

2023 대한심장혈관흉부외과학회

제55차 추계학술대회 & APELSO 2023

2023. 11. 02 (Thu) - 11. 04 (Sat), 그랜드 인터컨티넨탈 파르나스 서울

**The Predictive Role of Mechanical Circulatory Support Utilization Following
Surgery for Post-infarction Ventricular Septal Defect on Mortality**



- Post-infarction ventricular septal defect (VSD) is a rare but highly fatal condition.
- While recent attempts have been made to lower the surgical mortality rate using preoperative extracorporeal membrane oxygenation (ECMO) or intra-aortic balloon pump (IABP), there are no precise guidelines, and the evidence for their effectiveness is mostly limited to case reports.
- This study aimed to investigate in-hospital mortality following post-infarction VSD repair and analyze the risk factors.

- A total of 33 patients who underwent surgery for post-infarction VSD between January 2006 and December 2022 were included.
- The median age was 72.0 (67.7-77.5) years, and 13 (39.39%) of them were male.
- VSD patch closure was performed in every case.
- There were a total of 14 (42.42%) in-hospital deaths.
- Comparative analysis was performed by dividing into two groups : survivors and non-survivors.

	Survivors (n=19)	Non-survivors (n=14)	p value
Age (years)	71 (63.5-74.0)	76 (69.0-79.0)	0.0359
Male	7 (36.8%)	6 (42.9%)	1.0000
Hemoglobin (g/dl)	12.5 (11.4-13.4)	11.1 (10.4-12.6)	0.0834
Bilirubin (mg/dl)	0.84 (0.62-1.21)	0.96 (0.75-1.38)	0.3528
Creatinine (mg/dl)	0.90 (0.71-1.13)	1.07 (0.80-1.80)	0.1294
Inferior VSD	4 (21.1%)	5 (35.7%)	0.4421
Pre-op Mechanical circulatory support (MCS)	7 (36.8%)	7 (50.0%)	0.4969
ECMO	2 (10.5%)	4 (28.6%)	
IABP	5 (26.3%)	4 (28.6%)	
Pre-op Mechanical ventilation	5 (26.3%)	4 (28.6%)	1.0000
VSD diagnosis to operation (d ays)	1.0 (0.0-7.0)	0.0 (0.0-5.0)	0.3621
Concomitant CABG	5 (26.3%)	0	0.0574
Post-op MCS	4 (21.1%)	12 (85.7%)	0.0003
ECMO	1 (5.3%)	8 (57.1%)	
IABP	4 (21.1%)	5 (35.7%)	
EF (%)	50.0 (47.4-59.4)	48.5 (38.1-68.5)	0.7292

Variables	Odds ratio	95% CI	<i>p</i> value
Age > 75 years	9.6335	0.9279-100.0101	0.0578
Creatinine >1.3mg/dl	2.6172	0.2999-22.8387	0.3840
Post-op MCS	25.5889	2.3232-281.8438	0.0081

- In the multivariate analysis, it was found that postoperative mechanical circulatory support (MCS) was a risk factor for mortality.

- Post-infarction VSD is a high-mortality condition.
- The use of ECMO or IABP prior to surgery did not have a significant impact on survival.
- As cardiopulmonary bypass (CPB) cannot be weaned, postoperative MCS may be inevitable.
- The probability of weaning from CPB can be utilized as a significant predictor of mortality in post infarct VSD patient.