative analgesia after day-case tonsillectomy in children: A prospective, randomized, double blind, placebo controlled study. *Braz J Otorhinolaryngol*. 2013;79(1):89-94. Link
227. Kokki M, Broms S, Eskelinen M, Neuvonen PJ, Halonen T, Kokki H. The analgesic concentration of oxycodone with co-administration of paracetamol -- a dose-finding study in adult patients undergoing laparoscopic cholecystectomy. *Basic Clin Pharmacol Toxicol*. 2012;111(6):391-5. Link
228. Kolahdouzan K, Eydi M, Mohammadipour Anvari H, et al. Comparing the efficacy of intravenous acetaminophen and intravenous meperidine in pain relief after outpatient urological surgery. *Anesth Pain Med*. 2014;4(5):e20337. Link
229. Koppert W, Frotsch K, Huzurudin N, et al. The effects of paracetamol and parecoxib on kidney function in elderly patients undergoing orthopedic surgery. *Anesth Analg*. 2006;103(5):1170-6. Link

230. Korkmaz Dilmen O, Tunali Y, Cakmakkaya OS, et al. Efficacy of intravenous paracetamol, metamizol and lornoxicam on postoperative pain and morphine consumption after lumbar disc surgery. *Eur J Anaesthesiol*. 2010;27(5):428-32. Link
231. Koteswara CM, D S. A study on pre-emptive analgesic effect of intravenous paracetamol in functional endoscopic sinus surgeries (FESSs): A randomized, double-blinded clinical study. *J Clin Diagn Res*. 2014;8(1):108-11. Link
232. Koyuncu O, Hakimoglu S, Ugur M, Akkurt C, Turhanoglu S, Sessler D, Turan A. Acetaminophen reduces acute and persistent incisional pain after hysterectomy. *Ann Ital Chir*. 2018; [published online: May 15, 2018]. Link
233. Krishna SN, Chauhan S, Bhoi D, Kaushal B, Hasija S, Sangdup T, Bisoi AK. Bilateral erector spinae plane block for acute post-surgical pain in adult cardiac surgical patients: a randomized controlled trial. *J Cardiothorac Vasc Anesth*. 2019; 33(2):368-375. Link
234. Kuroki S, Nagamine Y, Kodama Y, Kadota Y, Kouroki S, Maruta T, Kanemaru S, Amano M, Tsuneyoshi I. Intraoperative single-dose intravenous acetaminophen for postoperative analgesia after skin laser irradiation surgery in paediatric patients: a small prospective study. *Turk J Anaesthesiol Reanim.* 2019;47(3):192-198. Link
235. Landwehr S, Kiencke P, Giesecke T, Eggert D, Thumann G, Kampe S. A comparison between IV paracetamol and IV metamizol for postoperative analgesia after retinal surgery. *Curr Med Res Opin*. 2005;21(10):1569-75. Link
236. Lee SY, Lee WH, Lee EH, Han KC, Ko YK. The effects of paracetamol, ketorolac, and paracetamol plus morphine on pain control after thyroidectomy. *Korean J Pain*. 2010;23(2):124-30. Link
237. Lee Y, Yu J, Doumouras AG, Ashoorion V, Gmora S, Anvari M, Hong D. Intravenous acetaminophen versus placebo in post-bariatric surgery multimodal pain management: a meta-analysis of randomized controlled trials. *Obes Surg*. 2019;29(4):1420-1428. Link
238. Machoki MS, Millar AJ, Albetyn H, Cox SG, Thomas J, Numanoglu A. Local anesthetic wound infusion versus standard analgesia in paediatric post-operative pain control. *Pediatr Surg Int*. 2015;31(11):1087-97. Link
239. Mahajan L, Mittal V, Gupta R, Chhabra H, Vidhan J, Kaur A. Study to compare the effect of oral, rectal, and intravenous infusion of paracetamol for postoperative analgesia in women undergoing cesarean section under spinal anesthesia. *Anesth Essays Res*. 2017;11(3):594-598. Link
240. Maghsoudi R, Tabatabai M, Radfar MH, et al. Opioid-sparing effect of intravenous paracetamol after percutaneous nephrolithotomy: A double-blind randomized controlled trial. *J Endourol*. 2014;28(1):23-7. Link
