

Appendix 1 Search strategy for systematic review and meta-analysis

Electronic searches were performed in the following databases to identify eligible studies

1. PubMed (n = 71)
2. SCOPUS (n = 155)
3. Web of Science (n = 180)

There were no language or publication period limitations.

PubMed

- #1 Search: Ureteral Calculi [Title/Abstract] Sort by: Most Recent
- #2 Search: Ureteral Calculi [MeSH Terms] Sort by: Most Recent
- #3 Search: Kidney Calculi [Title/Abstract] Sort by: Most Recent
- #4 Search: Kidney Calculi [MeSH Terms] Sort by: Most Recent
- #5 Search: Urinary Calculi [Title/Abstract] Sort by: Most Recent
- #6 Search: Urinary Calculi [MeSH Terms] Sort by: Most Recent
- #7 Search: Stone [Title/Abstract] Sort by: Most Recent
- #8 Search: Urolithiasis [Title/Abstract] Sort by: Most Recent
- #9 Search: Urolithiasis [MeSH Terms] Sort by: Most Recent
- #10 Search: Nephrolithiasis [Title/Abstract] Sort by: Most Recent
- #11 Search: SAS [Title/Abstract] Sort by: Most Recent
- #12 Search: Suctioning Sheath [Title/Abstract] Sort by: Most Recent
- #13 Search: Suction Sheath [Title/Abstract] Sort by: Most Recent
- #14 Search: Suction-assisted Sheath [Title/Abstract] Sort by: Most Recent
- #15 Search: Vacuum Sheath [Title/Abstract] Sort by: Most Recent
- #16 Search: Vacuum-assisted Sheath [Title/Abstract] Sort by: Most Recent
- #17 Search: ((#1) OR (#2) OR (#3) OR (#4) OR (#5) OR (#6) OR (#7)) AND ((#8) OR (#9) OR (#10)) OR ((#11) OR (#12) OR (#13) OR (#14) OR (#15) OR (#16)) Sort by: Most Recent

SCOPUS

TITLE-ABS-KEY ("Ureteral Calculi" OR "Kidney Calculi" OR "Urinary Calculi" OR "Stone") AND TITLE-ABS-KEY ("Urolithiasis" OR "Nephrolithiasis") AND TITLE-ABS-KEY ("SAS" OR "Suctioning Sheath" OR "Suction Sheath" OR "Suction-assisted Sheath" OR "Vacuum Sheath" OR "Vacuum-assisted Sheath")

Web of Science

- #1 TS = (Ureteral Calculi)
- #2 TS = (Kidney Calculi)
- #3 TS = (Urinary Calculi)
- #4 TS = (Stone)
- #5 TS = (Urolithiasis)
- #6 TS = (Nephrolithiasis)
- #7 TS = (SAS)
- #8 TS = (Suctioning Sheath)
- #9 TS = (Suction Sheath)

#10 TS = (Suction-assisted Sheath)

#11 TS = (Vacuum Sheath)

#12 TS = (Vacuum-assisted Sheath)

#13 TS = (((#1) OR (#2) OR (#3) OR (#4)) AND ((#5) OR (#6)) AND ((#7) OR (#8) OR (#9) OR (#10) OR (#11) OR (#12)))

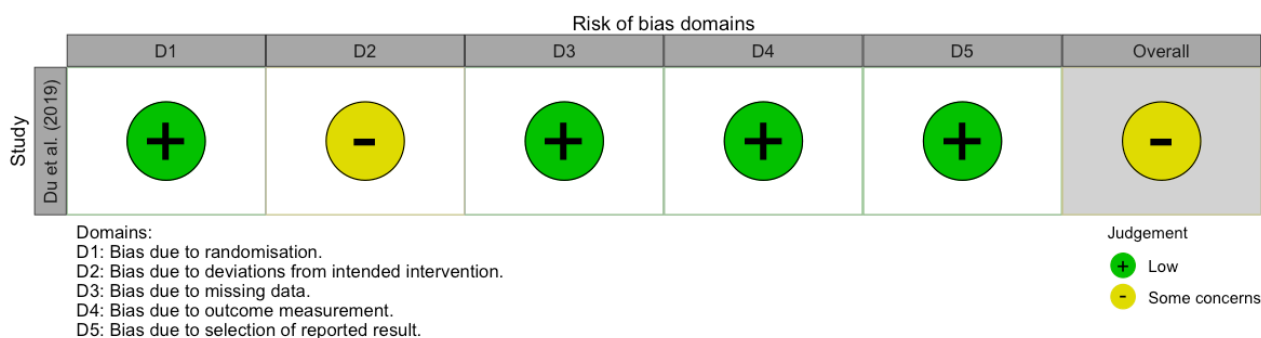


Figure S1 RoB2.

