

The impact of opioid-sparing analgesia on postoperative pain and recovery: a systematic review and meta-analysis of randomized controlled trials

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Supplementary Material 1

The detailed search strategy for each database

PubMed

- #1. "Opioid-sparing" [Title/Abstract]
- #2. "Opioid-free" [Title/Abstract]
- #3. "Less Opioid" [Title/Abstract]
- #4. "Low-Dose Opioids" [Title/Abstract]
- #5. "opioid minimisation" [Title/Abstract]
- #6. "minimal opioid" [Title/Abstract]
- #7. "non-opioid" [Title/Abstract]
- #8. "weak opioid" [Title/Abstract]
- #9. "Ketamine" [MeSH Terms]
- #10. "lidocaine" [MeSH Terms]
- #11. "magnesium" [MeSH Terms]
- #12. "gabapentin" [MeSH Terms]
- #13. "pregabalin" [MeSH Terms]
- #14. "dexmedetomidine" [MeSH Terms]
- #15. "clonidine" [MeSH Terms]
- #16. "Dexamethasone" [MeSH Terms]
- #17. "acetaminophen" [MeSH Terms]
- #18. "NSAIDS" [MeSH Terms]
- #19. "nerve block" [MeSH Terms]
- #20. OR #1-#19
- #21. "pain" [MeSH Terms]
- #22. "Pain Management" [MeSH Terms]
- #23. "Analgesia" [MeSH Terms]
- #24. "Length of stay" [MeSH Terms]
- #25. "patient satisfaction" [MeSH Terms]
- #26. "PONV" [MeSH Terms]
- #27. "Nausea" [MeSH Terms]
- #28. "Vomiting" [MeSH Terms]
- #29. "morphine consumption" [Title/Abstract]
- #30. "opioid consumption" [Title/Abstract]
- #31. "pain scores" [Title/Abstract]
- #32. "VAS" [Title/Abstract]
- #33. "NRS" [Title/Abstract]
- #34. "quality of recovery" [Title/Abstract]
- #35. "QOR" [Title/Abstract]
- #36. "LOS" [Title/Abstract]
- #37. OR #21-#36
- #38. "adult"[MeSH Terms]
- #39. "Postoperative Period"[Mesh]
- #40. "patients undergoing surgery"[Title/Abstract]
- #41. OR #39-#40

#42. #20 AND #37 AND #38 AND #41

Embase

- #1. 'opioid sparing':ti,ab,kw
- #2. 'opioid free':ti,ab,kw
- #3. 'less opioid':ti,ab,kw
- #4. 'low-dose opioids':ti,ab,kw
- #5. 'opioid minimisation':ti,ab,kw
- #6. 'minimal opioid':ti,ab,kw
- #7. 'non opioid':ti,ab,kw
- #8. 'ketamine'/exp
- #9. 'lidocaine'/exp
- #10. 'magnesium'/exp
- #11. 'gabapentin'/exp
- #12. 'pregabalin'/exp
- #13. 'dexmedetomidine'/exp
- #14. 'clonidine'/exp
- #15. 'dexamethasone'/exp
- #16. 'acetaminophen'/exp
- #17. 'nsaids'/exp
- #18. 'nerve block'/exp
- #19. OR #1-#18
- #20. 'pain'/exp
- #21. 'pain management'/exp
- #22. 'analgesia'/exp
- #23. 'length of stay'/exp
- #24. 'patient satisfaction'/exp
- #25. 'ponv'/exp
- #26. 'nausea'/exp
- #27. 'vomiting'/exp
- #28. 'morphine consumption':ti,ab,kw
- #29. 'opioid consumption':ti,ab,kw
- #30. vas:ti,ab,kw
- #31. nrs:ti,ab,kw
- #32. 'quality of recovery':ti,ab,kw
- #33. QOR:ti,ab,kw
- #34. LOS:ti,ab,kw
- #35. OR #20-#34
- #36. 'adult'/exp
- #37. #19 AND #35 AND #36