241. Majumdar S, Das A, Kundu R, Mukherjee D, Hazra B, Mitra T. Intravenous paracetamol infusion: Superior pain management and earlier discharge from hospital in patients undergoing palliative head-neck cancer surgery. *Perspect Clin Res*. 2014;5(4):172-7. Link
242. Marty J, Benhamou D, Chassard D, et al. Effects of single-dose injectable paracetamolversus propacetamol in pain management after minor gynecologic surgery: A multicenter, randomized, double-blind, active-controlled, two-parallel-group study. *Curr Ther Res Clin Exp*. 2005;66(4):294-306. Link
243. Maund E, McDaid C, Rice S, Wright K, Jenkins B, Woolacott N. Paracetamol and selective and non-selective non-steroidal anti-inflammatory drugs for the reduction in morphine-related side-effects after major surgery: A systematic review. *Br J Anaesth*. 2011;106(3):292-7. Link
244. Memis D, Inal MT, Kavalci G, Sezer A, Sut N. Intravenous paracetamol reduced the use of opioids, extubation time, and opioid-related adverse effects after major surgery in intensive care unit. *J Crit Care*. 2010;25(3):458-62. Link
245. Mitra S, Khandelwal P, Sehgal A. Diclofenac-tramadol vs. diclofenac-acetaminophen combinations for pain relief after caesarean section. *Acta Anaesthesiol Scand*. 2012;56(6):706-11. Link
246. Mohamad AH, McDonnell NJ, Bloor M, Nathan EA, Paech MJ. Parecoxib and paracetamol for pain relief following minor day-stay gynaecological surgery. *Anaesth Intensive Care*. 2014;42(1):43-50. Link
247. Mollazadeh R, Eftekhari MR, Eslami M. Efficacy of intravenous acetaminophen in periimplantation pain of cardiac electronic devices: a randomized double-blinded study. *J Perianesth Nurs*. 2017;32(3):215-218. Link

248. Moller PL, Juhl GI, Payen-Champenois C, Skoglund LA. Intravenous acetaminophen (paracetamol): Comparable analgesic efficacy, but better local safety than its prodrug, propacetamol, for postoperative pain after third molar surgery. *Anesth Analg*. 2005;101(1):90-6, table of contents. Link
249. Moon YE, Lee YK, Lee J, Moon DE. The effects of preoperative intravenous acetaminophen in patients undergoing abdominal hysterectomy. *Arch Gynecol Obstet*. 2011;284(6):1455-60. Link
250. Mowafi HA, Elmakarim EA, Ismail S, Al-Mahdy M, El-Saflan AE, Elsaid AS. Intravenous lornoxicam is more effective than paracetamol as a supplemental analgesic after lower abdominal surgery: A randomized controlled trial. *World J Surg*. 2012;36(9):2039-44. Link
251. Murat I, Baujard C, Foussat C, et al. Tolerance and analgesic efficacy of a new i.v. paracetamol solution in children after inguinal hernia repair. *Paediatr Anaesth*. 2005;15(8):663-70. Link
252. Murata-Ooiwa M, Tsukada S, Wakui M. Intravenous acetaminophen in multimodal pain management for patients undergoing total knee arthroplasty: a randomized, double-blind, placebo-controlled trial. *J Arthroplasty*. 2017;32(10):3024-302. Link
253. Ng QX, Loke W, Yeo WS, Chng KYY, Tan CH. A meta-analysis of the utility of preoperative intravenous paracetamol for post-caesarean analgesia. *Medicina (Kaunas)*. 2019;55(8) 424. Link
254. Nikooseresht M, Seifrabiei MA, Davoodi M, Aghajanlou M, Sardari MT. Diclofenac suppository vs. IV acetaminophen combined with IV PCA for postoperative pain management in patients undergoing laminectomy: a randomized, double-blinded clinical trial. *Anesth Pain Med*. 2016;6(3):e36812. Link.