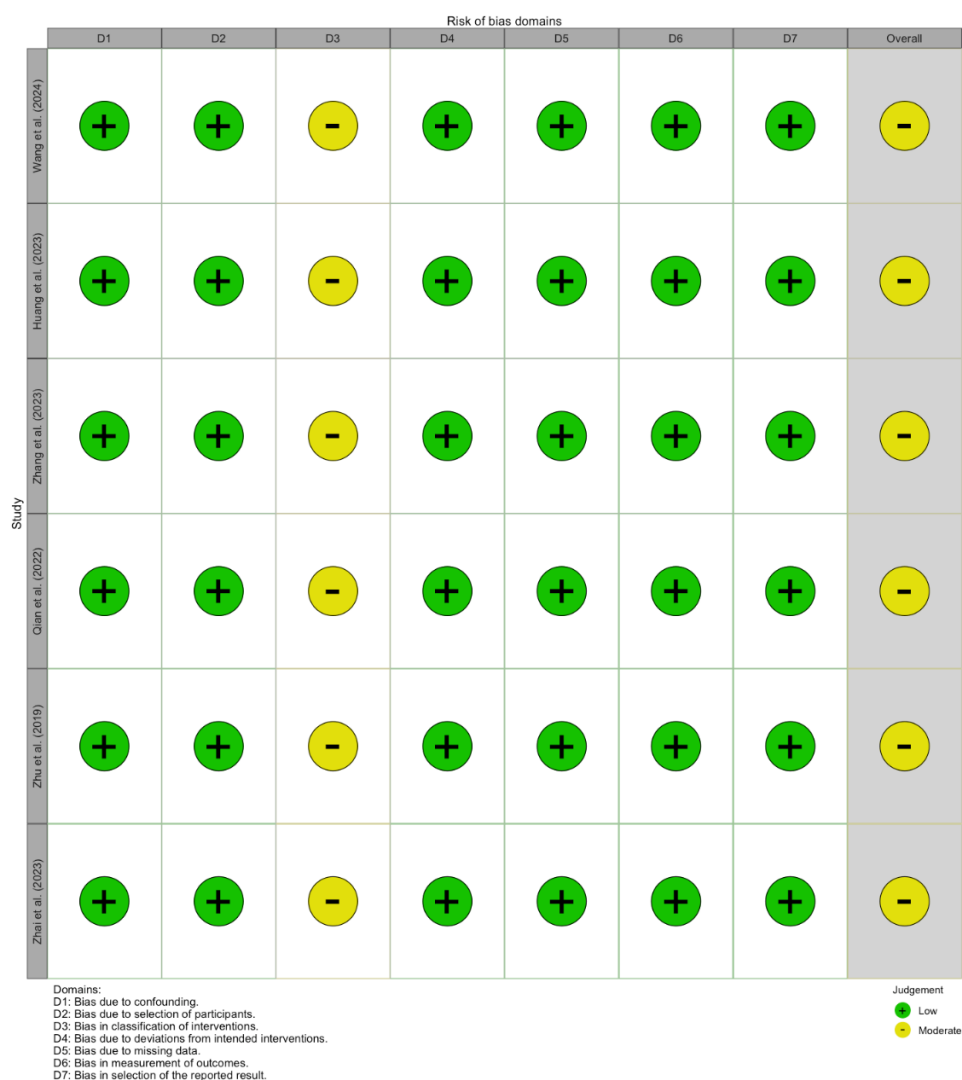


Figure S2 ROBINS-I.

