

## CQ11-4 敗血症性ショックに対して PMX-DHP を行うか？

### 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4月30日)

#1	"Sepsis"[mesh]	115901
#2	"Sepsis-Associated Encephalopathy"[mesh:noexp]	55
#3	"Systemic Inflammatory Response Syndrome"[mesh:noexp]	5123
#4	"Vasoplegia"[mesh:noexp]	116
#5	(bacillemia*[tiab] OR bacillemia*[ot]) OR (bacillaemia*[tiab] OR bacillaemia*[ot])	66
#6	(bacter* shock[tiab] OR bacter* shock[ot])	941
#7	(bacteremia*[tiab] OR bacteremia*[ot]) OR (bacteraemia*[tiab] OR bacteraemia*[ot])	28903
#8	(("blood"[tiab] OR "blood"[ot]) AND (poison*[tiab] OR poison*[ot]))	8908
#9	(candidemia*[tiab] OR candidemia*[ot]) OR (candidaemia*[tiab] OR candidaemia*[ot])	2796
#10	(endotoxemia*[tiab] OR endotoxemia*[ot]) OR (endotoxaemia*[tiab] OR endotoxaemia*[ot])	8177
#11	(endotoxi* shock[tiab] OR endotoxi* shock[ot])	339
#12	(fungemia*[tiab] OR fungemia*[ot]) OR (fungaemia*[tiab] OR fungaemia*[ot])	2095
#13	(parasitemia*[tiab] OR parasitemia*[ot]) OR (parasitaemia*[tiab] OR parasitaemia*[ot])	10385
#14	((pyemia*[tiab] OR pyemia*[ot]) OR (pyohemia*[tiab] OR pyohemia*[ot])) OR ((pyaemia*[tiab] OR pyaemia*[ot]) OR (pyohemia*[tiab] OR pyohemia*[ot]))	200
#15	("sepsis"[tiab] OR "sepsis"[ot])	90094
#16	("septic"[tiab] OR "septic"[ot])	50033
#17	(septicemia*[tiab] OR septicemia*[ot]) OR (septicaemia*[tiab] OR septicaemia*[ot])	20269
#18	("SIRS"[tiab] OR "SIRS"[ot])	5108
#19	(systemic inflammatory response syndrome*[tiab] OR systemic inflammatory response syndrome*[ot])	4661
#20	("toxic shock"[tiab] OR "toxic shock"[ot])	4461
#21	(vasoplegia*[tiab] OR vasoplegia*[ot]) OR (vasoplaegia*[tiab] OR vasoplaegia*[ot])	242
#22	(viremia*[tiab] OR viremia*[ot]) OR (viraemia*[tiab] OR viraemia*[ot])	14740

#23	#1 OR #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 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22	249684
#24	"Polymyxin B"[mesh:noexp]	3121
#25	("aerosporin"[tiab] OR "aerosporin"[ot] OR "aerosporin"[nm])	25
#26	(PMX*[tiab] OR PMX*[ot] OR PMX*[nm])	638
#27	(polymyxin*[tiab] OR polymyxin*[ot] OR polymyxin*[nm]) OR "1404-26-8"[rn]	9016
#28	("Poly RX"[tiab] OR "Poly RX"[ot] OR "Poly RX"[nm])	1
#29	#24 OR #25 OR #26 OR #27 OR #28	9338
#30	"Blood Component Removal"[Mesh:noexp] OR "Hemofiltration"[Mesh] OR "Hemoperfusion"[Mesh]	14075
#31	apheres*[tiab] OR apheres*[ot] OR pheres*[tiab] OR pheres*[ot] OR "blood component removal"[tiab] OR ((endotoxin*[tiab] OR endotoxin*[ot]) AND (absorb*[tiab] OR absorb*[ot] OR absorption*[tiab] OR absorption*[ot] OR adsorption*[tiab] OR adsorption*[ot] OR eliminat*[tiab] OR eliminat*[ot] OR remov*[tiab] OR remov*[ot]))	9897
#32	haemadsorption[tiab] OR haemadsorption[ot] OR hemadsorption[tiab] OR hemadsorption[ot] OR "haemo-filtration"[tiab] OR "haemo-filtration"[ot] OR "hemo-filtration"[tiab] OR "hemo-filtration"[ot] OR haemofiltrat*[tiab] OR haemofiltrat*[ot] OR "hemo-filtrate"[tiab] OR "hemo-filtration"[tiab] OR "hemo-filtration"[ot] OR hemofiltrat*[tiab] OR hemofiltrat*[ot] OR "haemo-diafiltration"[tiab] OR "haemo-diafiltration"[ot] OR haemodiafiltrat*[tiab] OR haemodiafiltrat*[ot] OR "hemo-diafiltration"[tiab] OR "hemo-diafiltration"[ot] OR hemodiafiltrat*[tiab] OR hemodiafiltrat*[ot] OR "haemo-dialysis"[tiab] OR "haemo-dialysis"[ot] OR haemodialysis[tiab] OR haemodialysis[ot] OR "hemo-dialysis"[tiab] OR "hemo-dialysis"[ot] OR hemodialysis[tiab] OR hemodialysis[ot] OR "haemo-perfusion"[tiab] OR "haemo-perfusion"[ot] OR haemoperfus*[tiab] OR haemoperfus*[ot] OR "hemo-perfusion"[tiab] OR "hemo-perfusion"[ot] OR hemoperfus*[tiab] OR hemoperfus*[ot]	79974
#33	#30 OR #31 OR #32	94680
#34	toraymyxin*[tiab] OR toraymyxin*[ot] OR toraymyxin*[nm] OR "DHP-PMX"[tiab] OR "DHP-PMX"[ot]	58
#35	#23 AND ((#29 AND #33) OR #34)	388
#36	randomized controlled trial [pt]	481534
#37	controlled clinical trial [pt]	569732
#38	randomized [tiab]	477328
#39	placebo [tiab]	202766
#40	clinical trials as topic [mesh: noexp]	186819
#41	randomly [tiab]	310518
#42	trial [ti]	197731
#43	#36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42	1221076

