

DOES MINIMALY INVASIVE EXTRACORPOREAL CIRCULATION EFFECTIVE IN COMORBID PATIENTS

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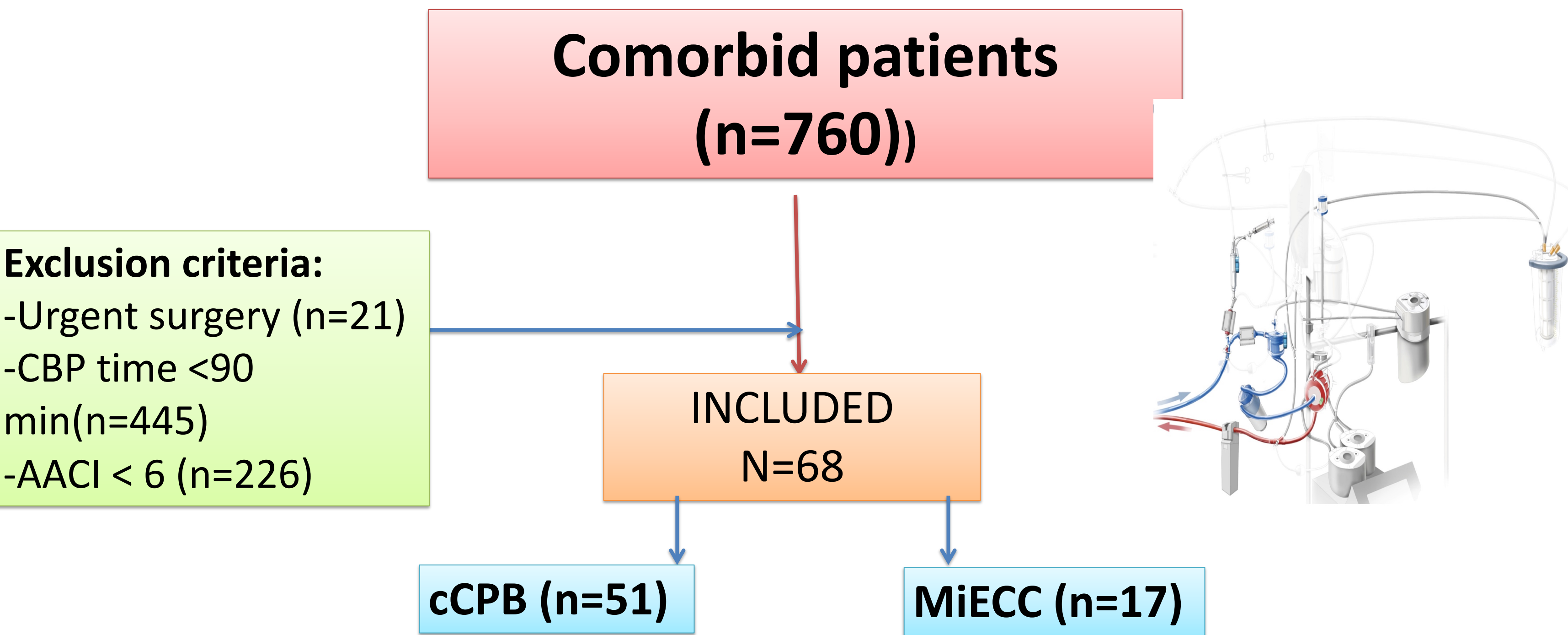
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Aim

Comparison of clinical efficacy and severity of SIRS in comorbid patients who underwent cardiac surgery with convention CPB and MiECC

Hypothesis

MiECC may reduce the severity of SIRS and MODS in comorbid patients due to decrease damaging agents.



BASELINE CHARACTERISTICS:
NO STATISTICALLY SIGNIFICANT DIFFERENCE!!!

	cCPB, n=51	MiECC, n=17	p
Male/ffemale, n (%) (n)	41 (80,4) / 10 (19,6)	12 (70,6) / 5 (29,4)	0,5012
Age, Me [Q ₁ -Q ₃]	70 [66-72,5]	70 [66-74]	0,8006
BMI, Me [Q ₁ -Q ₃]	29 [23-33,5]	30 [28-34]	0,3598
CHF (NYHA), n (%):			
II	27 (52,9)	10 (58,8)	0,7817
III	24 (47,1)	7 (41,2)	0,7817
Comorbidity, n (%):			
AAIC, Me [Q ₁ -Q ₃]	6 [4-6]	6 [3-6]	0,6840
CKD ≥3Б	25 (49)	7 (43,75)	0,7797
including: 3Б	17 (68)	5 (71,4)	0,9999
4	8 (32)	2 (28,6)	0,9999
RF, n (%)	29 (56,8)	12 (70,6)	0,3974
Diabetes, n (%)	16 (31,4)	7 (41,1)	0,5568
EuroSCORE 2, Me [Q ₁ -Q ₃]	5 [4-6]	5 [4-6]	0,5091

