Table S1: Methodological quality of the included cohort observational studies based on the New Castle Ottawa scale for assessing the quality of epidemiological studies.

Study	Selection				Comparability	Outcome			Total Score
	Representativeness of the exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure[1]	Outcome was not present at start of study[2]	Control for 2 important factors[3,4]	Assessment of outcome	Follow-up long enough	Adequacy of follow-up of cohort[7]	
Oliveira et al 2020	*	*	*	-	*	*	*	*	7
Chusri et al 2019	*	*	*	-	*	*	*	*	7
Amat et al 2018	*	*	*	-	*	*	*	*	7
Liang et al 2017	*	*	*	-	*	*	*	*	7
Kim et al 2016	*	*	*	-	*	*	*	*	7
Cheng et al 2015	*	*	*	*	*	*	*	*	8
Chaung et al 2014	*	*	*	-	*	*	*	*	7
Diakos et al 2014	*	*	*	-	*	*	*	*	7
Kwon et al 2014	*	*	*	-	*	*	*	*	7
Lopez-Cortes et al 2014	*	*	*	*	**	*	*	*	9
Papadimitriou-Olivgeris et al 2014	*	*	*	-	*	*	*	*	7
Zarkotou et al 2011	*	*	*	*	*	*	*	*	8
Ku et al 2012	*	*	*	-	*	*	*	*	7

Seok et al 2021	*	*	-	*	*	*	*	*	7

[1] If the exposure data was obtained from prescription database or medical record, a point was assigned.

[2] If the study design is prospective study, a point was assigned.

[3] If adjusted for age, a point was assigned.

[4] If adjusted for any other additional factors, a point was assigned.

[5] If the completeness of follow-up was 80% or more, a point was assigned.

Table S2: Quality of evidence for the included outcomes.

Outcome	Number of studies	GRADE quality assessment					
		Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall quality of evidence
Tigecycline monotherapy versus colistin monotherapy							
Clinical response	3	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Overall mortality	9	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
30-day mortality	5	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊖ Moderate
In-hospital mortality	6	Low	Series inconsistency (due to significant heterogeneity)	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊖ Moderate
7-day mortality	1	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Recurrence of infection	1	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High

Renal impairment	4	Low	Series inconsistency (due to significant heterogeneity)	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊖ Moderate
Hepatic enzymes abnormalities	2	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Monotherapy versus combination therapy							
Overall mortality	7	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
30-day mortality	6	Low	No series inconsistency	No series indirectness	No series imprecision	Detected	⊕⊕⊕⊖ Moderate
In-hospital mortality	3	Low	Series inconsistency (due to significant heterogeneity)	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊖ Moderate
14-day mortality	2	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Renal impairment	1	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Tigecycline combination and colistin combination							
Clinical response	2	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High

Overall mortality	7	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
30-day mortality	5	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
In-hospital mortality	4	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
7-day mortality	1	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
14-day mortality	1	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Recurrence of infection	1	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Renal impairment	3	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High
Hepatic enzymes abnormalities	1	Low	No series inconsistency	No series indirectness	No series imprecision	Undetected	⊕⊕⊕⊕ High

Table S3: PRISMA Checklist.

Section and Topic	Item #	Checklist item
TITLE		
Title	1	Identify the report as a systematic review.
ABSTRACT		
Abstract	2	See the PRISMA 2020 for Abstracts checklist.
INTRODUCTION		
Rationale	3	Describe the rationale for the review in the context of existing knowledge.
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.
METHODS		
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify thedate when each source was last searched or consulted.
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each recordand each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in theprocess.
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in eachstudy were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics andcomparing against the planned groups for each synthesis (item #5)).
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.

	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe themodel(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.

Table S4: Search strategies

Database: Medline <1950 to 2021 May 15>
Search Strategy:
1 tigecycline or tygacil or glycylcycline or TGC, or 'GAR-936'or tigecycline monotherapy, tigecycline combination.mp. (4583)
2 Colistin or colistin monotherapy or colistin combination.mp. (2881)
3 1 and 2 (903)
4 Bactaeremia or bacteremia or bloodstream infection or sepsis or septicaemia/ (57014)
5 Multidrug-resistant or MDR or carbapenem-resistant or extensively drug resistant or XDR or carbapenem combination therapy/ (55730)
6 Acinetobacter baumannii or Klebsiella pneumoniae or Pseudomonas aeruginosa or carbapenemase producing or Enterobacteriaceaemp or carbapenem-resistant Enterobacteriaceae, or CRE (17414)
7 3 and (4 or 5 or 6) (30195)
8 observational*.tw. (229)
9 Comparative study*.tw. (1404)
10 clinical trial*.tw. (198)
11 randomized controlled trial/ (153)
12 controlled clinical trial*.tw. (21)
13 or/7-12 (1870)
14 7 and 13 (1455)
15 limit 14 to (Human and English language) (1373)
Database: EBM Reviews - Cochrane Central Register of Controlled Trials <April 2020>
Search Strategy:
1 tigecycline or tygacil or glycylcycline or TGC, or 'GAR-936'or tigecycline monotherapy, tigecycline combination (title abstract keyword) (238)
2 Colistin or colistin monotherapy or colistin combination (title abstract keyword) (462)
3 1 and 2 (35)
4 Bactaeremia or bacteremia or bloodstream infection or sepsis or septicaemia or Multidrug-resistant or MDR or carbapenem-resistant or extensively drug resistant or XDR or carbapenem combination therapy or Acinetobacter baumannii or Klebsiella pneumoniae or Pseudomonas aeruginosa or carbapenemase producing or Enterobacteriaceaemp or carbapenem-resistant Enterobacteriaceae, or CRE (18189)
5 3 and 4 (32)
Database: Embase <1974 to May 15, 2021>
Search Strategy:

1 tigecycline or tygacil or glycylcycline or TGC, or ‘GAR-936’or tigecycline monotherapy, tigecycline combination.mp. (5342)
2 Colistin or colistin monotherapy or colistin combination.mp. (3468)
3 1 and 2 (843)
4 Bactaeremia or bacteremia or bloodstream infection or sepsis or septicaemia/ (62865)
5 Multidrug-resistant or MDR or carbapenem-resistant or extensively drug resistant or XDR or carbapenem combination therapy/ (69521)
6 Acinetobacter baumannii or Klebsiella pneumoniae or Pseudomonas aeruginosa or carbapenemase producing or Enterobacteriaceaemp or carbapenem-resistant Enterobacteriaceae, or CRE (21535)
7 3 and 4 or 5 or 6 (41532)
8 observational*.tw. (351)
9 Comparative study*.tw. (1605)
10 clinical trial*.tw. (262)
11 randomized controlled trial/ (167)
12 controlled clinical trial*.tw. (46)
13 or/7-12 (2154)
14 7 and 13 (1563)
15 limit 14 to (Human and English language) (1482)
Grey literature sources: clinicaltrial.gov, and Google Scholar < May 15, 2021>
Search Strategy:
All possible combinations among search terms from each of the following domains were manually created and searched. Only a single term from each domain was used in any combination.
- Drug 1 domain: tigecycline or tygacil or glycylcycline or TGC, or ‘GAR-936’, tigecycline monotherapy, tigecycline combination.
- Drug 2 domain: colistin, colistin monotherapy, colistin combination
- Condition domain: Bacteremia or bacteremia or bloodstream infection or sepsis or septicaemia or Multidrug-resistant or MDR or carbapenem-resistant or extensively drug resistant or XDR or carbapenem combination therapy or Acinetobacter baumannii or Klebsiella pneumoniae or Pseudomonas aeruginosa or carbapenemase producing or Enterobacteriaceaemp or carbapenem-resistant Enterobacteriaceae, or CRE.
Grey literature sources: clinicaltrial.gov, and Google Scholar < May 15, 2021>
Search Strategy:
All possible combinations among search terms from each of the following domains were manually created and searched. Only a single term from each domain was used in any combination.

- Drug 1 domain: tigecycline or tygacil or glycylcycline or TGC, or ‘GAR-936’, tigecycline monotherapy, tigecycline combination.
- Drug 2 domain: colistin, colistin monotherapy, colistin combination
- Condition domain: Bacteremia or bacteremia or bloodstream infection or sepsis or septicaemia or Multidrug-resistant or MDR or carbapenem-resistant or extensively drug resistant or XDR or carbapenem combination therapy or Acinetobacter baumannii or Klebsiella pneumoniae or Pseudomonas aeruginosa or carbapenemase producing or Enterobacteriaceaemp or carbapenem-resistant Enterobacteriaceae, or CRE.

Supplementary Figure Materials S1. Additional base case analysis results

Figure S1.1. Funnel plot for overall mortality: colistin versus tigecycline monotherapies

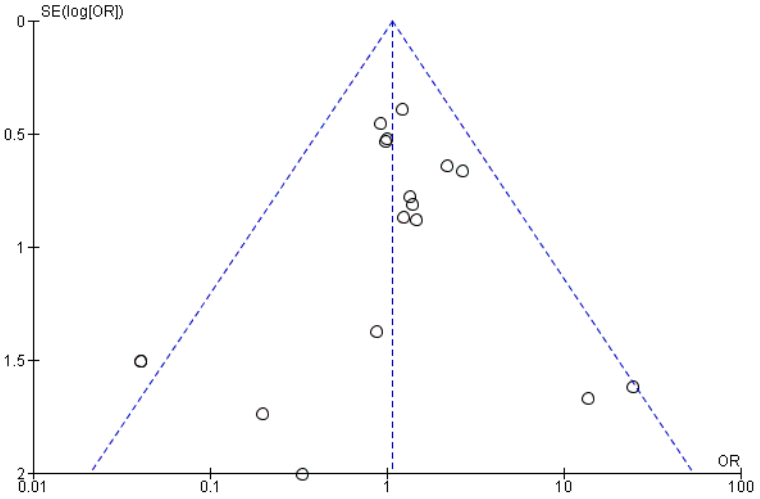


Figure S1.2. Sensitivity analysis for in-hospital mortality: colistin versus tigecycline monotherapies

