

CQ13-1 (GRADE)

P: Patients in intensive care unit

E: Glucometer (capillary blood)

C: Arterial blood gas analyzer (arterial/ venous blood), glucometer (arterial/ venous blood)

O: Mortality, infection, hypoglycemia, significantly outside the acceptable range

Arterial blood gas analyzer (arterial/ venous blood) vs glucometer (capillary blood)

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	glucometer (capillary blood)	Blood gas analyzer (arterial/ venous blood)	Relative (95% CI)	Absolute (95% CI)		
Significantly outside the acceptable range												
3	observational study	not serious	not serious	not serious	not serious	none	79/1888 (4.2%)	2/912 (0.2%)	RR 21.56 (6.15 to 75.57)	45 more per 1,000 (from 11 more to 164 more)	⊕⊕⊕⊕ High	CRITICAL

Arterial blood gas analyzer (arterial/ venous blood) vs glucometer (arterial/ venous blood)

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Blood gas analyzer (arterial/ venous blood)	Glucometer (arterial/ venous blood)	Relative (95% CI)	Absolute (95% CI)		
Significantly outside the acceptable range												
5	observational study	not serious	not serious	not serious	serious	none	3/1232 (0.2%)	38/3089 (1.2%)	RR 0.18 (0.03 to 1.02)	10 fewer per 1,000 (from 12 fewer to 0 fewer)	⊕⊕⊕○ Moderate	CRITICAL

Glucometer (arterial/ venous blood) vs glucometer (capillary blood)

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Glucometer (capillary blood)	Glucometer (arterial/ venous blood)	Relative (95% CI)	Absolute (95% CI)		
Significantly outside the acceptable range												
8	observational study	not serious	not serious	not serious	not serious	none	249/2759 (9.0%)	164/3165 (5.2%)	RR 2.11 (1.23 to 3.59)	58 more per 1,000 (from 12 more to 134 more)	⊕⊕⊕⊕ High	CRITICAL

Arterial blood gas analyzer/ glucometer (arterial/ venous blood) vs glucometer (capillary blood)

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	glucometer (capillary blood)	Blood gas analyzer/ glucometer (arterial/ venous blood)	Relative (95% CI)	Absolute (95% CI)		
Significantly outside the acceptable range												
3	observational study	not serious	not serious	not serious	not serious	none	79/1888 (4.2%)	30/3187 (0.9%)	RR 5.12 (2.47 to 10.59)	39 more per 1,000 (from 14 more to 90 more)	⊕⊕⊕⊕ High	CRITICAL

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	Yes		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	Moderate	Large		Varies	Don't know
UNDESIRABLE EFFECTS	Large	Moderate	Small	Trivial		Varies	Don't know
CERTAINTY OF EVIDENCE	Very low	Low	Moderate	High			No included studies
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability			
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	Don't know
ACCEPTABILITY	No	Probably no	Probably yes	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	Probably yes	Yes		Varies	Don't know

CQ13-2 (GRADE)

Mortality

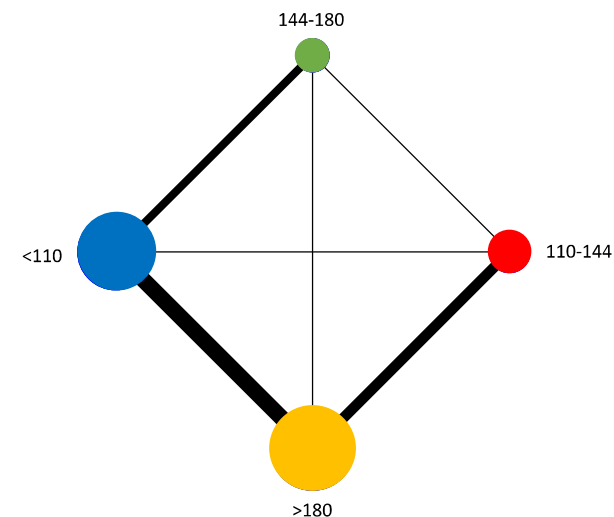
Estimates of effects, credible intervals, and certainty of the evidence for blood sugar level in septic patients.