#44	animals [mh] NOT humans [mh]	4574748
#45	#43 NOT #44	1123329
#46	#35 AND #45	65

CENTRAL search strategy (検索日 2019年4月29日)

#1	MeSH descriptor: [Sepsis] explode all trees	3998
#2	MeSH descriptor: [Sepsis-Associated Encephalopathy] this term only	0
#3	MeSH descriptor: [Systemic Inflammatory Response Syndrome] explode all trees	4328
#4	MeSH descriptor: [Vasoplegia] explode all trees	10
#5	MeSH descriptor: [Multiple Organ Failure] explode all trees	384
#6	(bacill?emia* or bacter* shock or bacter?emia* or (blood adj2 poison*) or candid?emia* or endotox?emia* or endotoxi* shock or fung?emia* or parasit?emia* or (py?emia* or pyohemia*) or sepsis or septic or septic?emia* or SIRS or systemic inflammatory response syndrome* or toxic shock or vasopl?egia* or vir?emia*):ti,ab,kw	1400
#7	#1 OR #2 OR #3 OR #4 OR #5 OR #6	5626
#8	MeSH descriptor: [Polymyxin B] this term only	169
#9	(aerosporin or PMX* or polymyxin* or "Poly RX" or toraymyxin*):ti,ab,kw	453
#10	#8 or #9	453
#11	MeSH descriptor: [Blood Component Removal] this term only	201
#12	MeSH descriptor: [Endotoxins] this term only	363
#13	MeSH descriptor: [Hemofiltration] explode all trees	575
#14	MeSH descriptor: [Hemoperfusion] this term only	77
#15	(h*mosor*):ti,ab,kw	17
#16	(apheres*s or pheres?s* "blood component removal*" or DHP-PMX or PMX-HP or PMX-DHP or (endotoxin* adj3 (a?sor* or eliminat* or remov*))) :ti,ab,kw	52
#17	(h*madsor* or h*mo-filtrat* or h*mofiltrat* or h*mo-diafiltrat* or h*modiafiltrat* or h*mo-dialysis or h*modialysis or h*mo-perfus* or h*moperfus* or h*mo-sor*):ti,ab,kw	11416
#18	#11 or #12 or #13 or #14 or #15 or #16 or #17	11971
#19	#10 and #18	74
#20	#7 and #19	31

医学中央雑誌 search strategy (検索日 2019年4月29日)

#1	敗血症/TH or 敗血症/TA or 菌血症/TA	47,667
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#2	"Polymyxin B"/TH or Polymyxins/TH or polymyxin/TA or polymixin/TA or ポリミキシ ン/TA or ポリミクシン/TA or PMX/TA	5,604
#3	#1 and #2	2,756
#4	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 コント ロール/AL or 臨床研究/AL	301,704
#5	#3 and #4	141

