CQ11-5-1 敗血症性 AKI に対して早期の腎代替療法を行うか？　Stage 2 vs Stage3 または古典的絶対適応

CQ11-5-2 敗血症性 AKI に対して早期の腎代替療法を行うか？　Stage 3 vs 古典的絶対適応

検索データベース

■MEDLINE (PubMed)
■CENTRAL
■医学中央雑誌
■WHO-ICTRP
■ClinicalTrials.gov

検索式とヒット数

PubMed search strategy（検索日　2019 年 5 月 10 日）

#1	"Critical Care"[mesh:noexp] OR "Intensive Care Units"[mesh:noexp] OR "Critical Illness"[mesh:noexp]	105206
#2	"burn units"[mesh:noexp] OR "coronary care units"[mesh:noexp] OR "Respiratory Care Units"[mesh:noexp] OR "Respiration, Artificial"[mesh:noexp] OR "Shock"[mesh]	123096
#3	"Critically ill"[tiab] OR "critical illness"[tiab] OR seriously ill patient*[tiab] OR intensive care*[tiab] OR intensive therapy unit*[tiab] OR close attention unit*[tiab] OR ("combined medical"[tiab] AND surgical ICU*[tiab]) OR critical care*[tiab] OR ICU*[tiab] OR intensive treatment unit*[tiab] OR respiratory care unit*[tiab] OR special care unit*[tiab]	192844
#4	burn unit*[tiab] OR coronary care unit*[tiab] OR stroke unit*[tiab] OR high care unit*[tiab] OR high dependency unit*[tiab] OR artificial respirat*[tiab] OR controlled respirat*[tiab] OR controlled ventilat*[tiab] OR mechanical respirat*[tiab] OR mechanical* ventilat*[tiab] OR artificial ventilat*[tiab] OR shock*[tiab] OR cardiovascular collaps*[tiab] OR circulatory collaps*[tiab] OR "circulatory failure"[tiab]	241639
#5	"Sepsis"[mesh] OR "Sepsis-Associated Encephalopathy"[mesh:noexp] OR "Systemic Inflammatory Response Syndrome"[mesh:noexp] OR "Vasoplegia"[mesh:noexp] OR (bacillemia*[tiab] OR bacillemia*[ot]) OR (bacillaemia*[tiab] OR bacillaemia*[ot]) OR (bacter* shock[tiab] OR bacter* shock[ot]) OR (bacteremia*[tiab] OR bacteremia*[ot]) OR (bacteraemia*[tiab] OR bacteraemia*[ot]) OR (("blood"[tiab] OR "blood"[ot]) AND (poison*[tiab] OR poison*[ot])) OR (candidemia*[tiab] OR candidemia*[ot]) OR (candidaemia*[tiab] OR candidaemia*[ot]) OR (endotoxemia*[tiab] OR endotoxemia*[ot]) OR (endotoxaemia*[tiab] OR endotoxaemia*[ot]) OR (endotoxi* shock[tiab] OR endotoxi* shock[ot]) OR (fungemia*[tiab] OR fungemia*[ot]) OR (fungaemia*[tiab] OR fungaemia*[ot]) OR (parasitemia*[tiab] OR parasitemia*[ot]) OR (parasitaemia*[tiab] OR parasitaemia*[ot]) OR ((pyemia*[tiab] OR pyemia*[ot]) OR (pyohemia*[tiab] OR pyohemia*[ot])) OR ((pyaemia*[tiab] OR pyaemia*[ot]) OR	250088