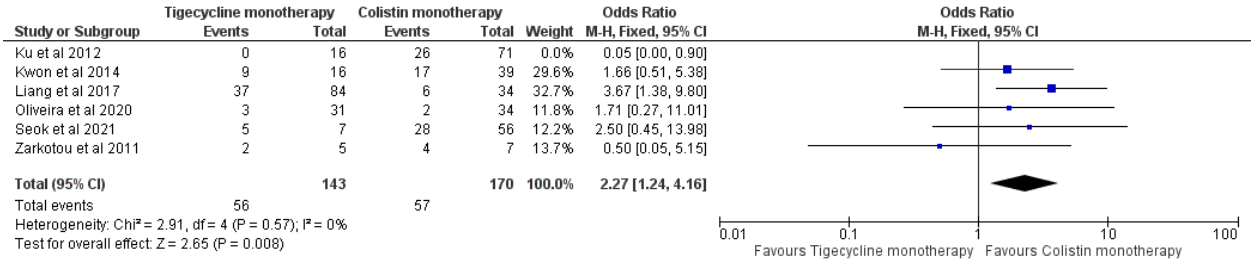


Figure S1.3. Recurrence: colistin versus tigecycline monotherapies

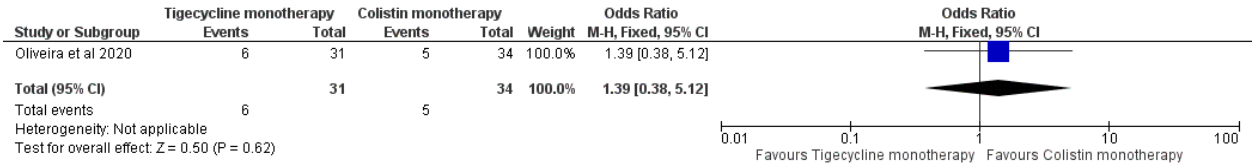


Figure S1.4. 7-day mortality: colistin versus tigecycline monotherapies

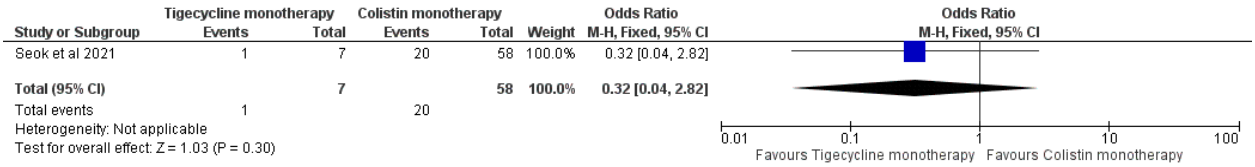


Figure S1.5. Renal impairment: colistin versus tigecycline monotherapies

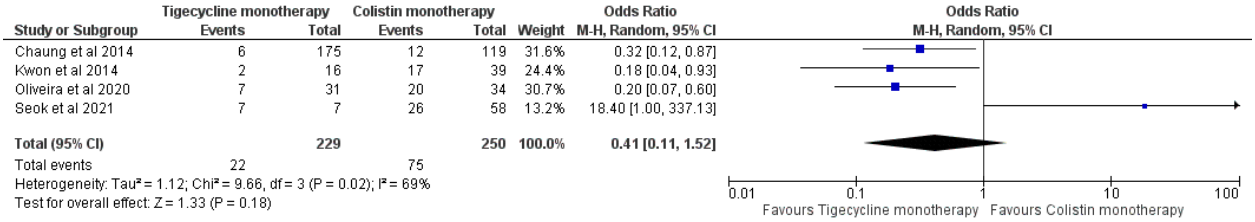


Figure S1.6. Sensitivity analysis for renal impairment: colistin versus tigecycline monotherapies

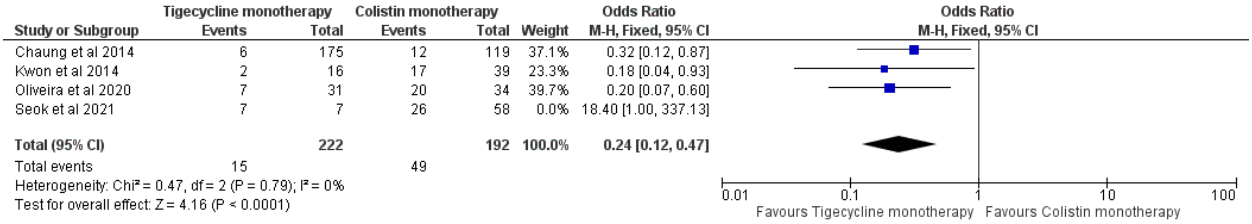


Figure S1.7. Liver enzymes abnormalities: colistin versus tigecycline monotherapies