255. Nonaka T, Hara M, Miyamoto C, Sugita M, Yamamoto T. Comparison of the analgesic effect of intravenous acetaminophen with that of flurbiprofen axetil on post-breast surgery pain: A randomized controlled trial. *J Anesth*. 2016;30(3):405-409. Link
256. Ohnesorge H, Bein B, Hanss R, et al. Paracetamol versus metamizol in the treatment of postoperative pain after breast surgery: A randomized, controlled trial. *Eur J Anaesthesiol*. 2009;26(8):648-53. Link
257. Olonisakin RP, Amanor-Boadu SD, Akinyemi AO. Morphine-sparing effect of intravenous paracetamol for post operative pain management following gynaecological surgery. *Afr J Med Med Sci*. 2012;41(4):429-36. Link
258. Oncul AM, Cimen E, Kucukyavuz Z, Cambazoglu M. Postoperative analgesia in orthognathic surgery patients: Diclofenac sodium or paracetamol? *Br J Oral Maxillofac Surg*. 2011;49(2):138-41. Link
259. Oreskovic Z, Bicanic G, Hrabac P, Tripkovic B, Delimar D. Treatment of postoperative pain after total hip arthroplasty: Comparison between metamizol and paracetamol as adjunctive to opioid analgesics-prospective, double-blind, randomised study. *Arch Orthop Trauma Surg*. 2014;134(5):631-6. Link
260. Ozmete O, Bali C, Cok OY, Ergenoglu P, Ozyilkan NB, Akin S, Kalayci H, Aribogan A. Preoperative paracetamol improves post-cesarean delivery pain management: a prospective, randomized, double-blind, placebo-controlled trial. *J Clin Anesth*. 2016;33:51-57. Link
261. Ozkan F, Erdemir F, Erkorkmaz U, Kaya Z, Senayli Y, Parlaktas BS. Comparison of three different analgesic protocols during shockwave lithotripsy. *J Endourol*. 2012;26(6):691-6. Link
262. Paech MJ, McDonnell NJ, Sinha A, Baber C, Nathan EA. A randomised controlled trial of parecoxib, celecoxib and paracetamol as adjuncts to patient-controlled epidural analgesia after caesarean delivery. *Anaesth Intensive Care*. 2014;42(1):15-22. Link
263. Parida S, Panga R, Rajappa M, Kundra P. Study of glutathione S-transferase levels in patients receiving intravenous paracetamol perioperatively: a randomized controlled trial. *Indian J Gastroenterol*. 2018;37(6):511-519. Link
264. Pettersson PH, Jakobsson J, Owall A. Intravenous acetaminophen reduced the use of opioids compared with oral administration after coronary artery bypass grafting. *J Cardiothorac Vasc Anesth*. 2005;19(3):306-9. Link
265. Pickering G, Faure M, Commun F, et al. Tropisetron and paracetamol association in post-operative patients. *Fundam Clin Pharmacol*. 2012;26(3):432-7. Link
266. Raja S DC, Shetty AP, Subramanian B, Kanna RM, Rajasekaran S. A prospective randomized study to analyze the efficacy of balanced preemptive analgesia in spine surgery. *Spine J*. 2019;22(2):392-402. Link
267. Roofthooft DWE, Simons SHP, van Lingen RA, Tibboel D, van den Anker JN, Reiss IKH, van Dijk M. Randomized controlled trial comparing different single doses of intravenous paracetamol for

placement of peripherally inserted central catheters in preterm infants. *Neonatology*. 2017;112(2):150-158. Link
268. Rugyte D, Gudaityte J. Intravenous paracetamol in adjunct to intravenous ketoprofen for postoperative pain in children undergoing general surgery: a double-blinded randomized study. *Medicina (Kaunas, Lithuania).* 2019;55(4):86. Link
269. Salihoglu Z, Yildirim M, Demiroluk S, et al. Evaluation of intravenous paracetamol administration on postoperative pain and recovery characteristics in patients undergoing laparoscopic cholecystectomy. *Surg Laparosc Endosc Percutan Tech*. 2009;19(4):321-3. Link
270. Salonen A, Silvola J, Kokki H. Does 1 or 2 g paracetamol added to ketoprofen enhance analgesia in adult tonsillectomy patients? *Acta Anaesthesiol Scand*. 2009;53(9):1200-6. Link