Frequency NMA-SoF table

BENEFITS

Patients or population: septic patients
 Interventions: One of the following oxygen therapies: <110, 110-144, 144-180, >180
 Comparator (reference): One of the other therapies other than the therapy included in intervention
 Outcome: Short-term mortality
 Setting: In-hospital

Network plot



Total studies: Total Patients:	Relative effect (95% CI) Network estimate	Anticipated absolute effect (95% CI)			Certainty of the evidence	Ranking (SUCRA)	Interpretation of Findings
		Without intervention	With intervention	Difference			
>180 (12 RCT; 8,027 participants)	1.01 (0.95 to 1.08) Network estimate	432 per 1000	436 per 1000	4 more per 1000 (22 fewer to 35 more)	⊕⊕⊕⊕ High	4 (16.5)	-
144-180 (5 RCT; 7,323 participants)	0.90 (0.83 to 0.97) Network estimate	267 per 1000	240 per 1000	27 fewer per 1000 (45 fewer to 8 fewer)	⊕⊕⊕⊕ High	1 (81.0)	-

●	110-144 (1 RCT; 90 participants)	0.88 (0.71 to 1.09) Network estimate	333 per 1000	293 per 1000	40 fewer per 1000 (100 fewer to 30 more)	⊕⊕⊕○ Moderate	2 (77.4)	
●	<110	Reference comparator	No estimable	No estimable	No estimable	-	3 (25.1)	-
	>180 (8 RCT; 884 participants)	1.14 (0.93 to 1.40) Network estimate	202 per 1000	230 per 1000	28 more per 1000 (14 fewer to 81 more)	⊕⊕⊕○ Moderate	-	-
	144-180 (1 RCT; 20 participants)	1.01 (0.81 to 1.27) Network estimate	545 per 1000	551 per 1000	6 more per 1000 (104 fewer to 147 more)	⊕⊕⊕⊕ High		
	110-144	Reference comparator	No estimable	No estimable	No estimable	-	-	-
	>180 (1 RCT; 212 participants)	1.13 (1.02 to 1.25) Network estimate	10 per 1000	11 per 1000	1 more per 1000 (0 more to 3 more)	⊕⊕⊕○ Moderate		
	144-180	Reference comparator	No estimable	No estimable	No estimable	-	-	-

Infection

Estimates of effects, credible intervals, and certainly of the evidence for blood sugar level in septic patients.

Frequency NMA-SoF table

BENEFITS

Patients or population: septic patients

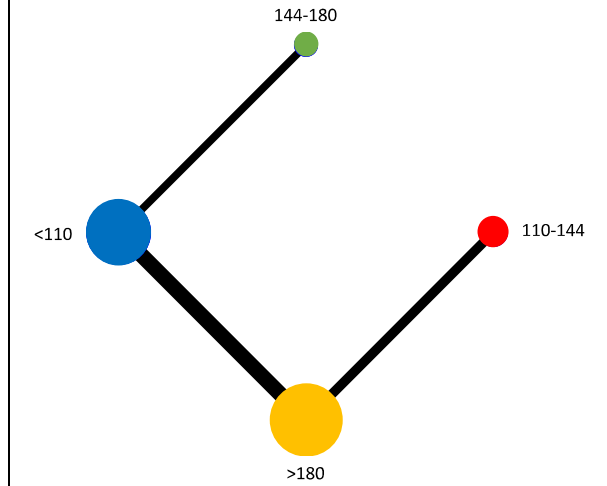
Interventions: One of the following oxygen therapies: <110, 110-144, 144-180, >180

Comparator (reference): One of the other therapies other than the therapy included in intervention

Outcome: Infection

Setting: In-hospital

Network plot



Total studies: Total Patients:	Relative effect (95% CI)	Anticipated absolute effect (95% CI)			Certainly of the evidence	Ranking (SUCRA)	Interpretation of Findings
		Without intervention	With intervention	Difference			
● >180 (8 RCT; 6,104 participants)	1.15 (1.05 to 1.26) Direct estimate	167 per 1000	192 per 1000	25 more per 1000 (8 more to 43 more)	⊕⊕○○ Low	4 (12.2)	-
● 144-180 (3 RCT; 6,185 participants)	0.96 (0.86 to 1.07) Direct estimate	136 per 1000	131 per 1000	5 fewer per 1000 (19 fewer to 10 more)	⊕⊕○○ Low	3 (49.7)	-
● 110-144 (no direct comparison)	0.94 (0.75 to 1.16) Indirect estimate	no direct comparison	no direct comparison	no direct comparison	⊕○○○ Very low	1 (83.2)	

	<110	Reference comparator	No estimable	No estimable	No estimable	-	2 (54.9)	-
	>180 (5 RCT; 485 participants)	1.23 (1.01 to 1.50) Direct estimate	269 per 1000	331 per 1000	62 more per 1000 (3 more to 135 more)	⊕⊕○○ Low	-	-
	144-180 (no direct comparison)	1.03 (0.80 to 1.31) Indirect estimate	no direct comparison	no direct comparison	no direct comparison	⊕⊕○○ Low		
	110-144	Reference comparator	No estimable	No estimable	No estimable	-	-	-
	>180 (no direct comparison)	1.20 (1.04 to 1.38) Indirect estimate	no direct comparison	no direct comparison	no direct comparison	⊕○○○ Very low		
	144-180	Reference comparator	No estimable	No estimable	No estimable	-	-	-

Hypoglycemia

Estimates of effects, credible intervals, and certainty of the evidence for blood sugar level in septic patients.