Cochrane library

- #1. MeSH descriptor: [Ketamine] explode all trees
- #2. MeSH descriptor: [Lidocaine] explode all trees
- #3. MeSH descriptor: [Magnesium] explode all trees
- #4. MeSH descriptor: [Gabapentin] explode all trees

- #5. MeSH descriptor: [Pregabalin] explode all trees
- #6. MeSH descriptor: [Dexmedetomidine] explode all trees
- #7. MeSH descriptor: [Clonidine] explode all trees
- #8. MeSH descriptor: [Dexamethasone] explode all trees
- #9. MeSH descriptor: [Acetaminophen] explode all trees
- #10. MeSH descriptor: [Anti-Inflammatory Agents, Non-Steroidal] explode all trees
- #11. MeSH descriptor: [Nerve Block] explode all trees
- #12. "Opioid-sparing":ti,ab,kw
- #13. "Opioid-free":ti,ab,kw
- #14. "Less Opioid":ti,ab,kw
- #15. "Low-Dose Opioids":ti,ab,kw
- #16. "opioid minimisation":ti,ab,kw
- #17. "minimal opioid":ti,ab,kw
- #18. "non-opioid":ti,ab,kw
- #19. OR #1-#18
- #20. MeSH descriptor: [Pain] explode all trees
- #21. MeSH descriptor: [Pain Management] explode all trees
- #22. MeSH descriptor: [Analgesia] explode all trees
- #23. MeSH descriptor: [Length of Stay] explode all trees
- #24. MeSH descriptor: [Patient Satisfaction] explode all trees
- #25. MeSH descriptor: [Postoperative Nausea and Vomiting] explode all trees
- #26. MeSH descriptor: [Nausea] explode all trees
- #27. MeSH descriptor: [Vomiting] explode all trees
- #28. "morphine consumption":ti,ab,kw
- #29. "opioid consumption":ti,ab,kw
- #30. VAS:ti,ab,kw
- #31. NRS:ti,ab,kw
- #32. "quality of recovery":ti,ab,kw
- #33. QOR:ti,ab,kw
- #34. LOS:ti,ab,kw
- #35. OR #20-#34
- #36. MeSH descriptor: [Adult] explode all trees
- #37. #19 AND #35 AND #36