271. Samulak D, Michalska M, Gaca M, Wilczak M, Mojs E, Chuchracki M. Efficiency of postoperative pain management after gynecologic oncological surgeries with the use of morphine + acetaminophen + ketoprofen versus morphine + metamizol + ketoprofen. *Eur J Gynaecol Oncol*. 2011;32(2):168-70. Link
272. Sadrolsadat SH, Yousefshahi F, Ostadalipour A, Mohammadi FZ, Makarem J. Effect of intravenous acetaminophen on postoperative pain in vitrectomy: a randomized, double-blind, clinical trial. *Anesth Pain Med*. 2017;7(3):e13639. Link
273. Sen H, Kulahci Y, Bicerer E, Ozkan S, Dagli G, Turan A. The analgesic effect of paracetamol when added to lidocaine for intravenous regional anesthesia. *Anesth Analg*. 2009;109(4):1327-30. Link
274. Serclova Z, Dytrych P, Marvan J, et al. Fast-track in open intestinal surgery: Prospective randomized study (clinical trials gov identifier no. NCT00123456). *Clin Nutr*. 2009;28(6):618-24. Link
275. Shah UD, Dudhwala KN, Vakil MS. Prospective, double-blind randomized study of comparison of analgesic efficacy of parenteral paracetamol and diclofenac for postoperative pain relief. *J Anaesthesiol Clin Pharmacol.* 2019;35(2):188-191. Link
276. Shahid M, Manjula BP, Sunil BV. A comparative study of intravenous paracetamol and intravenous tramadol for postoperative analgesia in laparotomies. *Anesth Essays Res*. 2015;9(3):314-319. Link
277. Shi SB, Wang XB, Song JM, Guo SF, Chen ZX, Wang Y. Efficacy of intravenous acetaminophen in multimodal management for pain relief following total knee arthroplasty: a meta-analysis. *J Orthop Surg Res*. 2018;13(1):250. Link
278. Shimia M, Parish M, Abedini N. The effect of intravenous paracetamol on postoperative pain after lumbar discectomy. *Asian Spine J*. 2014;8(4):400-4. Link
279. Silvanto M, Munsterhjelm E, Savolainen S, et al. Effect of 3 g of intravenous paracetamol on post-operative analgesia, platelet function and liver enzymes in patients undergoing tonsillectomy under local anaesthesia. *Acta Anaesthesiol Scand*. 2007;51(9):1147-54. Link
280. Soltani G, Molkizadeh A, Amini S. Effect of intravenous acetaminophen (paracetamol) on hemodynamic parameters following endotracheal tube intubation and postoperative pain in caesarian section surgeries. *Anesth Pain Med*. 2015;5(6):e30062. Link
281. Tiippana E, Bachmann M, Kalso E, Pere P. Effect of paracetamol and coxib with or without dexamethasone after laparoscopic cholecystectomy. *Acta Anaesthesiol Scand*. 2008;52(5):673-80. Link
282. Tunali Y, Akcil EF, Dilmen OK, et al. Efficacy of intravenous paracetamol and dexketoprofen on postoperative pain and morphine consumption after a lumbar disk surgery. *J Neurosurg Anesthesiol*. 2013;25(2):143-7. Link
283. Tuzuner Oncul AM, Yazicioglu D, Alanoglu Z, Demiralp S, Ozturk A, Ucok C. Postoperative analgesia in impacted third molar surgery: The role of preoperative diclofenac sodium, paracetamol and lornoxicam. *Med Princ Pract*. 2011;20(5):470-6. Link
284. Unal C, Cakan T, Baltaci B, Basar H. Comparison of analgesic efficacy of intravenous paracetamol and intravenous dexketoprofen trometamol in multimodal analgesia after hysterectomy. *J Res Med Sci*. 2013;18(10):897-903. Link
285. Unal SS, Aksoy M, Ahiskalioglu A, Erdem AF, Adanur S. The effect of intravenous preemptive paracetamol on postoperative fentanyl consumption in patients undergoing open nephrectomy: A prospective randomized study. *Niger J Clin Pract*. 2015;18(1):68-74. Link