	(pyohemia*[tiab] OR pyohemia*[ot])) OR ("sepsis"[tiab] OR "sepsis"[ot]) OR ("septic"[tiab] OR "septic"[ot]) OR (septicemia*[tiab] OR septicemia*[ot]) OR (septicaemia*[tiab] OR septicaemia*[ot]) OR ("SIRS"[tiab] OR "SIRS"[ot]) OR (systemic inflammatory response syndrome*[tiab] OR systemic inflammatory response syndrome*[ot]) OR ("toxic shock"[tiab] OR "toxic shock"[ot]) OR (vasoplegia*[tiab] OR vasoplegia*[ot]) OR (vasoplaegia*[tiab] OR vasoplaegia*[ot]) OR (viremia*[tiab] OR viremia*[ot]) OR (viraemia*[tiab] OR viraemia*[ot])	
#6	acute kidney[tw] OR acute renal[tw] OR acute nephr*[tw] OR acute glomer*[tw] OR acute dialysis[tw] OR acute tubul*[tw] OR "Acute Kidney Injury"[mh] OR kidney injur*[tiab] OR renal injur*[tiab] OR "Kidney Diseases/chemically induced"[mh] OR tubular injury[tiab] OR tubular necrosis*[tiab] OR tubular damage*[tiab] OR tubule damage*[tiab] OR nephrotox*[tiab] OR "Nephritis, Interstitial"[mh:noexp] OR tubulointerstitial nephritis[tiab] OR interstitial nephritis[tiab] OR kidney ischemi*[tiab] OR kidney ischaemi*[tiab] OR renal ischemi*[tiab] OR renal ischaemi*[tiab] OR induced kidney[tiab] OR induced renal [tiab] OR hemolytic uremi*[tiab] OR haemolytic uraemi*[tiab] OR "Hemolytic-Uremic Syndrome"[majr:noexp] OR aki[tiab] OR oliguri*[tw] OR anuri*[tw] OR anti-glomerular[tw] OR antiglomerular[tw] OR "Kidney Cortex Necrosis"[mh: noexp] OR pre-renal[tiab] OR prerenal[tiab] OR anti-gbm[tiab] OR obstructed kidney*[tiab] OR renal obstruction[tiab] OR obstructive nephropathy[tiab] OR obstructive uropathy[tiab] OR hepatorenal syndrome[tw] OR "Hemorrhagic Fever with Renal Syndrome"[majr:noexp] OR thrombotic thrombocytopeni*[tiab] OR thrombotic microangiopathy[tiab] OR "Acidosis/chemically induced"[mh] OR renal hypoperfusion[tiab] OR (worsening[tiab] AND renal[tiab]) OR improved renal function[tiab] OR (impair*[tiab] AND renal function[tiab]) OR azotemi*[tw] OR azotaemi*[tw] OR (renal[tiab] AND thrombosis[tiab]) OR (("Reperfusion Injury"[mh:noexp] OR ischemic injury[tiab] OR ischemia injury[tiab] OR ischaemic injury[tiab] OR ischaemia injury[tiab] OR ischemic reperfusion[tiab] OR ischemia reperfusion[tiab] OR ischaemic reperfusion[tiab] OR ischaemia reperfusion[tiab] OR critical care[tw] OR critically ill[tw] OR (critical*[tw] AND illness[tw]) OR sepsis[tw] or septic[tw] OR intensive care[tw] OR icu[tiab] OR tubular cell*[tiab] OR rhabdomyolysis[tw] OR thrombocytopeni*[tiab] OR lifethreatening[tw] OR vasculit*[tw] OR polyarteritis[tw] OR cardiogenic shock[tiab] OR multiorgan dysfunction[tw] OR multi-organ dysfunction[tw] OR multiple organ dysfunction[tw] OR multiple organ failure[tw] OR multiorgan failure[tw] OR multi-organ failure[tw] OR polyangiitis[tw] OR (wegener*[tw] AND granulomatosis[tw]) OR "Blood Urea Nitrogen"[mh:noexp]) AND (kidney[tw] OR renal[tw] OR dialysis[tw] OR uremi*[tiab] OR uraemi*[tiab] OR dehydrat*[tw] OR creatinin*[tw])) OR (nephropath*[tw] AND (contrast medi*[tw] OR contrast	270963