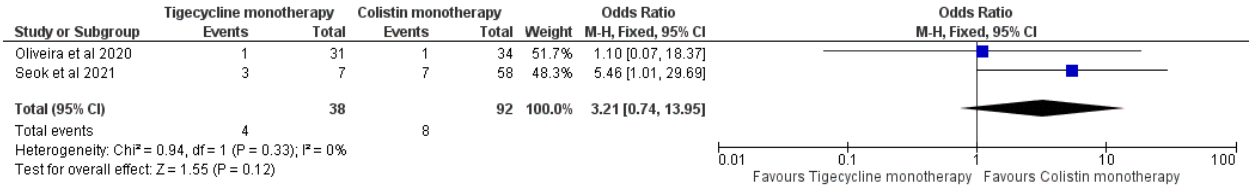


Figure S1.8. Funnel plot for overall mortality: monotherapy versus combination

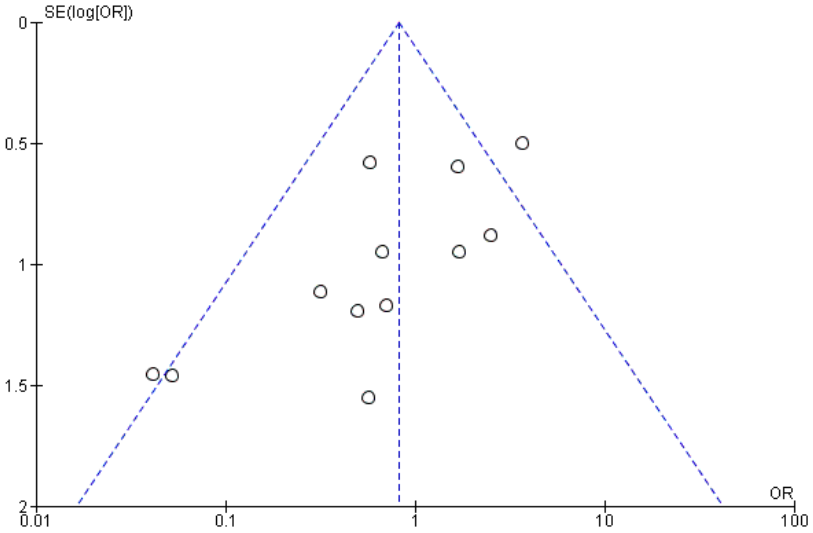


Figure S1.9. Funnel plot for 30-day mortality: monotherapy versus combination

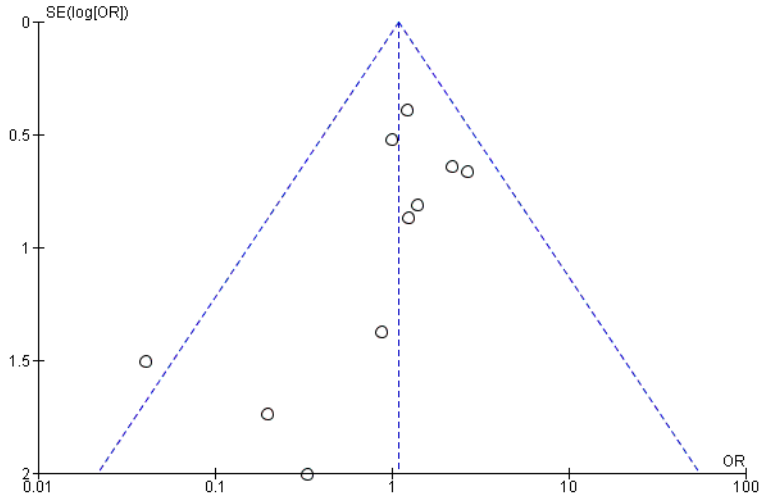


Figure S1.10. Sensitivity analysis for in-hospital mortality: monotherapy versus combination

