

Part1: Mortality-related risk factors of CRE infections

1. Search strategy for Embase

- #1 'carbapenem-resistant enterobacteriaceae'/exp (3570)
- #2 'carbapenemase-producing enterobacteriaceae':ab,ti,kw OR 'carbapenem resistant klebsiella pneumoniae':ab,ti,kw OR 'carbapenem resistant escherichia coli':ab,ti,kw (2562)
- #3 #1 OR #2 (5189)
- #4 'mortality'/exp (1243038)
- #5 'mortalities':ab,ti,kw OR 'case fatality rate':ab,ti,kw OR 'case fatality rates':ab,ti,kw OR 'rate, case fatality':ab,ti,kw OR 'rates, case fatality':ab,ti,kw OR 'cfr case fatality rate':ab,ti,kw OR 'crude death rate':ab,ti,kw OR 'crude death rates':ab,ti,kw OR 'death rate, crude':ab,ti,kw OR 'rate, crude death':ab,ti,kw OR 'crude mortality rate':ab,ti,kw OR 'crude mortality rates':ab,ti,kw OR 'mortality rate, crude':ab,ti,kw OR 'rate, crude mortality':ab,ti,kw OR 'death rate':ab,ti,kw OR 'death rates':ab,ti,kw OR 'rate, death':ab,ti,kw OR 'mortality rate':ab,ti,kw OR 'mortality rates':ab,ti,kw OR 'rate, mortality':ab,ti,kw OR 'mortality, excess':ab,ti,kw OR 'excess mortality':ab,ti,kw OR 'excess mortalities':ab,ti,kw OR 'decline, mortality':ab,ti,kw OR 'mortality declines':ab,ti,kw OR 'mortality decline':ab,ti,kw OR 'mortality determinants':ab,ti,kw OR 'determinants, mortality':ab,ti,kw OR 'determinant, mortality':ab,ti,kw OR 'mortality determinant':ab,ti,kw OR 'mortality, differential':ab,ti,kw OR 'differential mortality':ab,ti,kw OR 'differential mortalities':ab,ti,kw OR 'age-specific death rate':ab,ti,kw OR 'age-specific death rates':ab,ti,kw OR 'death rate, age-specific':ab,ti,kw OR 'rate, age-specific death':ab,ti,kw OR 'age specific death rate':ab,ti,kw (576929)
- #6 #4 OR #5 (1425807)
- #7 'risk factor'/exp (1181016)
- #8 'factor, risk':ab,ti,kw OR 'risk factor':ab,ti,kw OR 'social risk factors':ab,ti,kw OR 'factor, social risk':ab,ti,kw OR 'factors, social risk':ab,ti,kw OR 'risk factor, social':ab,ti,kw OR 'risk factors, social':ab,ti,kw OR 'social risk factor':ab,ti,kw OR 'health correlates':ab,ti,kw OR 'correlates, health':ab,ti,kw OR 'population at risk':ab,ti,kw OR 'populations at risk':ab,ti,kw OR 'risk scores':ab,ti,kw OR 'risk score':ab,ti,kw OR 'score, risk':ab,ti,kw OR 'risk factor scores':ab,ti,kw OR 'risk factor score':ab,ti,kw OR 'score, risk factor':ab,ti,kw (414972)
- #9 #7 OR #8 (1364628)
- #10 #3 AND #6 AND #9 (279)

2. Search strategy for PubMed

- #1 "Carbapenem-Resistant Enterobacteriaceae"[Mesh] (1,098)
- #2 Carbapenemase-Producing Enterobacteriaceae[Title/Abstract] (1001)
- #3 #1 OR #2 (1825)
- #4 "Mortality"[Mesh] (413285)
- #5 (Mortalities[Title/Abstract]) OR (Case Fatality Rate[Title/Abstract]) OR (Case Fatality Rates[Title/Abstract]) OR (Rate, Case Fatality[Title/Abstract]) OR (Rates, Case Fatality[Title/Abstract]) OR (CFR Case Fatality Rate[Title/Abstract]) OR (Crude Death Rate[Title/Abstract]) OR (Crude Death Rates[Title/Abstract]) OR (Death Rate, Crude[Title/Abstract]) OR (Rate, Crude Death[Title/Abstract]) OR (Crude Mortality Rate[Title/Abstract]) OR (Crude Mortality Rates[Title/Abstract]) OR (Mortality Rate, Crude[Title/Abstract]) OR (Rate, Crude Mortality[Title/Abstract]) OR (Death Rate[Title/Abstract]) OR (Death Rates[Title/Abstract]) OR (Rate, Death[Title/Abstract]) OR (Mortality Rate[Title/Abstract]) OR (Mortality Rates[Title/Abstract]) OR (Rate, Mortality[Title/Abstract]) OR (Mortality, Excess[Title/Abstract]) OR (Excess Mortality[Title/Abstract]) OR (Excess Mortalities[Title/Abstract]) OR (Decline, Mortality[Title/Abstract]) OR (Mortality Declines[Title/Abstract])