286. Upadya M, Pushpavathi SH, Seetharam KR. Comparison of intra-peritoneal bupivacaine and intravenous paracetamol for postoperative pain relief after laparoscopic cholecystectomy. *Anesth Essays Res*. 2015;9(1):39-43. Link

287. Uvarov DN, Orlov MM, Levin AV, Sokolov AV, Nedashkovskii EV. [Role of paracetamol in a balanced postoperative analgesia scheme after thoracotomy]. *Anesteziol Reanimatol*. 2008;4(4):46-9. Link
288. Uysal HY, Takmaz SA, Yaman F, Baltaci B, Basar H. The efficacy of intravenous paracetamol versus tramadol for postoperative analgesia after adenotonsillectomy in children. *J Clin Anesth*. 2011;23(1):53-7. Link
289. Uzun S, Erden IA, Canbay O, Aypar U. The effect of intravenous paracetamol for the prevention of rocuronium injection pain. *Kaohsiung J Med Sci*. 2014;30(11):566-9. Link
290. Uzun S, Aycan IO, Erden IA, Sahin A, Aypar U. The addition of metamizole to morphine and paracetamol improves early postoperative analgesia and patient satisfaction after lumbar disc surgery. *Turk Neurosurg*. 2010;20(3):341-7. Link
291. Wong I, St John-Green C, Walker SM. Opioid-sparing effects of perioperative paracetamol and nonsteroidal anti-inflammatory drugs (NSAIDs) in children. *Paediatr Anaesth*. 2013;23(6):475-95. Link
292. Yaghoubi S, Pourfallah R, Barikani A, Kayalha H. The postoperative analgesic effect of morphine and paracetamol in the patients undergoing laparotomy, using PCA method. *Glob J Health Sci*. 2014;6(1):207-14. Link
293. Yalcin N, Uzun ST, Reisli R, Borazan H, Otelcioglu S. A comparison of ketamine and paracetamol for preventing remifentanil induced hyperalgesia in patients undergoing total abdominal hysterectomy. *Int J Med Sci*. 2012;9(5):327-33. Link
294. Yamamoto N, Sakura S, Noda T, Nishiyama A, Dan'ura T, Matsui Y, Ozaki T. Comparison of the postoperative analgesic efficacies of intravenous acetaminophen and fascia iliaca compartment block inhip fracture surgery: A randomised controlled trial. *Injury.* 2019;50(10):1689-1693. Link
295. Yenigun A, Yilmaz S, Dogan R, Goktas SS, Calim M, Ozturan O. Demonstration of analgesic effect of intranasal ketamine and intranasal fentanyl for postoperative pain after pediatric tonsillectomy. *Int J Pediatr Otorhinolaryngol*. 2018;104:182-185. Link
296. Zeidan A, Mazoit JX, Ali Abdullah M, Maaliki H, Ghattas T, Saifan A. Median effective dose (ED(5)(0)) of paracetamol and morphine for postoperative pain: A study of interaction. *Br J Anaesth*. 2014;112(1):118-23. Link
297. Yenigun A, Yilmaz S, Dogan R, Goktas SS, Calim M, Ozturan O. Demonstration of analgesic effect of intranasal ketamine and intranasal fentanyl for postoperative pain after pediatric tonsillectomy. *Int J Pediatr Otorhinolaryngol*. 2018;104:182-185. Link

US HEOR

298. Agarwal R, Rajanbabu A, Unnikrishnan UG. A retrospective evaluation of the perioperative drug use and comparison of its cost in robotic vs open surgery for endometrial cancer. *J Robot Surg*. 2018; 2(4):665-672 Link.
299. Allen KB, Michael Borkon A, Cohen DJ, Chhatriwalla AK, Aggarwal S, Saxon J, Russell Davis J, Kennedy KF. Intravenous acetaminophen improves outcomes after transapical transcatheter aortic valve replacement. *Innovations (Phila)*. 2018;13(4):287-291. Link
300. Apfel C, Jahr JR, Kelly CL, Ang RY, Oderda GM. Effect of I.V. acetaminophen on total hip or knee replacement surgery: a case-matched evaluation of a national patient database. *Am J Health Syst Pharm*. 2015;72(22):1961-8. Link
301. Apfel CC, Hornuss C, Souza K, Pergolizzi J, Turan A. Intravenous acetaminophen reduces post-operative nausea and vomiting: a systematic review and meta-analysis [ASA abstract]. *Proc Annu Meet Am Soc Anesthesiol*. 2012.