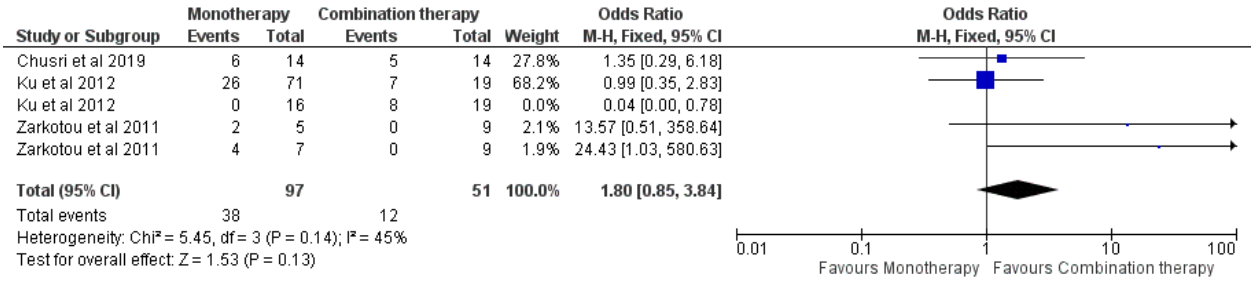


Figure S1.11. 14-day mortality: monotherapy versus combination

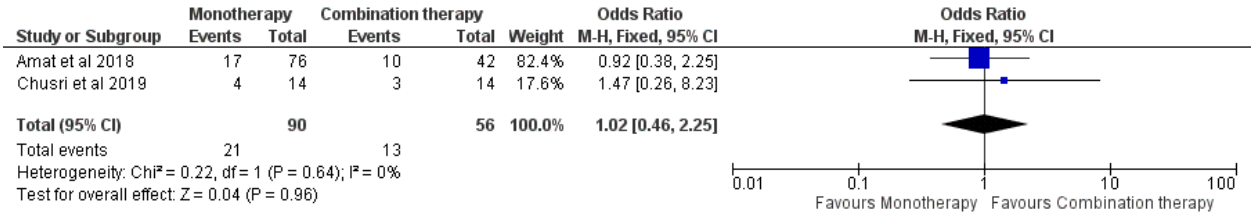


Figure S1.12. Renal impairment: monotherapy versus combination

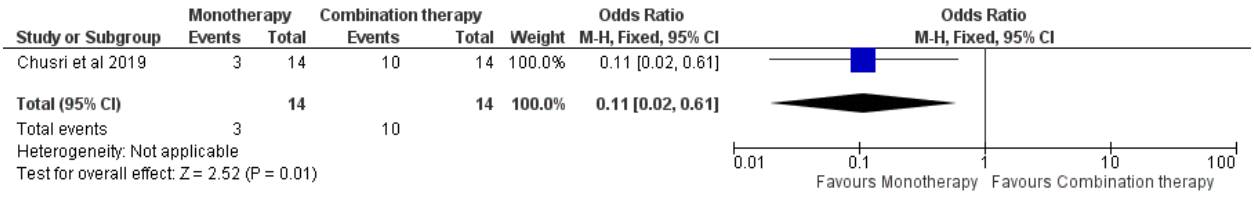


Figure S1.13. Funnel plot for overall mortality: colistin versus tigecycline combinations