	induced[tw] OR contrast agent*[tw] OR radiocontrast*[tw] OR iodinated[tw] OR crystal*[tw] OR cast[tw])) OR ((glomerulonephritis[tw] OR nephrit*[tiab]) AND (crescentic[tw] OR anca*[tiab] OR rapidly progressive[tiab] OR acute[tiab])) OR (("Kidney Diseases"[mh:noexp] OR renal insufficienc*[tw] OR renal failure[tw] OR renal function[tiab] OR renal impairment[tiab] OR glomerular filtration rate[tiab] OR ischemia-reperfusion injury[tiab]) AND ("Cardiovascular Surgical Procedures"[majr] OR "Cardiovascular Diseases"[mh:noexp] OR "Cardiovascular System/surgery"[majr] OR cardiac surg*[tw] OR (cardiopulmonary[tiab]) OR "Ischemia"[mh:noexp] OR "diagnostic imaging"[majr] OR "Contrast Media"[majr: noexp] OR "chemically induced"[sh] OR revers*[tiab] OR microangiopath*[tiab] OR cirrhosis[ti] OR "Substance-Related Disorders"[mh] OR "Neurologic Manifestations"[mh] OR preoperative*[tiab] OR pre-operative*[tiab] OR postoperative*[tiab] OR post-operative*[tiab])) OR ((injury[tw] OR ischemi*[tw] OR ischaemi*[tw] OR reperfusion[tw] OR contrast medi*[tw]) AND (renal tubul* [tiab] OR tubular[tiab]))	
#7	#1 OR #2 OR #3 OR #4 OR #5 OR #6	885715
#8	"renal replacement therapy"[mesh:noexp] OR "renal dialysis"[mesh:noexp] OR "hemodiafiltration"[mesh:noexp] OR "peritoneal dialysis"[mesh:noexp]	106127
#9	hemofiltrat*[tiab] OR hemodiafiltrat*[tiab] OR hemodialysis[tiab] OR "hemo-filtration"[tiab] OR "hemo-filtrate"[tiab] OR "hemo-diafiltration"[tiab] OR "hemo-diafiltrate"[tiab] OR "hemo-dialysis"[tiab] OR "hemo-dialysate"[tiab] OR haemofiltrat*[tiab] OR haemodiafiltrat*[tiab] OR haemodialysis[tiab] OR "haemo-filtration"[tiab] OR "haemo-filtrate"[tiab] OR "haemo-diafiltration"[tiab] OR "haemo-diafiltrate"[tiab] OR "haemo-dialysis"[tiab] OR "haemo-dialysate"[tiab]	77303
#10	"sustained low efficiency dialysis"[tiab]	117
#11	"extended daily dialysis"[tiab]	48
#12	"RRT"[tiab] OR "CRRT"[tiab] OR "CVVH"[tiab] OR "CVVHDF"[tiab] OR "CVVHD"[tiab] OR "CHDF"[tiab] OR "CHF"[tiab] OR "CHD"[tiab] OR "IRRT"[tiab] OR "IHD"[tiab] OR "IHF"[tiab] OR "IHDF"[tiab] OR "SLED"[tiab] OR "EDD"[tiab]	50765
#13	#8 OR #9 OR #10 OR #11 OR #12	174640
#14	time factors[mesh:noexp]	1150950
#15	timing[tiab] OR time[tiab] OR earl*[tiab] OR accelerat*[tiab] OR start*[tiab] OR initiat*[tiab] OR delay*[tiab] OR late[tiab] OR emergen*[tiab]	5754802
#16	#14 OR #15	6415904
#17	randomized controlled trial [pt]	482505
#18	controlled clinical trial [pt]	570723
#19	randomized [tiab]	478646
#20	placebo [tiab]	203091
#21	clinical trials as topic [mesh: noexp]	186956
#22	randomly [tiab]	311223

#23	trial [ti]	198322
#24	#17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23	1223448
#25	animals [mh] NOT humans [mh]	4579528
#26	#24 NOT #25	1125461
#27	#7 AND #13 AND #16 AND 26	1292

CENTRAL search strategy（検索日　2019 年 5 月 2 日）

#1	MeSH descriptor: [Critical Care] this term only	1612
#2	MeSH descriptor: [Critical Illness] this term only	1859
#3	MeSH descriptor: [Burn Units] this term only	45
#4	MeSH descriptor: [Coronary Care Units] this term only	143
#5	MeSH descriptor: [Respiratory Care Units] this term only	13
#6	MeSH descriptor: [Respiration, Artificial] this term only	3169
#7	MeSH descriptor: [Shock] explode all trees	1964
#8	("Critically ill" OR "critical illness" OR "seriously ill patient" OR "seriously ill patients" OR "intensive care" OR "intensive therapy unit" OR "intensive therapy units" OR "close attention unit" OR "close attention units" OR ("combined medical" AND "surgical ICU") OR "critical care" OR ICU OR ICUs OR "intensive treatment unit" OR "intensive treatment units" OR "respiratory care unit" OR "respiratory care units" OR "special care unit" OR "special care units"):ti,ab,kw	28498
#9	("burn unit" OR "burn units" OR "coronary care unit" OR "coronary care units" OR "stroke unit" OR "stroke units" OR "high care unit" OR "high care units" OR "high dependency unit" OR "high dependency units" OR (artificial AND respirat*) OR (controlled respirat*) OR (controlled AND ventilat*) OR "mechanical respiration" OR (mechanical AND ventilat*) OR (artificial AND ventilat*) OR shock* OR (cardiovascular AND collaps*) OR (circulatory AND collaps*) OR "circulatory failure"):ti,ab,kw	55308
#10	MeSH descriptor: [Acute Kidney Injury] explode all trees	1214
#11	("acute kidney failure" OR "acute renal failure"):ti,ab,kw	2958
#12	((acute AND kidney AND injur*) or (acute and renal and injur*)):ti,ab,kw	3477
#13	((acute AND kidney and insufficie*) OR (acute and renal and insufficie*)):ti,ab,kw	950
#14	("acute tubular necrosis"):ti,ab,kw	118
#15	("ARI" OR "AKI" OR "ARF" OR "AKF" OR "ATN"):ti,ab,kw	2267
#16	#1 #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15	77901
#17	MeSH descriptor: [Renal Replacement Therapy] this term only	177
#18	MeSH descriptor: [Renal Dialysis] this term only	4037
#19	MeSH descriptor: [Hemodiafiltration] this term only	225
#20	MeSH descriptor: [Peritoneal Dialysis] this term only	467