INTRAOPERATIVE			
Parameters	cCPB, n=51	MiECC, n=17	p
Operation t, min	310 [225-340]	330 [229-340]	0,4912
ECC t , min	182 [156-190,5]	175 [131-202]	0,5366
X clamp t, min	142 [112-159,5]	140 [120-162]	0,9552
Blood loss, ml	780 [705-850]	790 [730-830]	0,7790

NO STATISTICALLY SIGNIFICANT DIFFERENCE!!!

IMMUNE STATUS			
Parameters (after ECC)	cCPB, n=51	MiECC, n=17	P
Procalcitonine, ng/ml			
a. 1 h	0,2 [0,1-0,75]	0,3 [0,15-1,1]	0,3178
B. 24 h	1,45 [0,9-1,9]	1 [0,65-1,75]	0,1733
P = a/b	<<0,0001	0,0003	
C-reactive protein, mg/l			
a. 1 h	5,6 [3,9-9,2]	5,5 [4,1-8,4]	0,9218
B. 24 h	7,8 [6-11,35]	7,5 [4,9-10,6]	0,4203
P = a/b	<<0,0001	0,2659	
sTrem-1, pg/ml			
a. 1 h	176 [154,5-198]	155 [129-182]	0,0191
B. 24 h	184 [159-213,5]	131 [120-156]	<<0,0001
P = a/b	<<0,0001	0,0132	

POSTOPERATIVE							
Parameters	cCPB, n=51	MiECC, n=17	P	Parameters	cCPB, n=51	MiECC, n=17	P
Drainage loss, ml	310 [250-355]	310 [290-340]	0,6943	Ventilation t, min, Me [Q ₁ -Q ₃]	790 [607,5-870]	340 [280-360]	<<0,0001
Free Hb (hemolysis) , g/l	2,2 [1,15-3,1]	0,9 [0,85-1,1]	<<0,0001	VA ECMO, n (%)	2 (3,92)	0 (0)	0,9999
Dopamine, mkg/kg/min	5 [4-7]	4 [3-5]	0,0112	Dialysis, n (%)	6 (11,8)	1 (5,9)	0,6705
Norepinephrine, mkg/kg/min	0,05 [0,03-0,09]	0 [0-0,03]	<<0,0001	ICU, h, Me [Q ₁ -Q ₃]	41 [20,5-68]	36 [18-62]	0,075
Lactate, mmol/l	3 [2,25-3,75]	1,5 [1,2-2,2]	<<0,0001	Hosp.stay, d, Me [Q ₁ -Q ₃]	21 [16,5-31]	11 [10-12]	<<0,0001
PaO ₂ /FiO ₂	190 [168-227]	300 [276-330]	<<0,0001	Mortality, n (%)	6 (11,8)	0 (0)	0,3246
Diuresis, ml/h	60 [50-72,5]	75 [70-95]	0,0001				
Creatinine, mmol/l	149 [130-184,5]	134 [129-154]	0,1457				

Parameters (after ECC)	cCPB, n=51	MiECC, n=17	P
Interleukin - 6, pg/ml			
a. 1 h	15,2 [11,2-19,75]	16,2 [12-19,8]	0,8044
B. 24 h	32,7 [29,15-47,7]	27,7 [25,3-41,5]	0,0920
P = a/b	<<0,0001	<<0,0001	
Interleukin - 10, pg/ml			
a. 1 h	10,5 [7,95-12,75]	10,6 [6,9-12,6]	0,8023
B. 24 h	6,9 [5,1-10,175]	10,2 [8,4-12,3]	0,0122
P = a/b	<<0,0001	0,9079	
Leukocytes, x10 ⁹			
a. 1 h	10,4 [9,1-12,75]	8,8 [8,3-9,7]	0,0063
B. 24 h	12,8 [10,45-15,65]	8,9 [8,3-10,1]	<<0,0001
P = a/b	<<0,0001	0,5538	

CONCLUSION

- MiECC reduced the severity of SIRS and immune suppression in comorbid patients