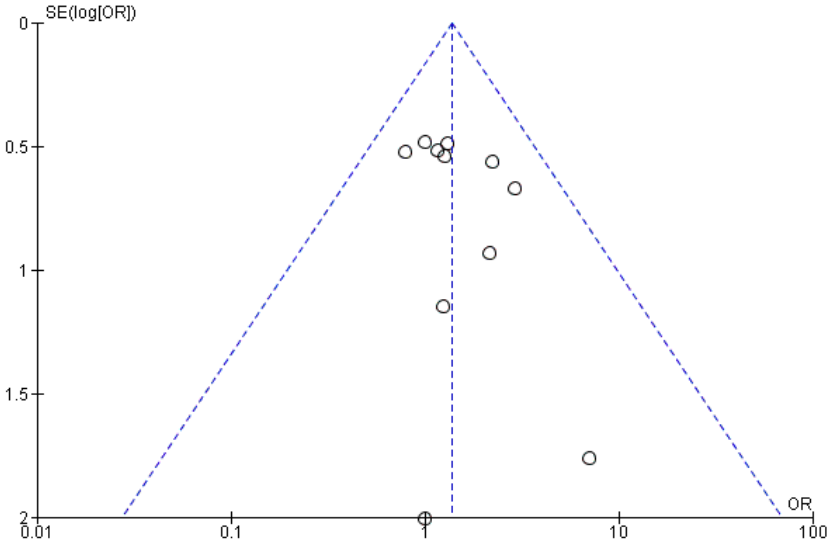


Figure S1.14. Recurrence: colistin versus tigecycline combinations

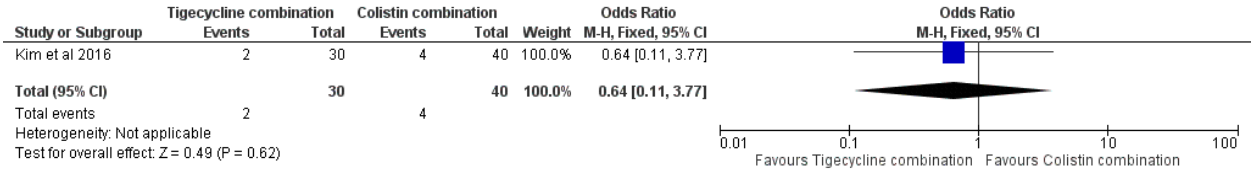


Figure S1.15. 7-day mortality: colistin versus tigecycline combinations

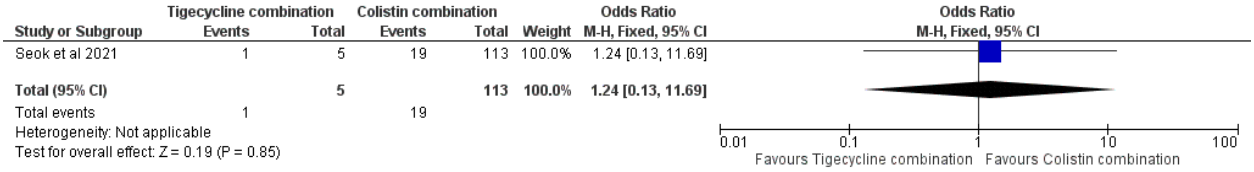


Figure S1.16. 14-day mortality: colistin versus tigecycline combinations

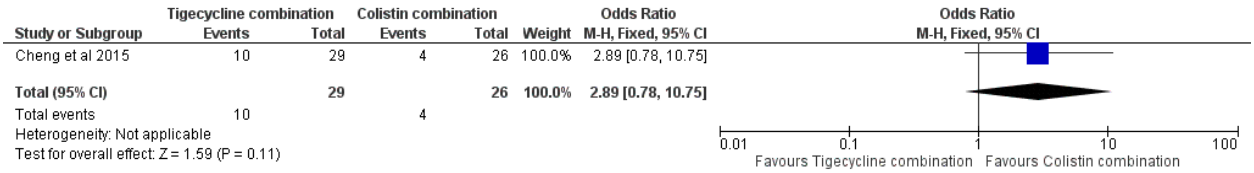


Figure S1.17. Renal impairment: colistin versus tigecycline combinations

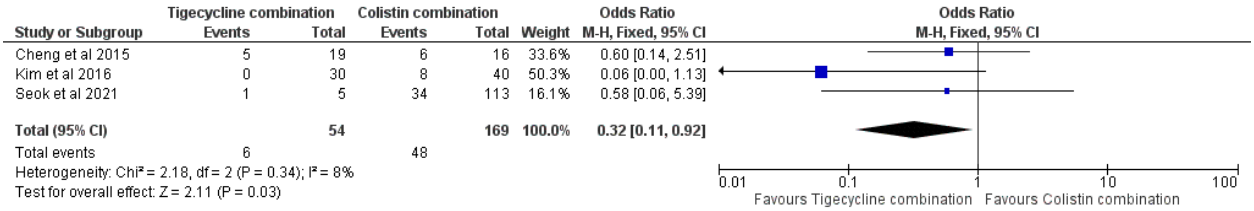
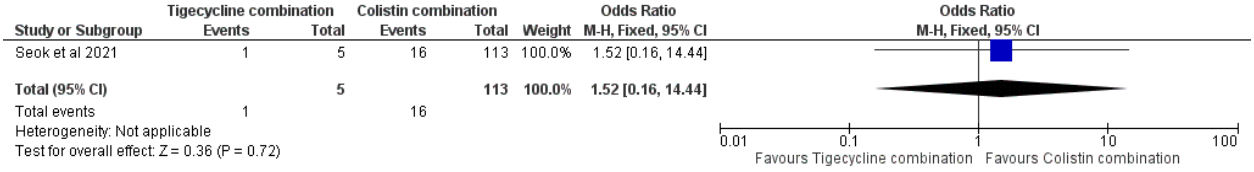


Figure S1.18. Liver enzymes abnormalities: colistin versus tigecycline combinations



Supplementary Materials S2. Subgroup analysis results

Figure S2.1. Subgroup analysis for clinical cure: colistin versus tigecycline monotherapies

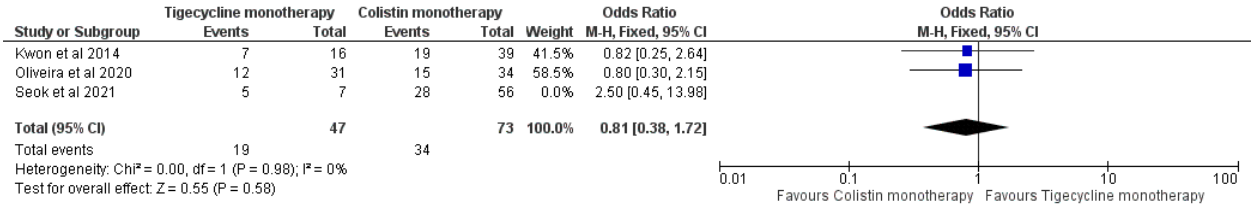


Figure S2.2. Subgroup analysis for 28-day and 30-day mortalities: colistin versus tigecycline monotherapies

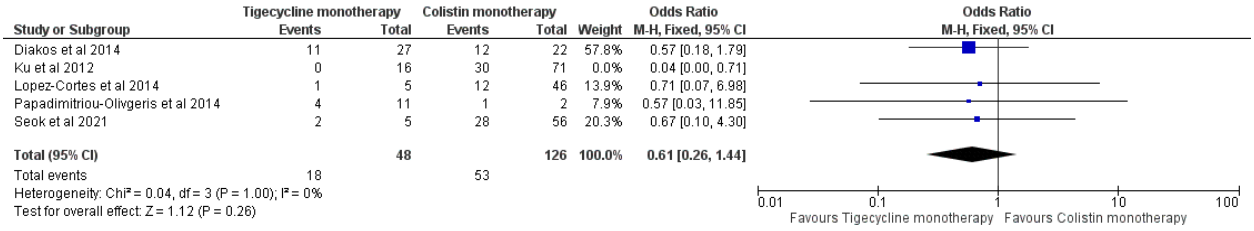


Figure S2.3. Subgroup analysis for in-hospital mortality, excluding ICU and infection-caused mortality: colistin versus tigecycline monotherapies