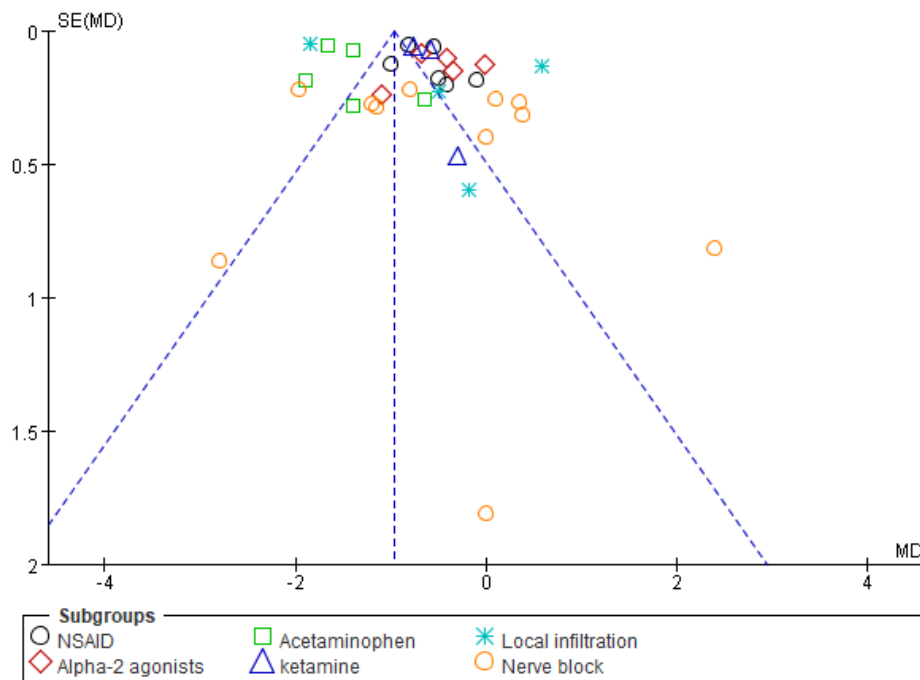
Web of Science Core Collection

- #1. "Opioid-sparing"[Topic]
- #2. "Opioid-free"[Topic]
- #3. "Less Opioid"[Topic]
- #4. "Low-Dose Opioids"[Topic]
- #5. "opioid minimisation"[Topic]
- #6. "minimal opioid"[Topic]
- #7. "non-opioid"[Topic]
- #8. "Ketamine"[Topic]
- #9. "lidocaine"[Topic]
- #10. "magnesium"[Topic]

- #11. "gabapentin"[Topic]
- #12. "pregabalin"[Topic]
- #13. "dexmedetomidine"[Topic]
- #14. "clonidine"[Topic]
- #15. "Dexamethasone"[Topic]
- #16. "acetaminophen"[Topic]
- #17. "NSAIDS"[Topic]
- #18. "nerve block"[Topic]
- #19. OR #1-#18
- #20. "pain"[Topic]
- #21. "Pain Management"[Topic]
- #22. "Analgesia"[Topic]
- #23. "Length of stay"[Topic]
- #24. "patient satisfaction"[Topic]
- #25. "patient satisfaction"[Topic]
- #26. "Nausea"[Topic]
- #27. "Vomiting"[Topic]
- #28. "morphine consumption"[Topic]
- #29. "opioid consumption"[Topic]
- #30. "VAS"[Topic]
- #31. "NRS"[Topic]
- #32. "quality of recovery"[Topic]
- #33. "QOR"[Topic]
- #34. "LOS"[Topic]
- #35. OR #20-#34
- #36. "adult"[Topic]
- #37. #19 AND #35 AND #36

Supplementary Material 2

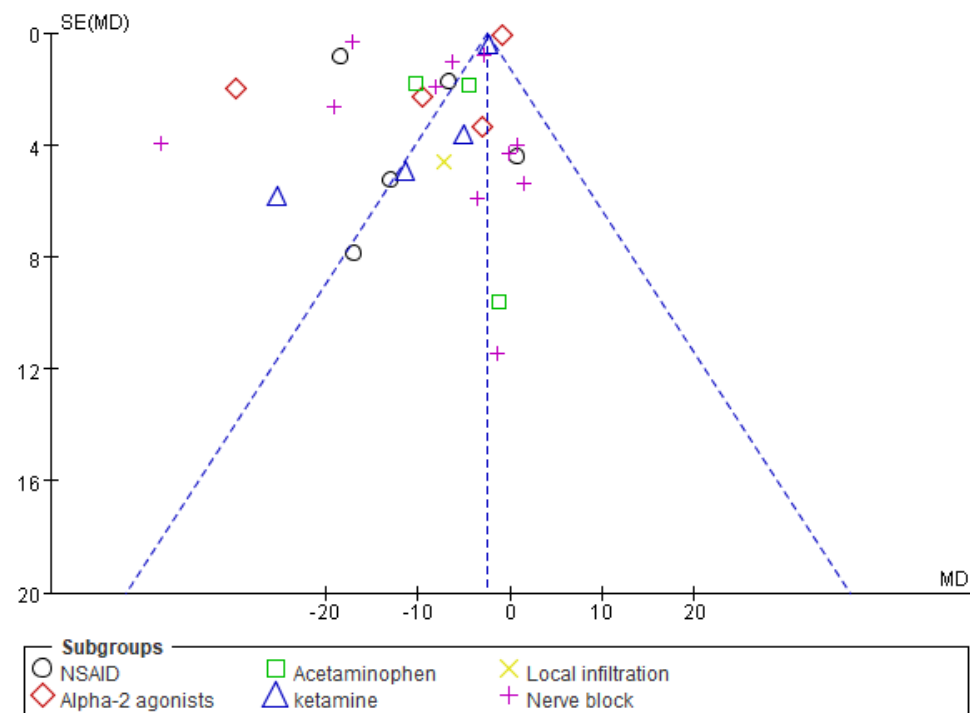
Funnel plot of outcome: postoperative 24-hour pain scores