WHO – ICTRP, searched 29 April 2019

Condition: bacteraemia OR bacteremia OR candidaemia OR candidemia OR endotoxaemia OR endotoxemia  
OR fungaemia OR fungemia OR parasitaemia OR sepsii OR SIRS OR systemic inflammatory response syndrome  
OR viraemia OR viremia

AND

Intervention: aerosporin OR polymyxin OR polymixins OR PMX OR PMX-HP OR Poly RX OR toramycin OR  
toraymyxin

Records selected:17

ClinicalTrials.gov, searched 12 May 2019

Recruitment: All Studies

Study Results: All Studies

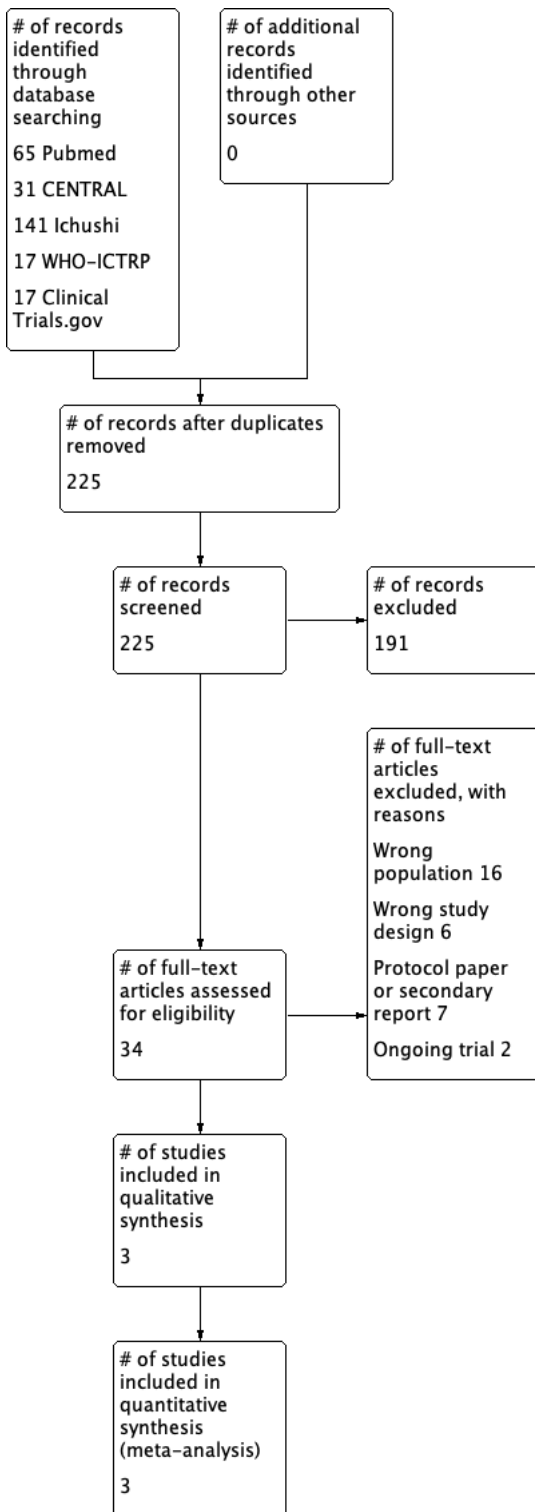
Study Type: Interventional Studies

Conditions: "Bacteremia" OR "Candidemia" OR "Endotoxemia" OR "Fungemia" OR "Parasitemia" OR  
"Sepsis" OR "Sepsis-Associated Encephalopathy" OR "Shock, Septic" OR "Systemic Inflammatory Response  
Syndrome" OR "Viremia"