#21	(hemofiltration OR hemodiafiltraion OR hemodialysis OR haemofiltration OR haemodiafiltraion OR haemodialysis):ti,ab,kw	11221
#22	("sustained low efficiency dialysis"):ti,ab,kw	26
#23	("extended daily dialysis"):ti,ab,kw	15
#24	("RRT" OR "CRRT" OR "CVVH" OR "CVVHDF" OR "CVVHD" OR "CHDF" OR "CHF" OR "CHD" OR "IRRT" OR "IHD" OR "IHF" OR "IHDF" OR "SLED" OR "EDD"):ti,ab,kw	7611
#25	#17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24	19475
#26	#16 AND #25	2087
#27	MeSH descriptor: [Time Factors] this term only	62301
#28	(timing or time or earl* or accelerat* or start* or initiat* or delay* or late or emergen*):ti,ab,kw	531986
#29	#27 or #28	531986
#30	#26 and #29	1142

医学中央雑誌 search strategy（検索日 2019 年 5 月 21 日）

#1	ICU/TH or ICU/TA or 集中治療/TA or 重症患者/TA	104,735
#2	[クリティカルケア]/TH or [クリティカルケア]/TA	10,877
#3	急性腎障害/TH or 急性腎障害/TA or 急性腎傷害/TA or 急性腎不全/TA or 急性尿細管壊死/TA	21,106
#4	#1 or #2 or #3	128,598
#5	血液透析/TH or 血液透析/TA or 血液濾過透析/TH or 血液濾過透析/TA or CHD/TA or CHF/TA or CHDF/TA or IHD/TA or IHF/TA or IHDF/TA or SLED/TA or EDD/TA	176,270
#6	#4 and #5	6,150
#7	ランダム化比較試験/TH or 準ランダム化比較試験/TH or ランダム化/AL or 無作為化/AL or 比較試験/AL or 臨床試験/AL or プラセボ/AL or 対照/AL or	302,634