NSAID: nonsteroidal anti-inflammatory drug

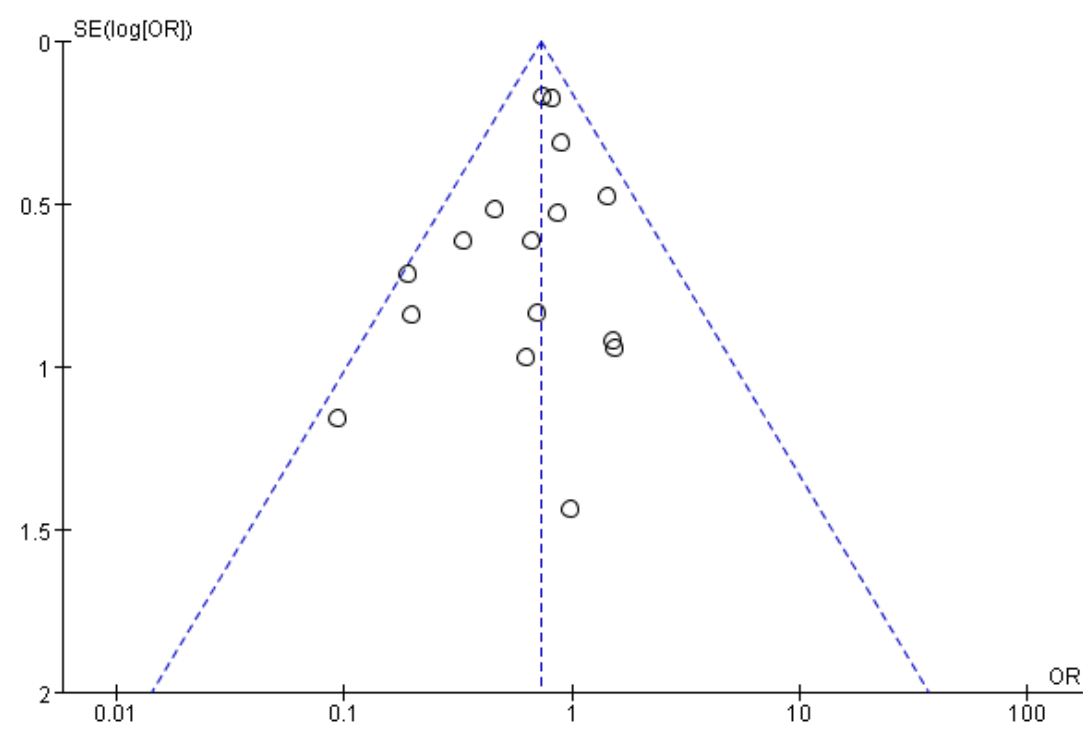
Supplementary Material 3

Funnel plot of outcome: total morphine consumption



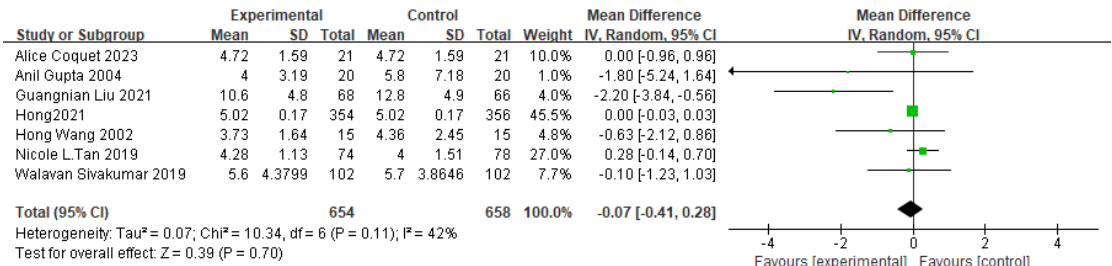
NSAID: nonsteroidal anti-inflammatory drug