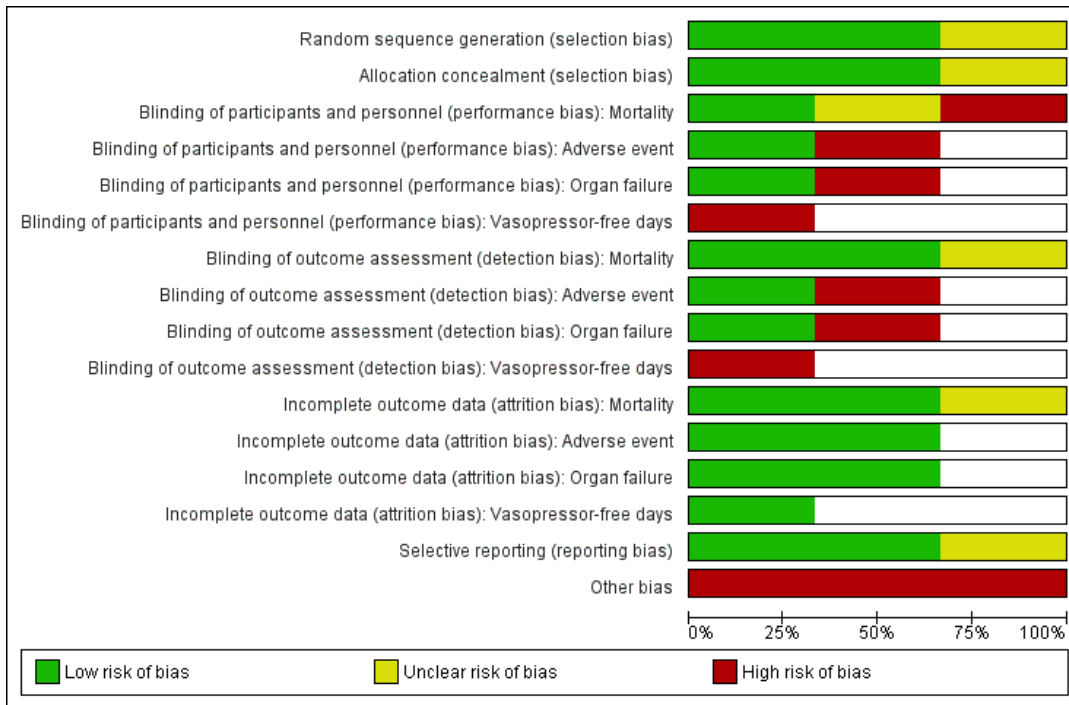
Interventions: "Polymyxin B" OR "Polymyxins"

Records selected:17

図 1. PRISMA フローチャート



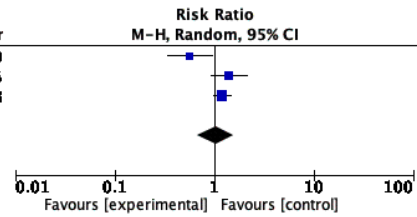
☒ 2. RoB graph



### 図 3. Forest plot

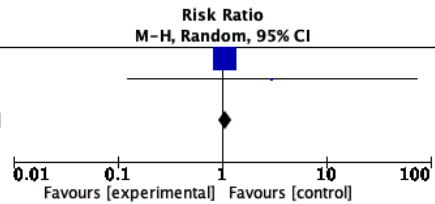
#### 1. 死亡率（最長観察期間）

Study or Subgroup	Experimental		Control		Weight	Risk Ratio		Year
	Events	Total	Events	Total		M-H, Random, 95% CI		
Nakamura 1999	12	30	14	20	26.9%	0.57	[0.34, 0.96]	1999
Payen 2015	40	119	27	113	31.7%	1.41	[0.93, 2.13]	2015
Dellinger 2018	115	224	97	226	41.4%	1.20	[0.98, 1.46]	2018
<b>Total (95% CI)</b>		373		359	100.0%	1.03	[0.68, 1.58]	
<b>Total events</b>	<b>167</b>		<b>138</b>					
Heterogeneity: $\tau^2 = 0.10$ ; $\text{Chi}^2 = 7.96$ , $\text{df} = 2$ ( $P = 0.02$ ); $I^2 = 75\%$								
Test for overall effect: $Z = 0.15$ ( $P = 0.88$ )								



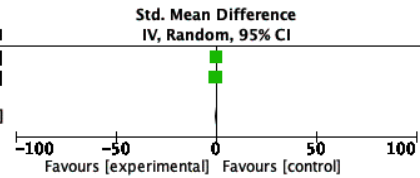
#### 2. 副作用（副作用の起きた患者の割合）

Study or Subgroup	Experimental		Control		Weight	Risk Ratio	
	Events	Total	Events	Total		M-H, Random, 95% CI	
Payen 2015	92	119	82	113	99.8%	1.07	[0.92, 1.24]
Dellinger 2018	1	224	0	226	0.2%	3.03	[0.12, 73.90]
<b>Total (95% CI)</b>		343		339	100.0%	1.07	[0.92, 1.24]
<b>Total events</b>	<b>93</b>		<b>82</b>				
Heterogeneity: $\tau^2 = 0.00$ ; $\text{Chi}^2 = 0.42$ , $\text{df} = 1$ ( $P = 0.52$ ); $I^2 = 0\%$							
Test for overall effect: $Z = 0.86$ ( $P = 0.39$ )							