OR (Mortality Decline[Title/Abstract]) OR (Mortality Determinants[Title/Abstract]) OR (Determinants, Mortality[Title/Abstract]) OR (Determinant, Mortality[Title/Abstract]) OR (Mortality Determinant[Title/Abstract]) OR (Mortality, Differential[Title/Abstract]) OR (Differential Mortality[Title/Abstract]) OR (Differential Mortalities[Title/Abstract]) OR (Age-Specific Death Rate[Title/Abstract]) OR (Age-Specific Death Rates[Title/Abstract]) OR (Death Rate, Age-Specific[Title/Abstract]) OR (Rate, Age-Specific Death[Title/Abstract]) OR (Age Specific Death Rate[Title/Abstract]) (523090)

#6 #4 OR #5 (829593)

#7 "Risk Factors"[Mesh] (908930)

#8 (Factor, Risk[Title/Abstract]) OR (Risk Factor[Title/Abstract]) OR (Social Risk Factors[Title/Abstract]) OR (Factor, Social Risk[Title/Abstract]) OR (Factors, Social Risk[Title/Abstract]) OR (Risk Factor, Social[Title/Abstract]) OR (Risk Factors, Social[Title/Abstract]) OR (Social Risk Factor[Title/Abstract]) OR (Health Correlates[Title/Abstract]) OR (Correlates, Health[Title/Abstract]) OR (Population at Risk[Title/Abstract]) OR (Populations at Risk[Title/Abstract]) OR (Risk Scores[Title/Abstract]) OR (Risk Score[Title/Abstract]) OR (Score, Risk[Title/Abstract]) OR (Risk Factor Scores[Title/Abstract]) OR (Risk Factor Score[Title/Abstract]) OR (Score, Risk Factor[Title/Abstract]) (272301)

#9 #7 OR #8 (1062609)

#10 #3 OR #6 OR #9 (54)

#11 "Carbapenems"[Mesh] (13245)

#12 (Antibiotics, Carbapenem[Title/Abstract]) OR (Carbapenem Antibiotics[Title/Abstract]) OR (Carbapenem[Title/Abstract]) (11573)

#13 #11 OR #12

#14 "Drug Resistance"[Mesh] (357992)

#15 Resistance, Drug[Title/Abstract] (310)

#16 #14 OR #15

#17 "Klebsiella pneumoniae"[Mesh] (15992)

#18 (((Hyalococcus pneumoniae[Title/Abstract]) OR (Klebsiella pneumoniae aerogenes[Title/Abstract])) OR (Bacillus pneumoniae[Title/Abstract])) OR (Bacterium pneumoniae crouposae[Title/Abstract])) OR (Klebsiella rhinoscleromatis[Title/Abstract]) (25002)

#19 #17 OR #18 (28495)

#20 #13 AND #16 AND #19 AND #6 AND #9 (99)

#21 "Escherichia coli"[Mesh] (292398)

#22 (Enterococcus coli[Title/Abstract]) OR (Bacterium coli commune[Title/Abstract]) OR (E coli[Title/Abstract]) OR (Bacillus coli[Title/Abstract]) OR (Bacterium coli[Title/Abstract]) OR (Alkalescens-Dispar Group[Title/Abstract]) OR (Enteroinvasive Escherichia coli[Title/Abstract]) OR (Enteroinvasive E. coli[Title/Abstract]) OR (Diffusely Adherent Escherichia coli[Title/Abstract]) OR (Diffusely Adherent E. coli[Title/Abstract]) OR (Enteroaggregative Escherichia coli[Title/Abstract]) OR (EAggEC[Title/Abstract]) OR (Enteroaggregative E. coli[Title/Abstract]) (149884)

#23 #21 OR #22 (340975)

#24 #23 AND #16 AND #19 AND #6 AND #9 (19)

#25 #10 OR #20 OR #24 (152)

3. Risk of bias for case-control studies

Study	Selection				Comparability	Exposure			Total Score
	Definition of the case	Representativeness of the cases	Selection of controls	Definition of controls		Ascertainment of exposure	Method of ascertainment	Non-Response rate	
Balkan 2014	1	1	0	1	1	1	1	1	7
Zuo 2020	0	1	0	1	2	1	1	0	6
Zhang 2021	1	1	0	1	2	1	1	0	7
Tian 2020	1	1	0	1	2	1	1	0	7
Mora-Guzmán 2021	1	1	0	1	1	1	1	0	6
Li 2020	1	1	0	1	2	1	1	0	7