Supplementary Material 4
Funnel plot of outcome: PONV



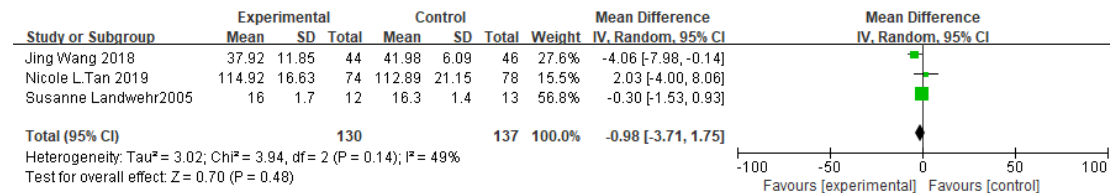
PONV: post-opioid nausea and vomiting

Supplementary Material 5
Forest plot of outcome: length of stay



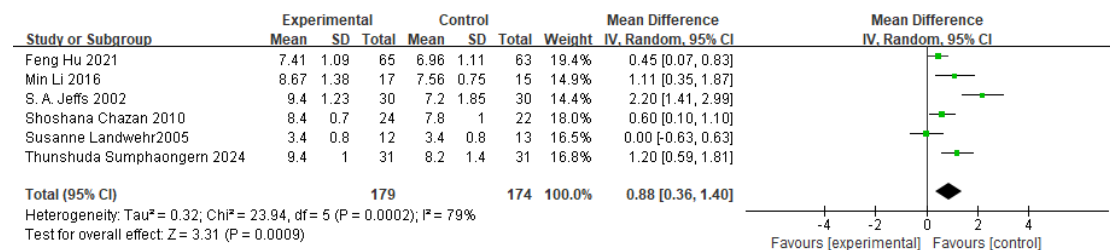
Supplementary Material 6

Forest plot of outcome: quality of recovery



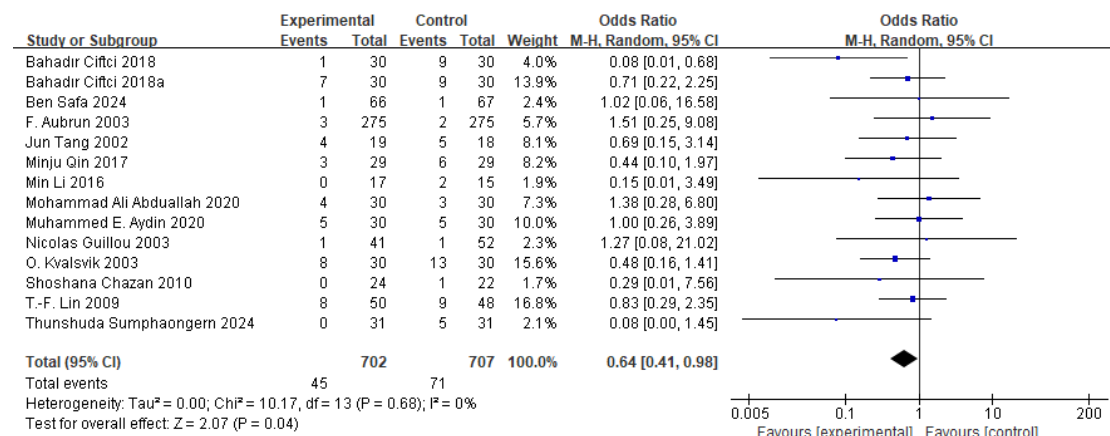
Supplementary Material 7

Forest plot of outcome: patient satisfaction