	コントロール/AL or 臨床研究/AL	
#8	#6 and #7	228

WHO – ICTRP, searched 02 May 2019

Recruitment status: All

Phases: All

Intervention: renal replacement therapy

Records selected:56

ClinicalTrials.gov, searched 02 May 2019

Recruitment: All Studies

Study Results: All Studies

Study Type: Interventional Studies

Interventions: renal replacement therapy

Records selected:164

図 1. PRISMA フローチャート

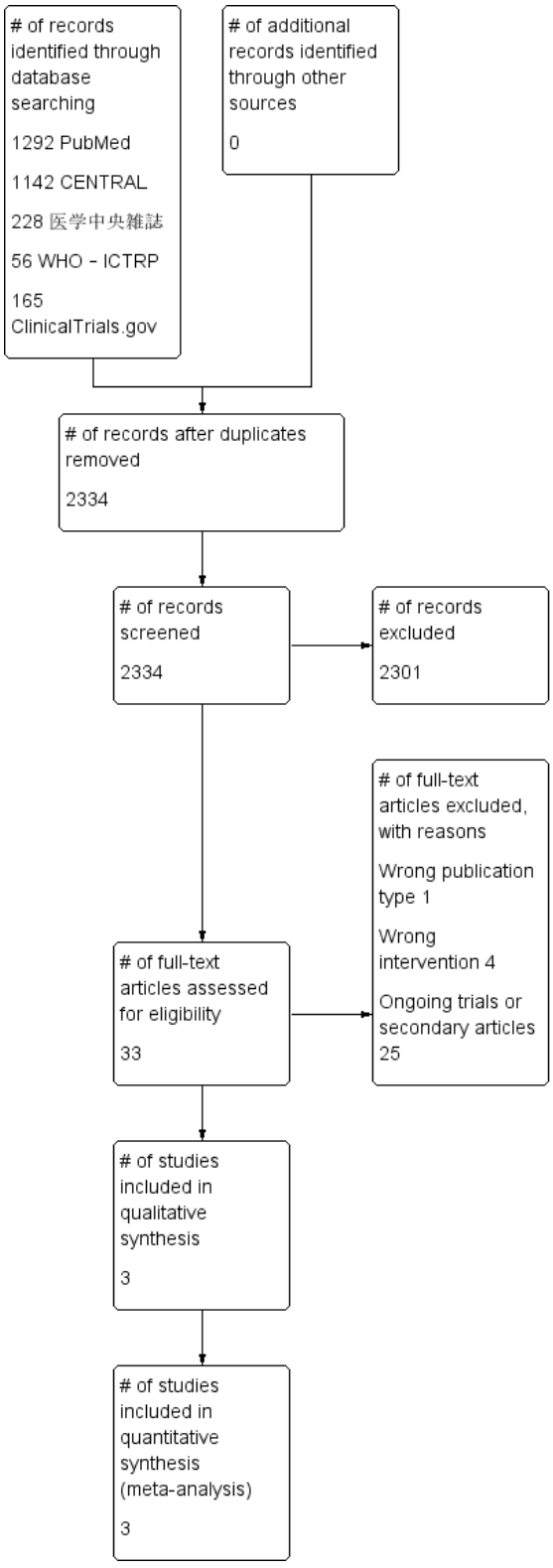
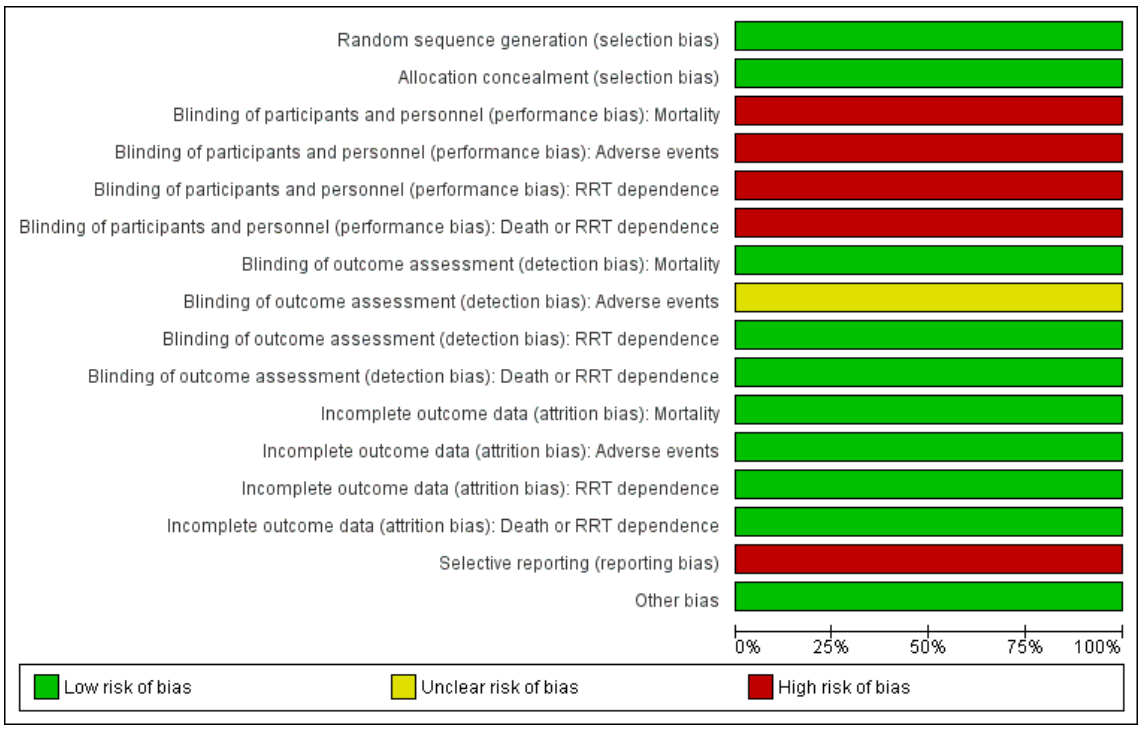