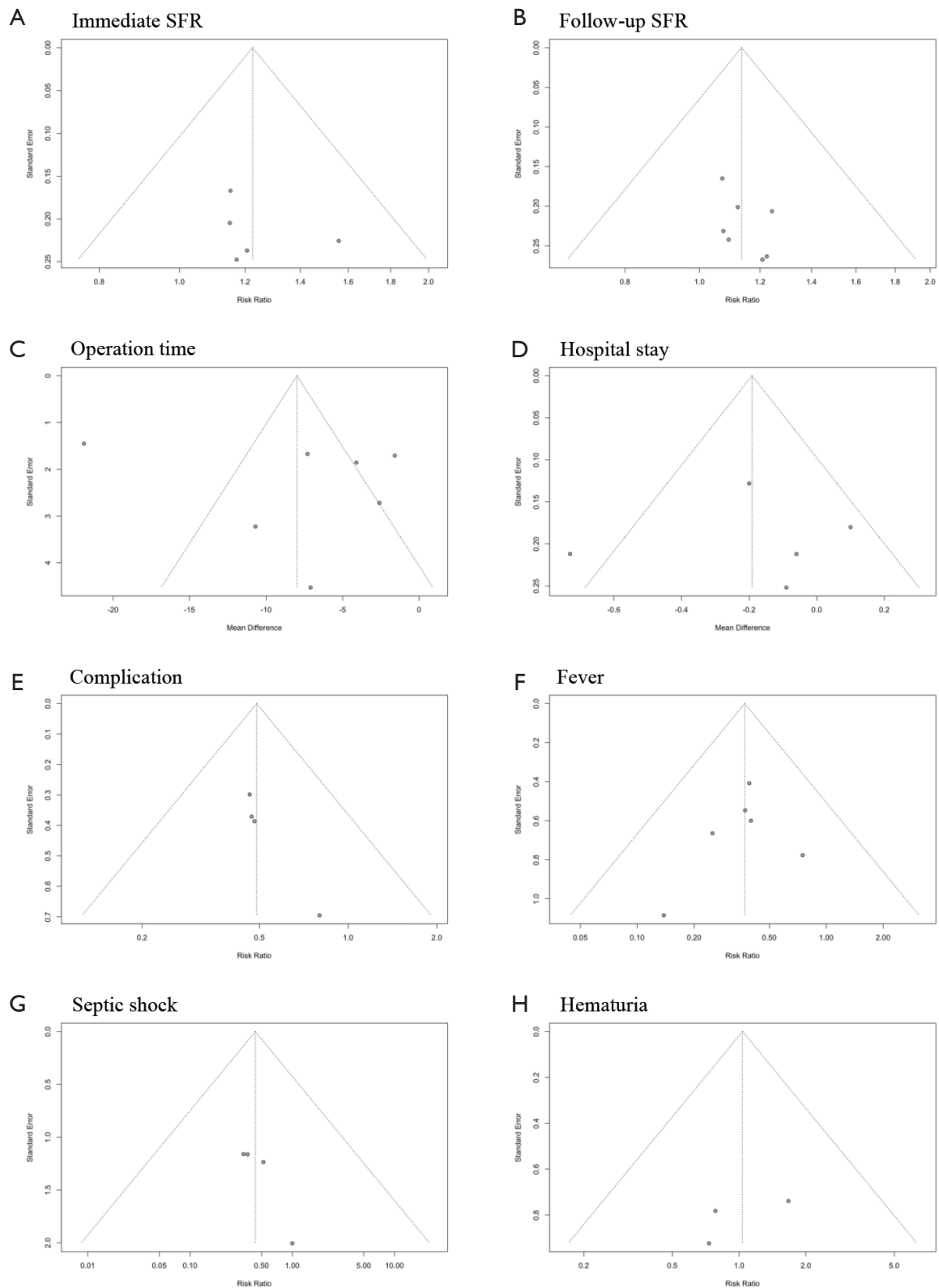
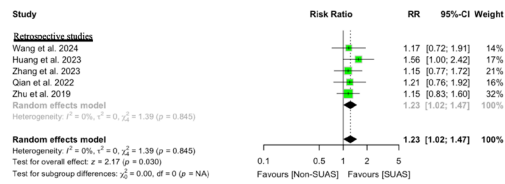
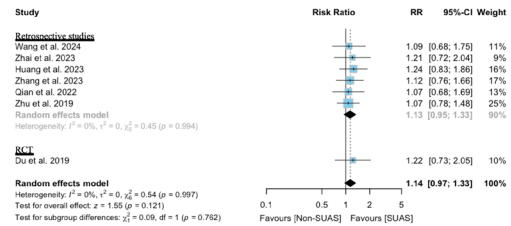


Figure S3 Funnel plots.