302. Atkins JR, Titch JF, Norcross WP, Thompson JA, Muckler VC. Preemptive oral acetaminophen for women undergoing total laparoscopic hysterectomy. Nursing for Women's Health. 2019;23(2):105-113. Link
303. Barrington JW, Hansen RN, Lovelace B, Boing EA, Chughtai M, Newman JM, Pham AT, Khlopas A, Sodhi N, Sultan AA, Mont MA. Impact of intravenous acetaminophen on lengths of stay and discharge status after total knee arthroplasty. *J Knee Surg*. 2019;32(1):111-116 Link.

304. Blonk K, Davenport A, Morgan B, Muckler V. Administration of oral acetaminophen to reduce costs for the hysterectomy patient at a community hospital. *J Perianesth Nurs*. 2019;34(1):143-150. Link
305. Bollinger AJ, Butler PD, Nies MS, Sietsema DL, Jones CB, Endres TJ. Is scheduled intravenous acetaminophen effective in the pain management protocol of geriatric hip fractures?. *Geriatr Orthop Surg Rehabil*. 2015;6(3):202-8. Link
306. Bourgeois FT, Graham DA, Kesselheim AS, Randolph AG. Cost Implications of escalating intravenous acetaminophen use in children. *JAMA Pediatrics.* 2019;173(5):489-491. Link
307. Chidambaran V, Subramanyam R, Ding L, Sadhasivam S, Geisler K Stubbeman B Sturm P Jain V Eckman MH. Cost-effectiveness of intravenous acetaminophen and ketorolac in adolescents undergoing idiopathic scoliosis surgery. *Paediatr Anaesth*. 2018;28(3):237-248. Link
308. Collinsworth AW, Kouznetsova M, Hall L, Robinson C, Ogola GO, Turner A, Priest EL, Hart C, Böing EA, Wan GJ, Peters WR, Masica AL. Impact of an enhanced recovery after surgery program on opioid prescribing and clinical outcomes [IHI abstract]. *Abstract preseted at IHI National Forum on Quality Improvement in Health Care, December 8–11, 2019, Orlando, FL*. 2019.
309. Collinsworth AW, Kouznetsova M, Hall L, Robinson C, Ogola GO, Turner A, Priest EL, Hart C, Böing EA, Wan GJ, Peters WR, Masica AL. Impact of an enhanced recovery after surgery program with a multimodal analgesia care pathway on opioid prescribing and clinical outcomes for patients undergoing colorectal surgery [ASRA abstract 196] . *Abstract presented at Annual Pain Medicine Meeting;* November 14 – 16, 2019; New Orleans, LA. 2019
310. El Chaar M, Stoltzfus J, Claros L, Wasylik T. IV acetaminophen results in lower hospital costs and emergency room visits following bariatric surgery: a double-blind, prospective, randomized trial in a single accredited bariatric center. *J Gastrointest Surg*. 2016;1(4):715-24. Link
311. Hansen RN, Pham AT, Boing EA, Lovelace B, Wan GJ, Miller TE. Comparative analysis of length of stay, hospitalization costs, opioid use, and discharge status among spine surgery patients with postoperative pain management including intravenous versus oral acetaminophen. *Curr Med Res Opin*. 2017;33(5):943-948. Link
312. Hansen RN, Pham A, Strassels SA, Balaban S, Wan GJ. Comparative analysis of length of stay and inpatient costs for orthopedic surgery patients treated with IV acetaminophen and IV opioids vs. IV opioids alone for post-operative pain. *Adv Ther*. 2016;33(9):1635-45. Link
313. Hansen RN, Pham AT, Boing EA, Lovelace B, Wan GJ Thomas DA Fontes ML. Hospitalization costs and resource allocation in cholecystectomy with use of intravenous versus oral acetaminophen. *Curr Med Res Opin*. 2018; 34(9):1549-1555. Link.
314. Hansen RN, Pham AT, Lovelace B, Balaban S, Wan GJ. Comparative analysis of inpatient costs for obstetrics and gynecology surgery patients treated with IV acetaminophen and IV opioids versus IV opioid-only analgesia for postoperative pain. *Ann Pharmacother*. 2017;51(10):834-839. Link
315. Hansen RN, Pham AT, Boing EA, Lovelace B, Wan GJ, Urman RD. Reduced length of stay and hospitalization costs among inpatient hysterectomy patients with postoperative pain management including IV versus oral acetaminophen. *PLoS One*. 2018;13(9):e0203746. Link
316. Howell K, Karish C, Bigham M, Metzger K, Thompson M, Christopher J. Saving money for a rainy day: Optimizing intravenous acetaminophen use in the PICU [SCCM abstract 1340]. *Critical Care Medicine*. 2018;46(suppl 1):653.