図 2. Risk of Bias graph

Stage 2 vs Stage 3 または古典的絶対適応



Stage 3 vs 古典的絶対適応

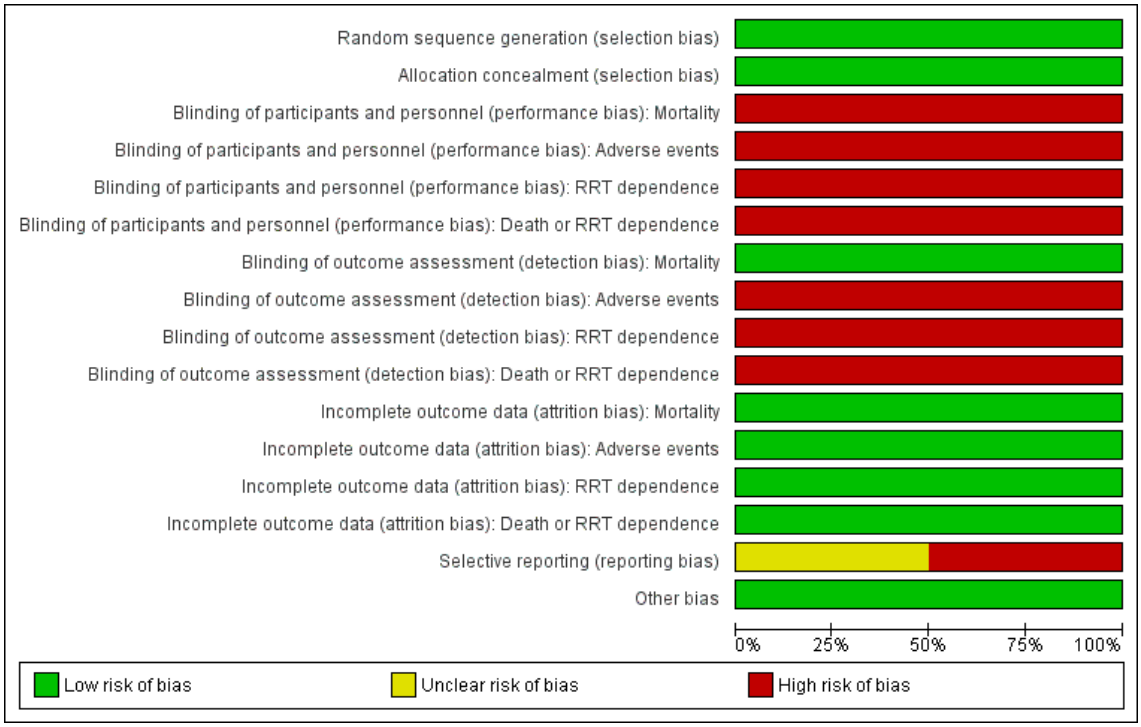
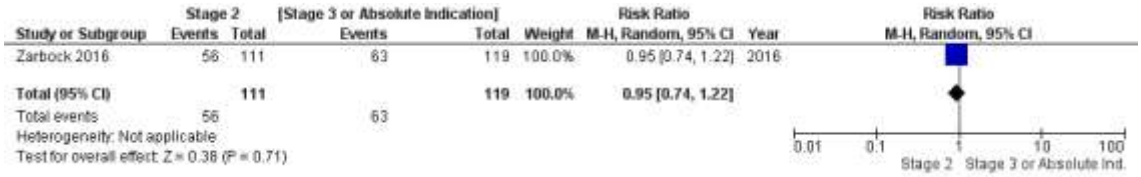


