

Appendix 1. Range of hemodynamic and respiratory criteria as adverse events.

Parameter	Measured value	Adverse event name	Ref.
SBP	< 80 mmHg or ≥ 30% decrease from baseline	Hypotension	(23)
	> 180 mmHg or ≥ 30% increase from baseline	Hypertension	
DBP	< 50 mmHg	Hypotension	(23)
	> 100 mmHg	Hypertension	
Heart rate	< 40 bpm or ≥ 30% decrease from baseline	Bradycardia	(23)
	> 120 bpm or ≥ 30% increase from baseline	Tachycardia	
SpO₂	< 90% or ≥ 10% decrease from baseline	Hypoxia	(23)

bpm, beats per minute; DBP,

diastolic blood pressure; SBP, systolic blood pressure; SpO₂, oxygen saturation.

Appendix 2. The change of hemodynamic and respiratory parameters before and during dexmedetomidine infusion and postoperative cardiac surgery.

Characters	Group	Pre-Op Mean ± SD	Pre-Pump Mean ± SD	After Pump Off Mean ± SD	Before Extubation Mean ± SD	After Extubation Mean ± SD	Post-Op Mean ± SD	P- value*
SBP (mmHg)	Control	149.5 ± 21.1	101.5 ± 14.7	98.50 ± 24.04	117.00 ± 13.4	118.60 ± 13.6	123.2 ± 11.1	<0.001
	Dex	133.5 ± 19.7	103.0 ± 14.9	106.50 ± 12.48	116.20 ± 16.7	123.10 ± 17.3	122.0 ± 15.7	<0.001
DBP (mmHg)	Control	88.50 ± 18.5	61.20 ± 11.2	59.20 ± 13.86	69.70 ± 11.6	72.20 ± 9.60	72.50 ± 8.85	0.001
	Dex	75.90 ± 13.6	60.70 ± 9.84	58.20 ± 11.56	65.80 ± 11.1	75.20 ± 10.92	75.10 ± 10.5	0.003
HR (bpm)	Control	75.20 ± 17.5	78.70 ± 16.6	83.10 ± 15.59	88.50 ± 5.19	88.00 ± 10.19	88.80 ± 7.51	0.357
	Dex	73.11 ± 11.7	75.00 ± 11.5	76.44 ± 10.38	79.22 ± 11.09	83.33 ± 14.52	82.78 ± 13.5	0.004
SPO₂ (%)	Control	96.80 ± 2.62	97.50 ± 1.18	97.90 ± 1.60	97.90 ± 1.29	97.70 ± 1.70	98.20 ± 1.14	0.445
	Dex	97.40 ± 1.43	97.90 ± 1.29	97.50 ± 0.97	97.80 ± 1.32	97.00 ± 2.00	96.40 ± 2.63	0.480
PaCO₂ (mmHg)	Control	38.50 ± 6.87	33.80 ± 7.16	36.70 ± 5.72	37.60 ± 2.17	43.60 ± 7.58	39.80 ± 3.36	0.007
	Dex	36.90 ± 6.21	36.00 ± 5.08	35.70 ± 4.55	37.10 ± 4.36	38.90 ± 3.84	40.60 ± 4.95	0.191

*: within-group (Friedman Test).

Appendix 3. Lactate level before and during dexmedetomidine infusion.

Lactate (mmol/L)	Groups			
	Control		Dex	
	Mean \pm SD	Median (IQR)	Mean \pm SD	Median (IQR)
Pre-Op	1.00 \pm 0.26	1.00 (0.72, 1.20)	1.38 \pm 0.42	1.30 (1.13, 1.48)
Before Induction	0.98 \pm 0.35	0.90 (0.63, 1.30)	1.45 \pm 0.71	1.30 (1.15, 1.45)
Pre-Pump	1.5 \pm 1.07	1.15 (0.93, 1.55)	1.63 \pm 0.65	1.35 (1.20, 2.13)
Pump1	2.19 \pm 2.19	1.25 (1.20, 2.13)	1.93 \pm 1.00	1.50 (1.30, 2.48)
Pump2	2.49 \pm 2.47	1.45 (1.30, 2.43)	2.09 \pm 0.97	1.75 (1.45, 2.38)
Pump Off	3.19 \pm 2.66	2.10 (1.85, 3.57)	2.10 \pm 0.93	1.70 (1.42, 2.60)
After Closing Sternum	2.06 \pm 0.64	2.05 (1.53, 2.30)	2.24 \pm 1.11	2.00 (1.33, 2.78)
Post-Op	2.36 \pm 1.68	1.50 (1.22, 4.28)	1.75 \pm 0.50	1.55 (1.40, 2.22)
P-value*		<0.001		0.012

IQR: interquartile range, *: within-group (Friedman Test).

Appendix 4. Blood sugar level before and during dexmedetomidine infusion.

Character		Per-Op Median (IQR)	Intra-Op Median (IQR)	Post-Op Median (IQR)	P-value*
Blood sugar (BS) (mg/dL)	Control	103 (86.75,126.75)	131 (115,190)	140.5 (120.5, 208.25)	0.006
	Dex	160 (116.75,186.25)	162.5 (124.25, 209)	172.5 (149, 208)	0.122

IQR: interquartile range, *: within-group (Friedman Test).