317. Keller DS, Stulberg JJ, Lawrence JK, Delaney CP. Process control to measure process improvement in colorectal surgery: modifications to an established enhanced recovery pathway. *Dis Colon Rectum*. 2014;57(2):194-200. Link
318. Kelly JS, Opsha Y, Costello J, Schiller D, Hola ET. Opioid use in knee arthroplasty after receiving intravenous acetaminophen. *Pharmacotherapy*. 2014;34(1):22S26S. Link
319. Khobrani MA, Camamo JM, Patanwala AE. Effect of Intravenous acetaminophen on post-anesthesia care unit length of stay, opioid consumption, pain, and analgesic drug costs after ambulatory surgery. *P T*. 2017;42(2):125-139. Link

320. Looke TD, Kluth CT. Effect of preoperative intravenous methocarbamol and intravenous acetaminophen on opioid use after primary total hip and knee replacement. *Orthopedics*. 2013;36(2):25-32. Link
321. Mahdi E, Ourshalimian S, Darcy D, Russell C, Kelley-Quon L. Impact of IV acetaminophen pricing on opioid use and outcomes for children with appendicitis [ACS abstract]. *J Am Coll Surg*. 2019;229(4 suppl 1):S155.
322. Maiese BA, Pham AT, Shah MV, Eaddy MT, Lunacsek OE, Wan GJ. Hospitalization costs for patients undergoing orthopedic surgery treated with intravenous acetaminophen (IV-APAP) plus other IV analgesics or IV opioid monotherapy for postoperative pain. *Adv Ther*. 2017;34(2):421-435. Link
323. Mattern HP, Reichert JC, McConnell KJ. The effect of intravenous acetaminophen on patient outcomes within a large integrated delivery network. *Pharmacotherapy*. 2020;[published online: January 20, 2020] Link
324. Mont M, Hansen R, Lovelace B, Khlopas A, Boïng E, Barrington J. Intravenous acetaminophen use associated with reduced odds of 30-day readmission after total knee arthroplasty [ASRA abstract 4328]. Abstract presented at Annual Pain Medicine Meeting; November 16 – 18, 2017; Lake Buena Vista, FL. 2017.
325. Mont MA, Lovelace B, Pham AT, Hansen RN, Chughtai M, Gwam CU, Khlopas A, Barrington JW. Intravenous acetaminophen may be associated with reduced odds of 30-Day readmission after total knee arthroplasty. *J Knee Surg*. 2019;32(5):414-420. Link
326. Nassif GJ Jr, Miller TE. Evolving the management of acute perioperative pain towards opioid free protocols: a narrative review. Curr Med Res Opin. 2019;35(12):2129-2136. Link
327. Olbrecht VA, Ding L, Spruance K, Hossain M, Sadhasivam S, Chidambaran V. Intravenous acetaminophen reduces length of stay via mediation of postoperative opioid consumption following posterior spinal fusion in a pediatric cohort. *Clin J Pain*. 2018;34(7):593-599. Link
328. Pham A, Hansen R, Boing EA, Lovelace B, Wan GJ, Urman R. Reduced length of stay and hospitalization costs among inpatient hysterectomy surgery patients with postoperative pain management including IV versus oral acetaminophen [ASRA abstract 3085]. Abstract Presented at American Society of Regional Anesthesia & Pain Medicine. 2016;November 17-19, 2016:San Diego, CA.
329. Raiff D, Vaughan C, McGee A. Impact of intraoperative acetaminophen administration on postoperative opioid consumption in patients undergoing hip or knee replacement. *Hosp Pharm*. 2014;49(11):1022-32. Link
330. Shafi S, Collinsworth AW, Copeland LA, Ogola GO, Qiu T, Kouznetsova M, Liao I-C, Mears N, Pham AT, Wan GJ, Masica AL. Association of opioid-related adverse drug events with clinical and cost outcomes among surgical patients in a large integrated health care delivery system. *JAMA Surg*. 2018; 153(8):757-763. Link
331. Shaffer EE, Woldman RL, Spiegelman A, Strassels SA, Wan GJ, Zimmerman T. Estimating the effect of intravenous acetaminophen (IV-APAP) on length of stay and inpatient costs [ASRA abstract 1364]. Abstract Presented at 41st Annual Regional Anesthesiology & Acute Pain Medicine Meeting. ; March 31 – April 2 2016; New Orleans LA.