図 3. Forest plot

Stage 2 vs Stage 3 または古典的絶対適応

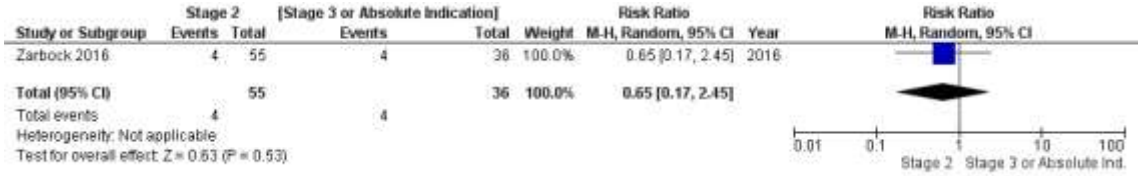
1. 死亡率（1 年以内の最長観察期間）



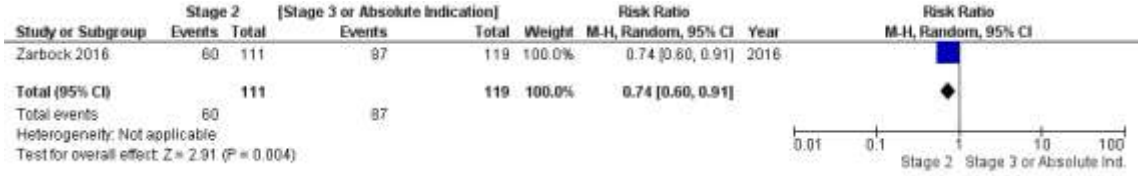
2. 合併症（出血）

   両グループ 0 件の報告

3. 透析依存（最長観察期間）

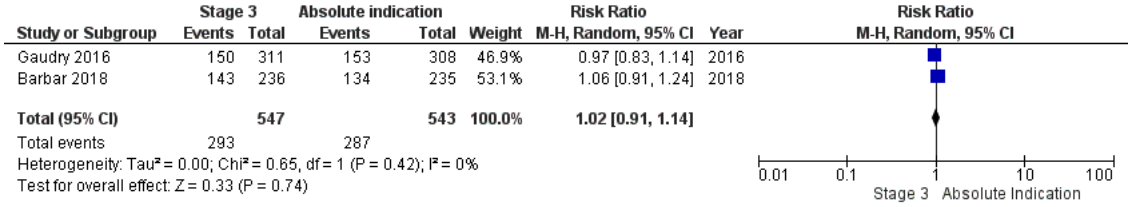


4. 死亡または透析依存（最長観察期間）

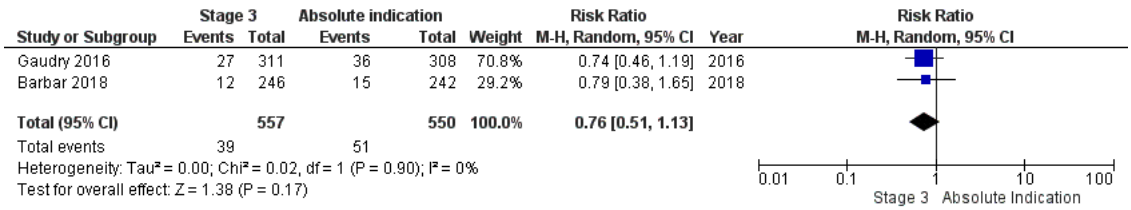


Stage 3 vs 古典的絶対適応

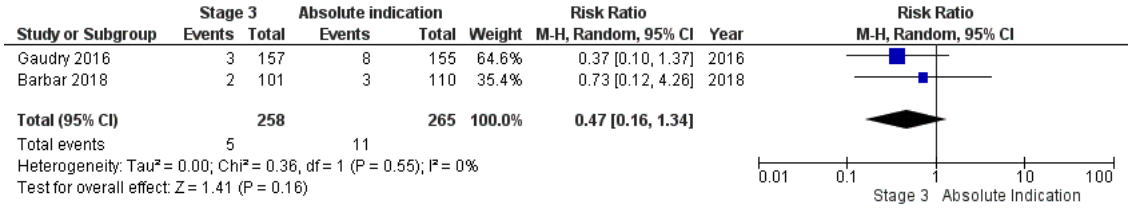
1. 死亡率（1 年以内の最長観察期間）



2. 合併症（出血）



3. 透析依存（最長観察期間）



4. 死亡または透析依存（最長観察期間）

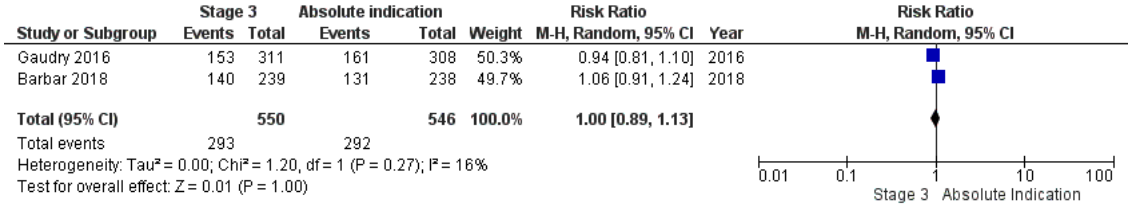
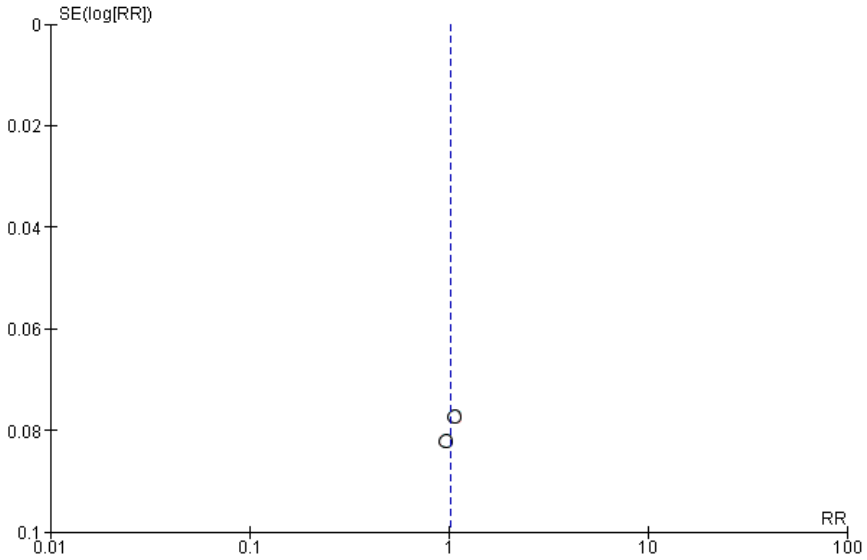