Frequency NMA-SoF table

BENEFITS

Patients or population: septic patients

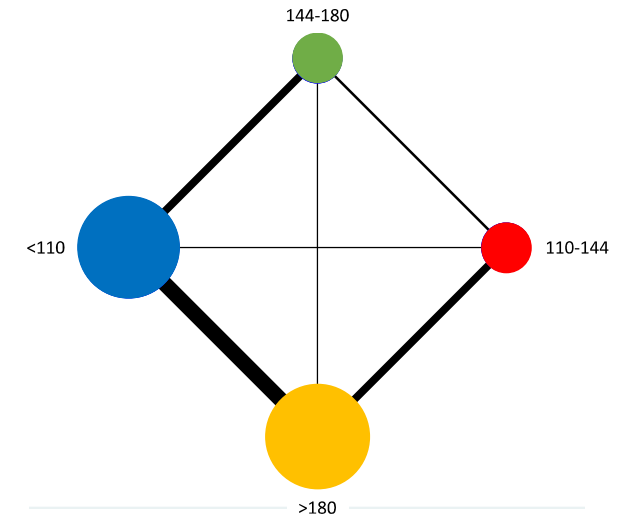
Interventions: One of the following oxygen therapies: <110, 110-144, 144-180, >180

Comparator (reference): One of the other therapies other than the therapy included in intervention

Outcome: Hypoglycemia

Setting: In-hospital

Network plot



Total studies: Total Patients:	Relative effect (95% CI) Network estimate	Anticipated absolute effect (95% CI)			Certainty of the evidence	Ranking (SUCRA)	Interpretation of Findings
		Without intervention	With intervention	Difference			
>180 (12 RCT; 8,342 participants)	0.55 (0.50 to 0.60) Network estimate	188 per 1000	103 per 1000	85 fewer per 1000 (94 fewer to 75 fewer)	⊕⊕⊕⊕ High	2 (74.9)	-
144-180 (5 RCT; 7,331 participants)	0.17 (0.12 to 0.24) Network estimate	76 per 1000	13 per 1000	63 fewer per 1000 (67 fewer to 58 fewer)	⊕⊕○○ Low	1 (91.3)	-
110-144 (1 RCT; 90)	1.10 (0.69 to 1.77)	134 per 1000	147 per 1000	13 more per 1000 (42 fewer to 103 fewer)	⊕○○○ Very low	3 (30.3)	-

	participants)	Network estimate			more)			
●	<110	Reference comparator	No estimable	No estimable	No estimable	-	4 (3.6)	-
	>180 (7 RCT; 730 participants)	0.50 (0.31 to 0.79) Network estimate	175 per 1000	88 per 1000	88 fewer per 1000 (121 fewer to 37 fewer)	⊕⊕○○ Low	-	-
	144-180 (1 RCT; 302 participants)	0.16 (0.09 to 0.27) Network estimate	79 per 1000	13 per 1000	66 fewer per 1000 (72 fewer to 58 fewer)	⊕⊕⊕○ Moderate		
	110-144	Reference comparator	No estimable	No estimable	No estimable	-	-	-
	>180 (1 RCT; 212 participants)	3.17 (2.23 to 4.46) Network estimate	0 per 1000	0 per 1000	0 more per 1000 (0 more to 0 more)	⊕⊕⊕⊕ High		
	144-180	Reference comparator	No estimable	No estimable	No estimable	-	-	-

	JUDGEMENT						
PROBLEM	No	Probably no	Probably yes	Yes		Varies	Don't know
DESIRABLE EFFECTS	Trivial	Small	Moderate	Large		Varies	Don't know
UNDESIRABLE EFFECTS	Large	Moderate	Small	Trivial		Varies	Don't know
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ACCEPTABILITY	No	Probably no	Probably yes	Yes		Varies	Don't know
FEASIBILITY	No	Probably no	Probably yes	Yes		Varies	Don't know