Supplementary Material 8

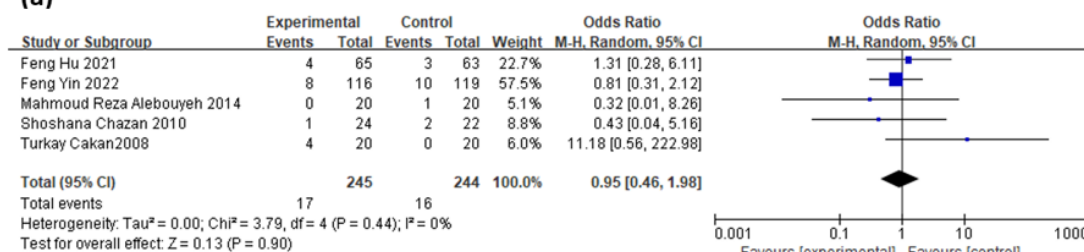
Forest plot of outcome: pruritus



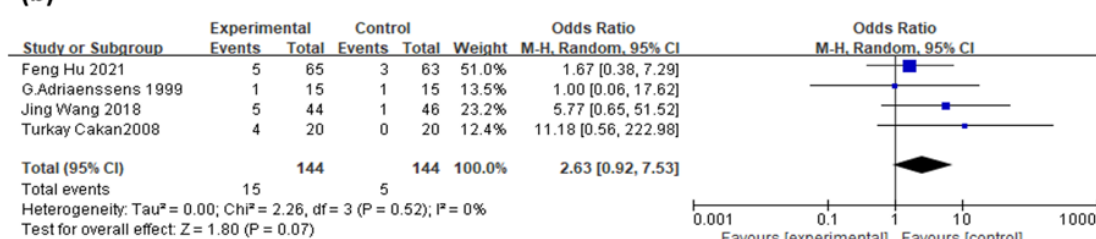
Supplementary Material 9

Forest plot of outcome: dizziness(a), drowsiness(b), sedation(c), hypotension(d), urinary retention(e)

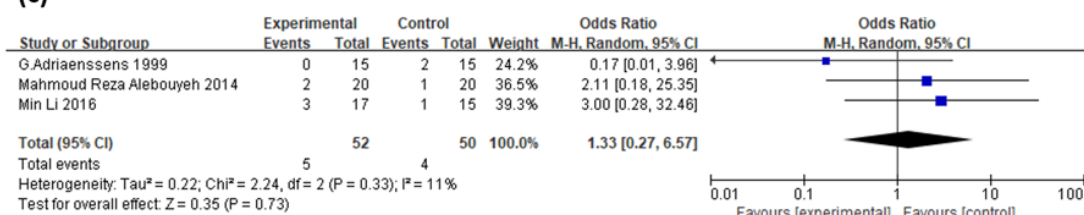
(a)



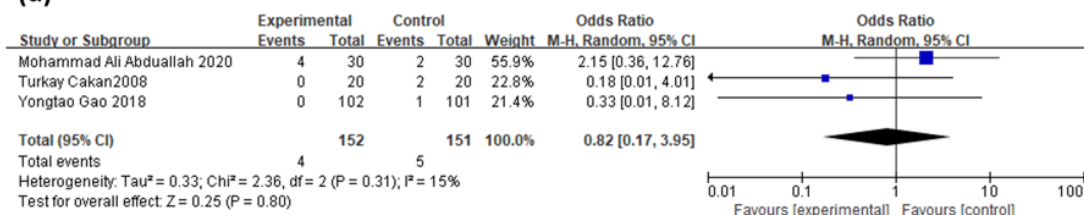
(b)



(c)



(d)



(e)