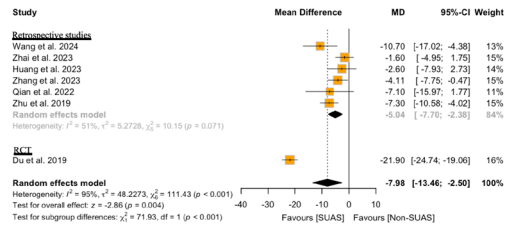
A Immediate SFR



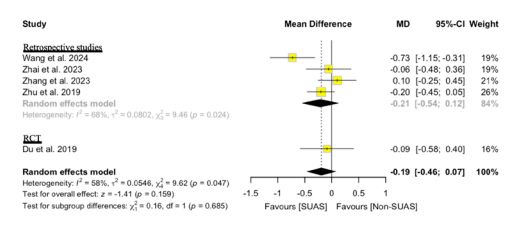
B Follow-up SFR



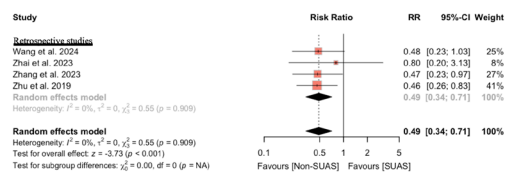
C Operation time



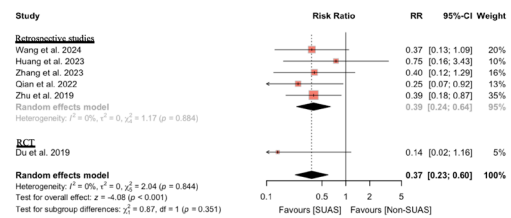
D Hospital stay



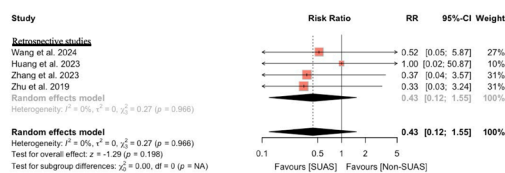
E Complication



F Fever



G Septic shock



H Hematuria

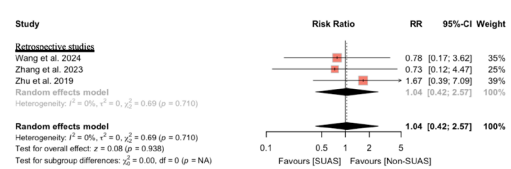


Figure S4 Subgroup analysis stratified by study design.