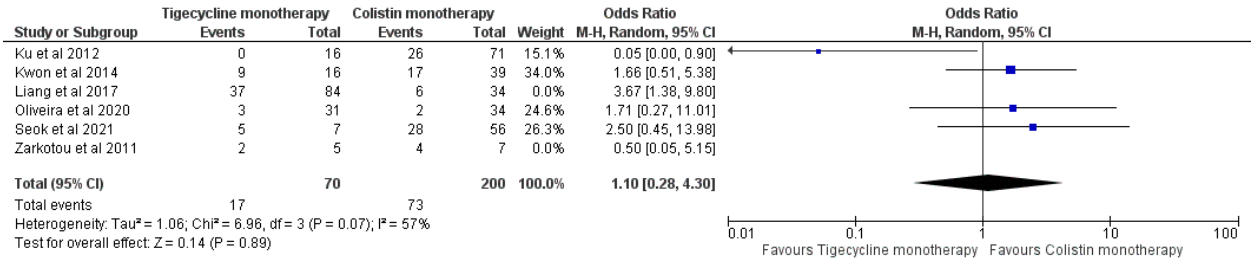


Figure S2.4. Subgroup analysis for nephrotoxicity: colistin versus tigecycline monotherapies

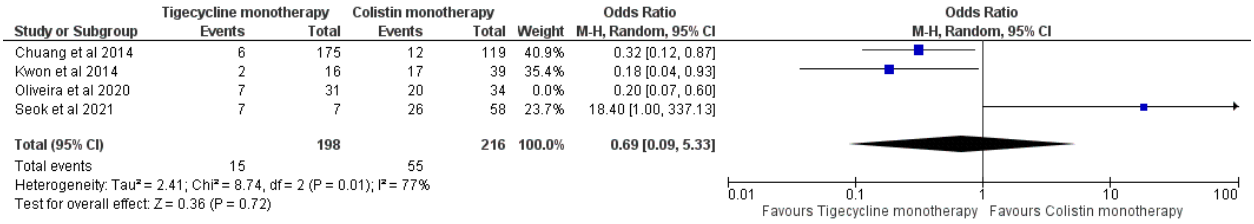


Figure S2.5. Subgroup analysis for 30-day mortality with the colistin monotherapy only: monotherapy versus combination

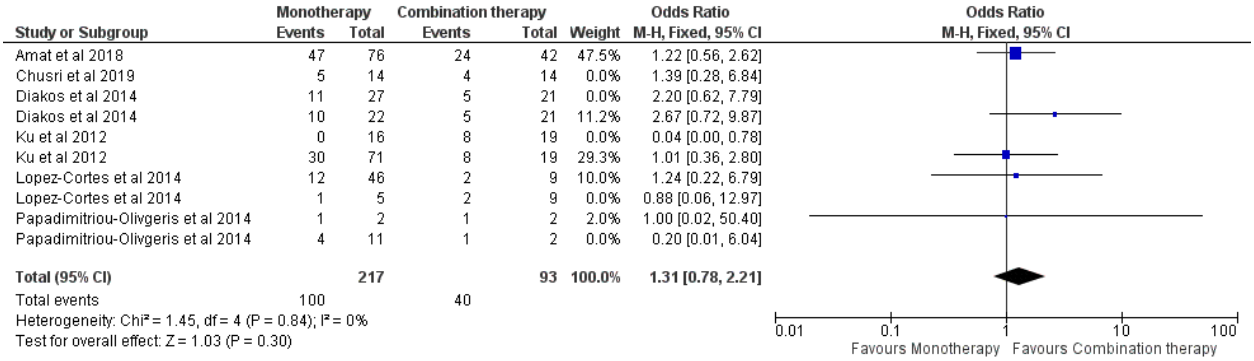


Figure S2.6. Subgroup analysis for 30-day mortality with the tigecycline monotherapy only: monotherapy versus combination

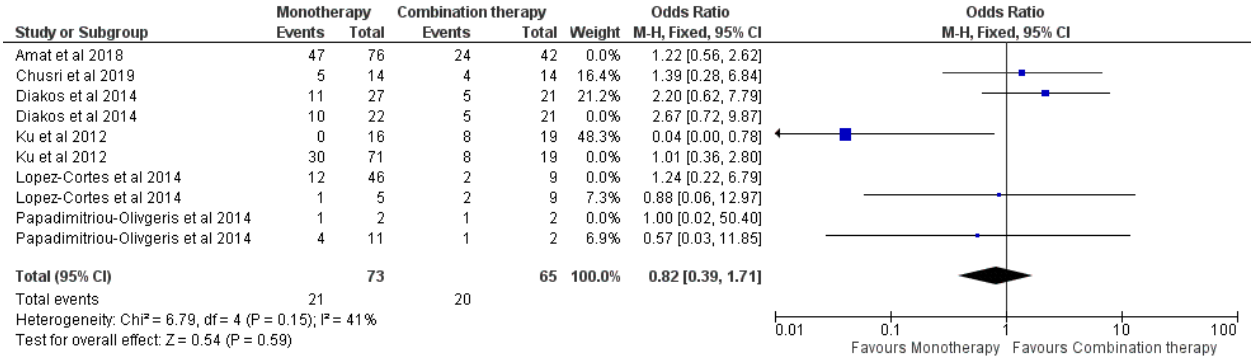


Figure S2.7. Subgroup analysis for 30-day mortality, excluding 3-month mortality: monotherapy versus combination