4. Risk of bias for cohort studies

Study	Selection				Comparability	Exposure			Total Score
	Exposed cohort	Non exposed cohort	Ascertainment of exposure	Outcome of interest		Assessment of outcome	Length of follow-up	Adequacy of follow up	
Tuon 2017	0	1	1	1	2	1	0	0	6
Capone 2013	0	1	1	1	2	1	0	0	6
Chang 2014	0	1	1	1	2	1	0	0	6
Su 2018	1	1	1	1	2	1	0	0	7
Shen 2020	1	1	1	1	2	1	0	0	7
Fang 2021	1	1	1	1	1	1	0	0	6
Lin 2019	1	1	1	1	2	1	0	0	7
Zhou 2021	1	1	1	1	2	1	1	0	8
Falcone 2016	0	1	1	1	1	1	0	0	5
Bar-Yoseph 2019	0	1	1	1	1	1	1	0	6
Andrey 2020	1	1	1	1	2	1	0	0	7
Di Domenico 2020	0	1	1	1	1	1	0	0	5
Chotiprasitsakul 2018	1	1	1	1	2	1	0	0	7
Wang 2019	1	1	1	1	2	1	0	0	7
Liu 2021	1	1	1	1	2	1	0	0	7
Palacios-Baena 2016	1	1	1	1	2	1	1	0	8
Seo 2020	1	1	1	1	2	1	0	0	7
Li 2019	1	1	1	1	2	1	0	0	7
Chen 2021	1	1	1	1	2	1	0	0	7
Lim 2020	1	1	1	1	2	1	0	0	7
Rivera-Espinar 2020	0	1	1	1	2	1	0	0	6
Brescini 2019	1	1	1	1	2	1	0	0	7
Lin 2015	1	1	1	1	2	1	0	0	7
Cristina 2018	1	1	1	1	2	1	0	0	7
Geng 2018	0	1	1	1	2	1	0	0	6
Tumbarello 2015	1	1	1	1	2	1	0	0	7
Lee 2020	1	1	1	1	2	0	0	0	6

Part2: Antimicrobial regimens of CRE infections

Search strategy for PubMed

- #1 "Carbapenem-Resistant Enterobacteriaceae"[Mesh] (1134)
- #2 (Carbapenemase-Producing Enterobacteriaceae[Title/Abstract]) OR (carbapenem resistant Klebsiella pneumoniae[Title/Abstract]) OR (carbapenem resistant Escherichia coli[Title/Abstract]) (2138)
- #3 #1 OR #2 (2801)
- #4 "Anti-Bacterial Agents"[Mesh] (415523)
- #5 (Agents, Anti-Bacterial[Title/Abstract]) OR (Anti Bacterial Agents[Title/Abstract]) OR (Antibacterial Agents[Title/Abstract]) OR (Agents, Antibacterial[Title/Abstract]) OR (Antibacterial Agent[Title/Abstract]) OR (Agent, Antibacterial[Title/Abstract]) OR (Anti-Bacterial Compounds[Title/Abstract]) OR (Anti Bacterial Compounds[Title/Abstract]) OR (Compounds, Anti-Bacterial[Title/Abstract]) OR (Anti-Bacterial Agent[Title/Abstract]) OR (Agent, Anti-Bacterial[Title/Abstract]) OR (Anti Bacterial Agent[Title/Abstract]) OR (Anti-Bacterial Compound[Title/Abstract]) OR (Anti Bacterial Compound[Title/Abstract]) OR (Compound, Anti-Bacterial[Title/Abstract]) OR (Bacteriocidal Agents[Title/Abstract]) OR (Agents, Bacteriocidal[Title/Abstract]) OR (Bacteriocidal Agent[Title/Abstract]) OR (Agent, Bacteriocidal[Title/Abstract]) OR (Bacteriocide[Title/Abstract]) OR (Bacteriocides[Title/Abstract]) OR (Anti-Mycobacterial Agents[Title/Abstract]) OR (Agents, Anti-Mycobacterial[Title/Abstract]) OR (Anti Mycobacterial Agents[Title/Abstract]) OR (Anti-Mycobacterial Agent[Title/Abstract]) OR (Agent, Anti-Mycobacterial[Title/Abstract]) OR (Anti Mycobacterial Agent[Title/Abstract]) OR (Antimycobacterial Agent[Title/Abstract]) OR (Agent, Antimycobacterial[Title/Abstract]) OR (Antimycobacterial Agents[Title/Abstract]) OR (Agents, Antimycobacterial[Title/Abstract]) OR (Antibiotics[Title/Abstract]) OR (Antibiotic[Title/Abstract]) (400711)
- #6 #4 OR #5 (629956)
- #7 "Therapeutics"[Mesh] (4932005)
- #8 (Therapeutic[Title/Abstract]) OR (Therapy[Title/Abstract]) OR (Therapies[Title/Abstract]) OR (Treatment[Title/Abstract]) OR (Treatments[Title/Abstract]) (6762326)
- #9 #7 OR #8 (9709162)
- #10 "Infections"[Mesh] (2887102)
- #11 (Infection and Infestation[Title/Abstract]) OR (Infestation and Infection[Title/Abstract]) OR (Infections and Infestations[Title/Abstract]) OR (Infestations and Infections[Title/Abstract]) OR (Infection[Title/Abstract]) (1255001)
- #12 #10 OR #11 (3340695)
- #13 #3 AND #6 AND #9 AND #12 NOT (review[Publication Type]) (632)