332. Shaffer EE, Pham A, Woldman RL, Spiegelman A, Strassels SA Wan GJ, Zimmerman T. Estimating the Effect of intravenous acetaminophen for postoperative pain management on length of stay and inpatient hospital costs. *Adv Ther*. 2017;33(12):2211-2228. Link
333. Song K, Melroy MJ, Whipple OC. Optimizing multimodal analgesia with intravenous acetaminophen and opioids in postoperative bariatric patients. *Pharmacotherapy*. 2014;34(1):14S21S. Link
334. Subramanyam R, Varughese A, Kurth CD, Eckman MH. Cost-effectiveness of intravenous acetaminophen for pediatric tonsillectomy. *Paediatr Anaesth*. 2014;24(5):467-475. Link

335. Urman R, Hansen R, Böing E, Lovelace B, Wan G. Reduced length of stay and hospitalization costs among inpatient appendectomy patients with postoperative pain management including intravenous versus oral acetaminophen [ASRA abstract 4222]. Abstract presented at Annual Pain Medicine Meeting; November 16 – 18, 2017; Lake Buena Vista, FL. 2017.
336. Urman R, Hansen R, Böing E, Lovelace B, Wan G. Reduced length of stay and hospitalization costs among inpatient bariatric patients with postoperative pain management including intravenous versus oral acetaminophen [ASRA abstract 4224]. Abstract presented at Annual Pain Medicine Meeting; November 16 – 18, 2017; Lake Buena Vista, FL. 2017.
337. Urman RD, Boing EA, Khangulov V, Fain R, Nathanson BH, Wan GJ, Lovelace B, Pham AT, Cirillo J. Analysis of predictors of opioid-free analgesia for management of acute post-surgical pain in the United States. *Curr Med Res Opin*. 2019;35(2):283-289. Link
338. Urman R, Boing E, Pham A, Khangulov V, Fain R, Nathanson B, Zhang X, Wan G, Lovelace B, Cirillo J. Improved outcomes associated with the use of intravenous acetaminophen for management of acute post-surgical pain in cesarean sections and hysterectomies. *J Clin Med Res*. 2018;10(6):499-507. Link
339. Urman RD, Seger DL, Fiskio JM, Neville BA, Harry EM, Weiner SG, Lovelace B, Fain R, Cirillo J, Schnipper JL. The burden of opioid-related adverse drug events on hospitalized previously opioid-free surgical patients. *J Patient Saf.* 2019; [published online: January 21, 2019]. Link
340. Wang S, Saha R, Shah N, Hanna A, DeMuro J, Calixte R, Brathwaite C. Effect of intravenous acetaminophen on postoperative opioid use in bariatric surgery patients. *P T*. 2015;40(12):847-850,838. Link
341. Wasserman I, Poeran J, Zubizarreta N, Babby J, Serban S, Goldberg AT, Greenstein AJ, Memtsoudis SG, Mazumdar M, Leibowitz AB. Impact of intravenous acetaminophen on perioperative opioid utilization and outcomes in open colectomies: a claims database analysis. *Anesthesiology*. 2018; 129(1):77-88. Link.
342. Ziemann-Gimmel P, Hensel P, Koppman J, Marema R. Multimodal analgesia reduces narcotic requirements and antiemetic rescue medication in laparoscopic Roux-en-Y gastric bypass surgery. *Surg Obes Relat Dis*. 2013;9(6):975-80. Link
343. Zlatev DV, Friedlander DF, Tinay I, Wang Y, Pucheril D, Chung BI, Chang SL. Impact of intravenous acetaminophen on outcomes following radical nephrectomy. [ASCO abstract 663]. *J Clin Oncol*. 2018;36(suppl 6s):663

There is a vast body of clinical data in the peer-reviewed literature regarding the therapeutic use of intravenous acetaminophen. For more information, please contact our Medical Information Group by phone at 800.778.7898, by fax at 913.451.6409, or by email at medinfo@mnk.com