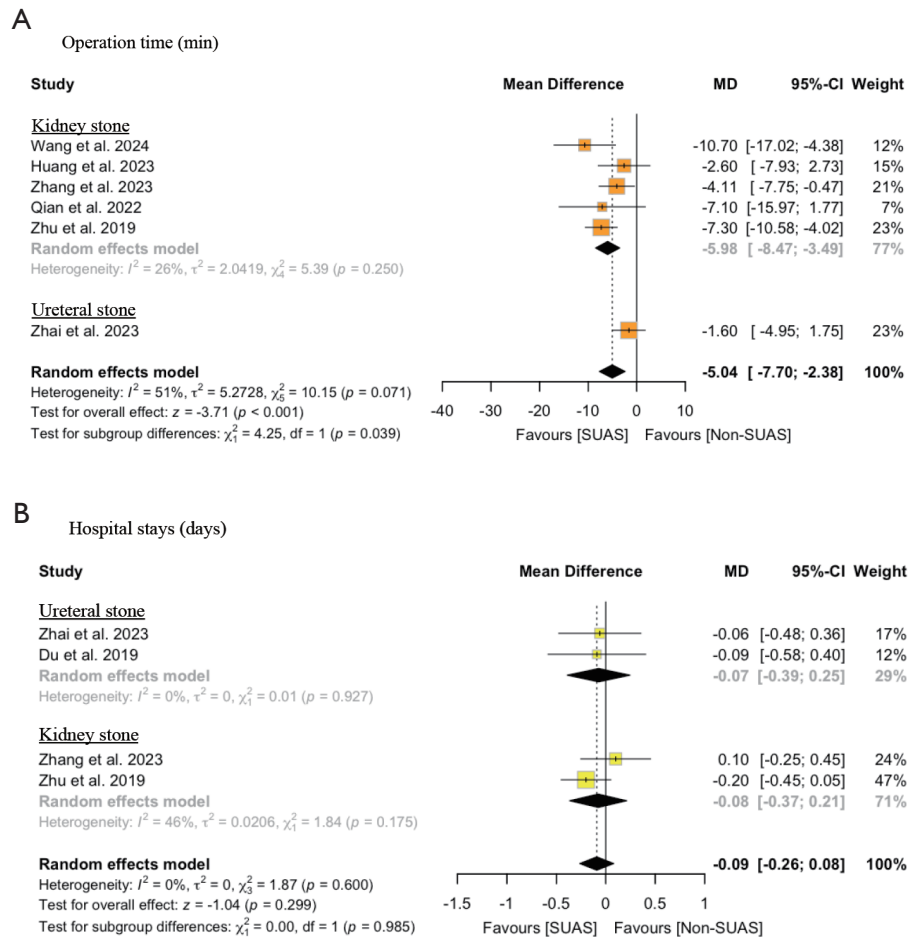


Figure S5 Sensitivity analysis: (A) operation time excluding the study by Du *et al.* (2019); (B) hospital stays excluding the study by Wang *et al.* (2024).

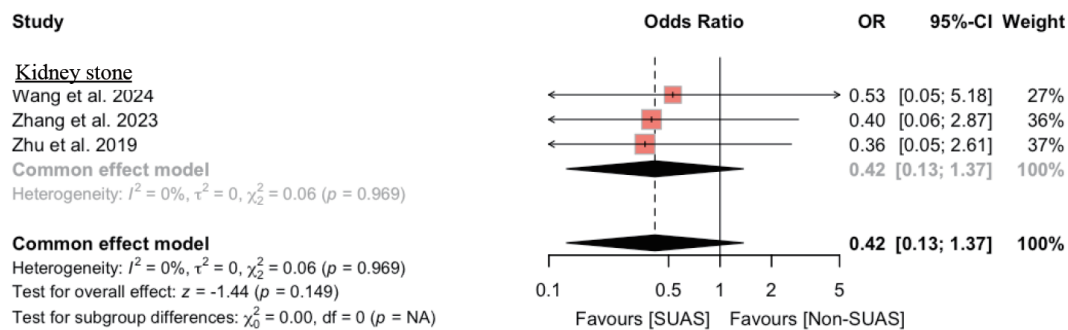
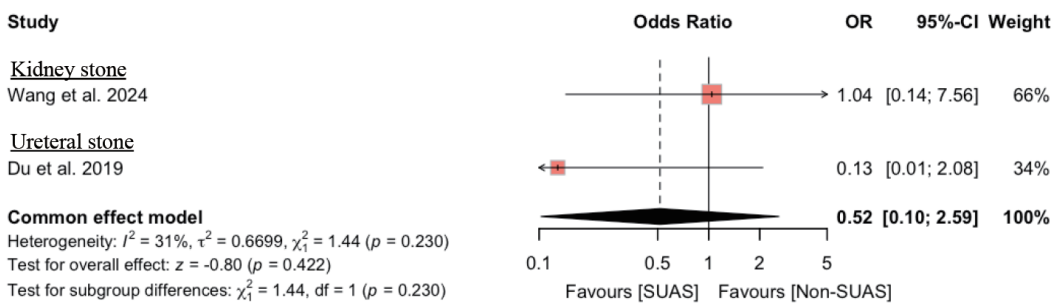


Figure S6 Forest plot of the meta-analysis comparing SUAS *vs.* non-SUAS using Peto's method for septic shock.

A Perforation



B Stricture

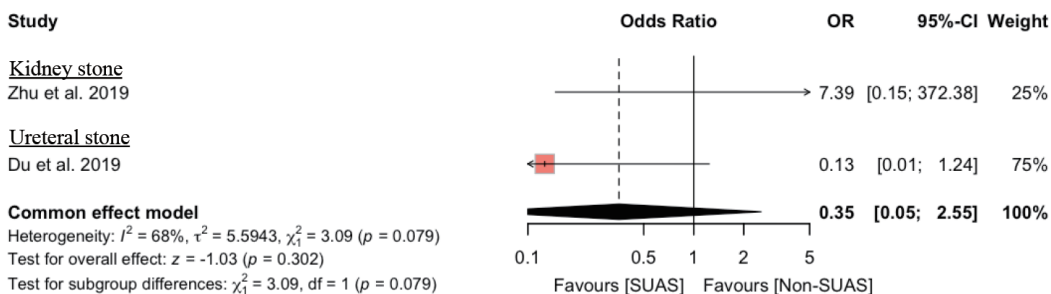


Figure S7 Forest plots of the meta-analysis comparing SUAS *vs.* non-SUAS for (A) perforation and (B) stricture.