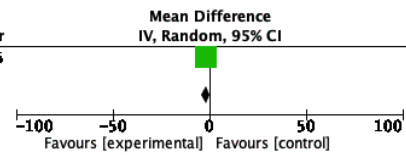
#### 3. 臓器障害スコア（72 時間の変化または最終値）

Study or Subgroup	Experimental			Control			Weight	Std. Mean Difference	
	Mean	SD	Total	Mean	SD	Total		IV, Random, 95% CI	
Payen 2015	8.3	3.6	119	7.5	3.5	113	47.3%	0.22	[-0.03, 0.48]
Dellinger 2018	-2.2	3.6	224	-1.6	3.3	226	52.7%	-0.17	[-0.36, 0.01]
<b>Total (95% CI)</b>			343			339	100.0%	0.01	[-0.37, 0.40]
Heterogeneity: $\tau^2 = 0.07$ ; $\text{Chi}^2 = 6.03$ , $\text{df} = 1$ ( $P = 0.01$ ); $I^2 = 83\%$									
Test for overall effect: $Z = 0.08$ ( $P = 0.94$ )									



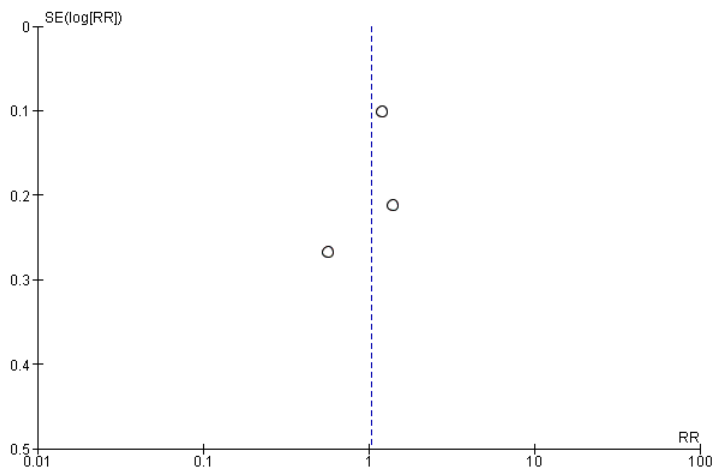
#### 4. 昇圧薬不使用日数

Study or Subgroup	Experimental			Control			Weight	Mean Difference	
	Mean	SD	Total	Mean	SD	Total		IV, Random, 95% CI	
Payen 2015	18.1	9.6	119	19.9	8.6	113	100.0%	-1.80	[-4.14, 0.54]
<b>Total (95% CI)</b>			119			113	100.0%	-1.80	[-4.14, 0.54]
Heterogeneity: Not applicable									
Test for overall effect: $Z = 1.51$ ( $P = 0.13$ )									

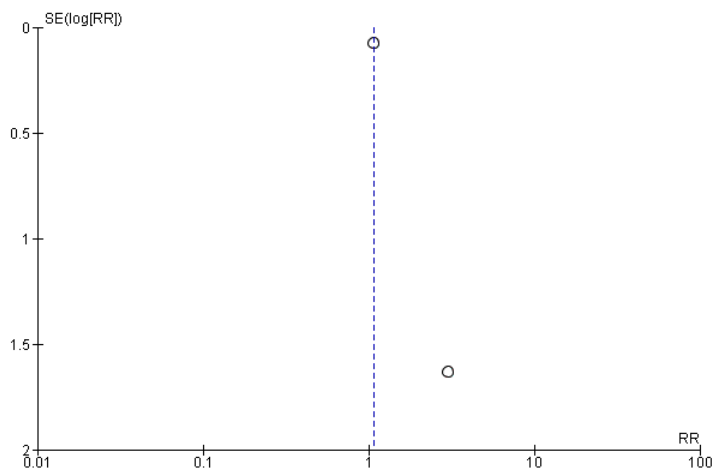


## 図 4. Funnel Plot

### 1. 死亡率（最長観察期間）



### 2. 副作用（副作用の起きた患者の割合）



### 3. 臓器障害スコア（72 時間の変化または最終値）