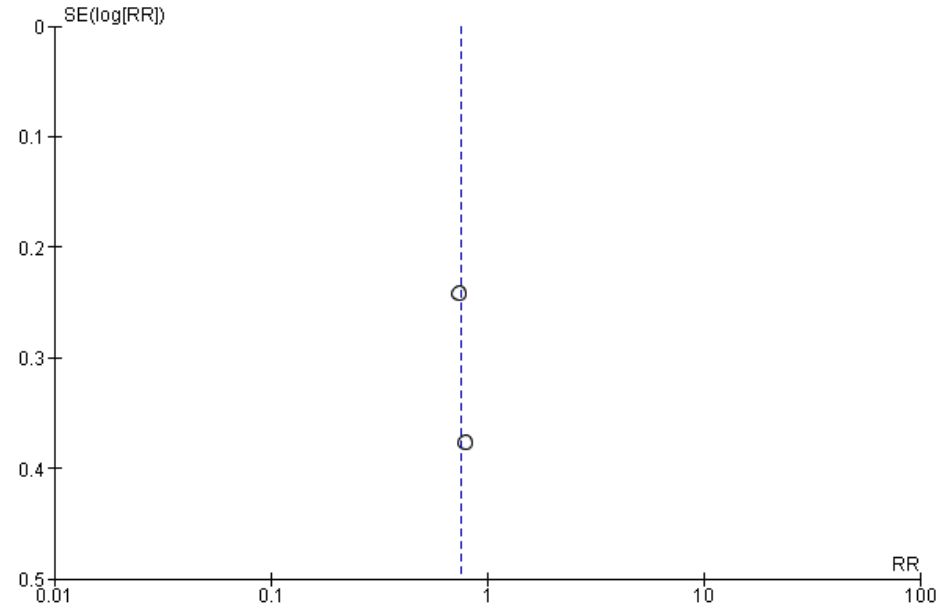
図 4. Funnel plot

Stage 3 vs 古典的絶対適応

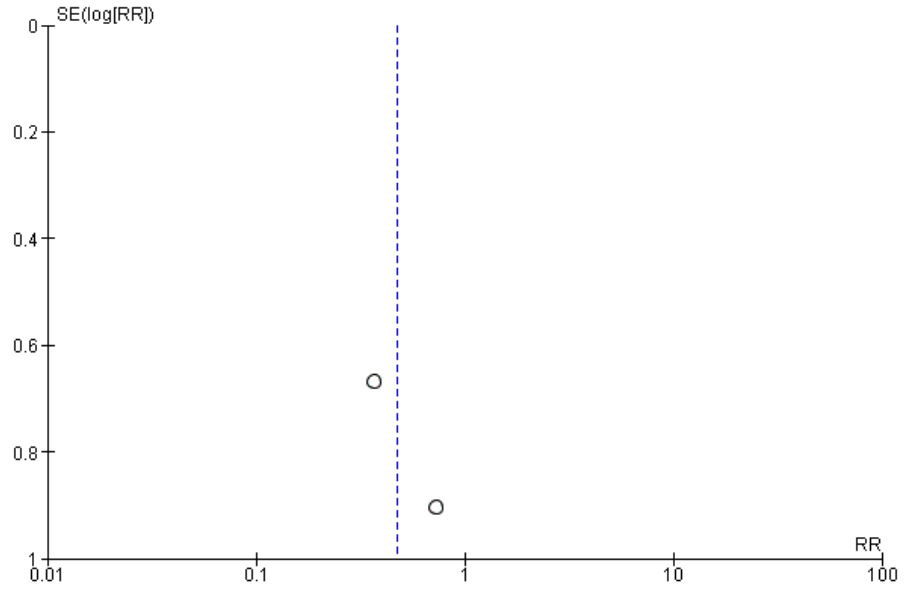
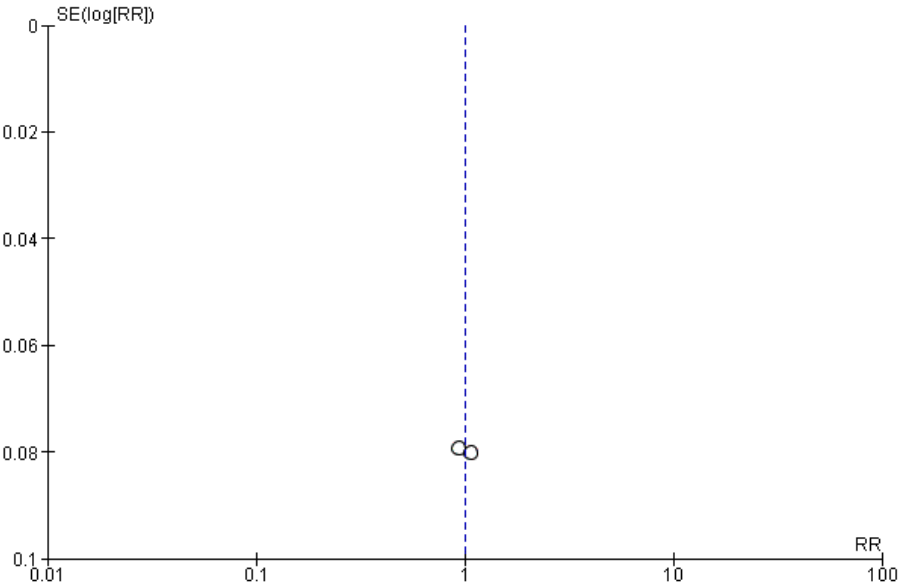
1. 死亡率（1 年以内の最長観察期間）



2. 合併症（出血）



3. 透析依存（最長観察期間）



4. 死亡または透析依存（最長観察期間）