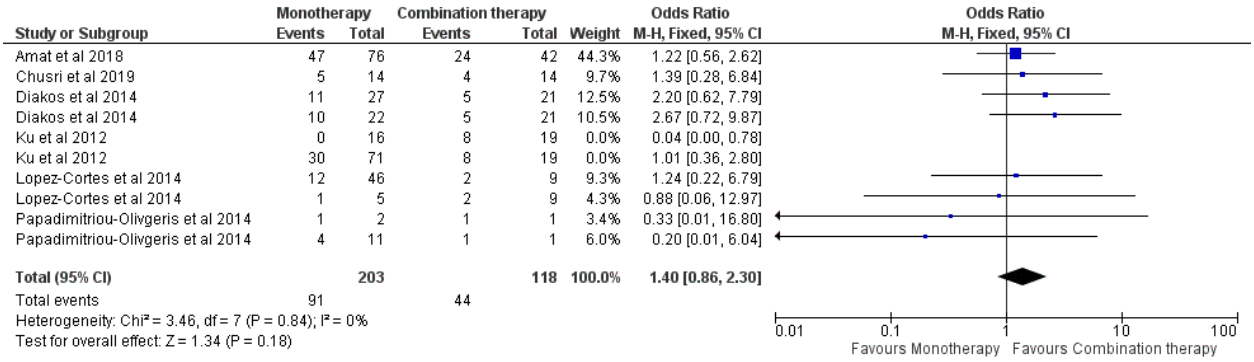


Figure S2.8. Subgroup analysis for in-hospital mortality with the colistin monotherapy only: monotherapy versus combination

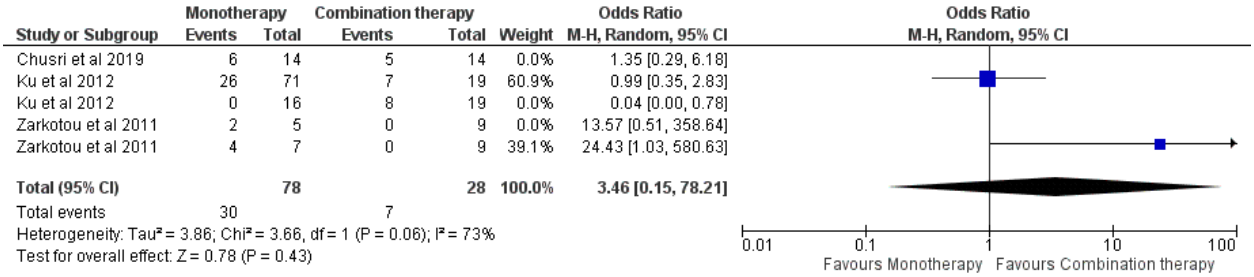


Figure S2.9. Subgroup analysis for in-hospital mortality with the tigecycline monotherapy only: monotherapy versus combination

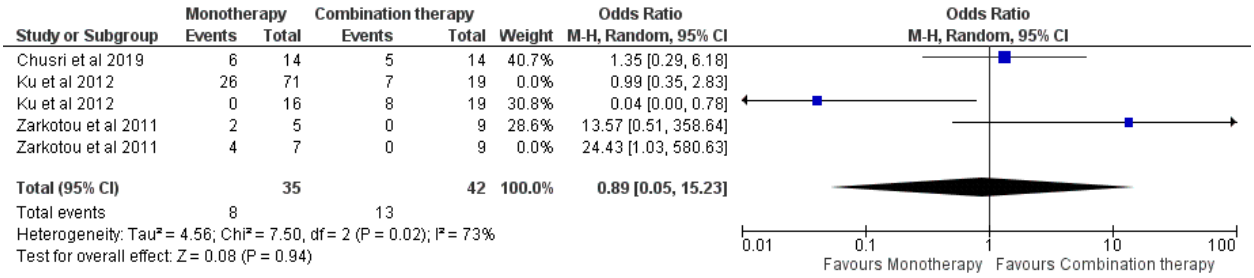


Figure S2.10. Subgroup analysis for in-hospital mortality, excluding infection-caused mortality: monotherapy versus combination

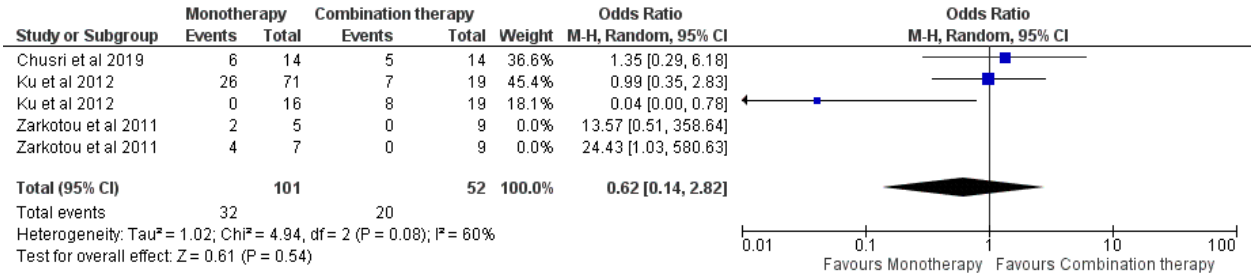


Figure S2.11. Subgroup analysis for in-hospital mortality, excluding ICU mortality: colistin versus tigecycline combinations