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## Background

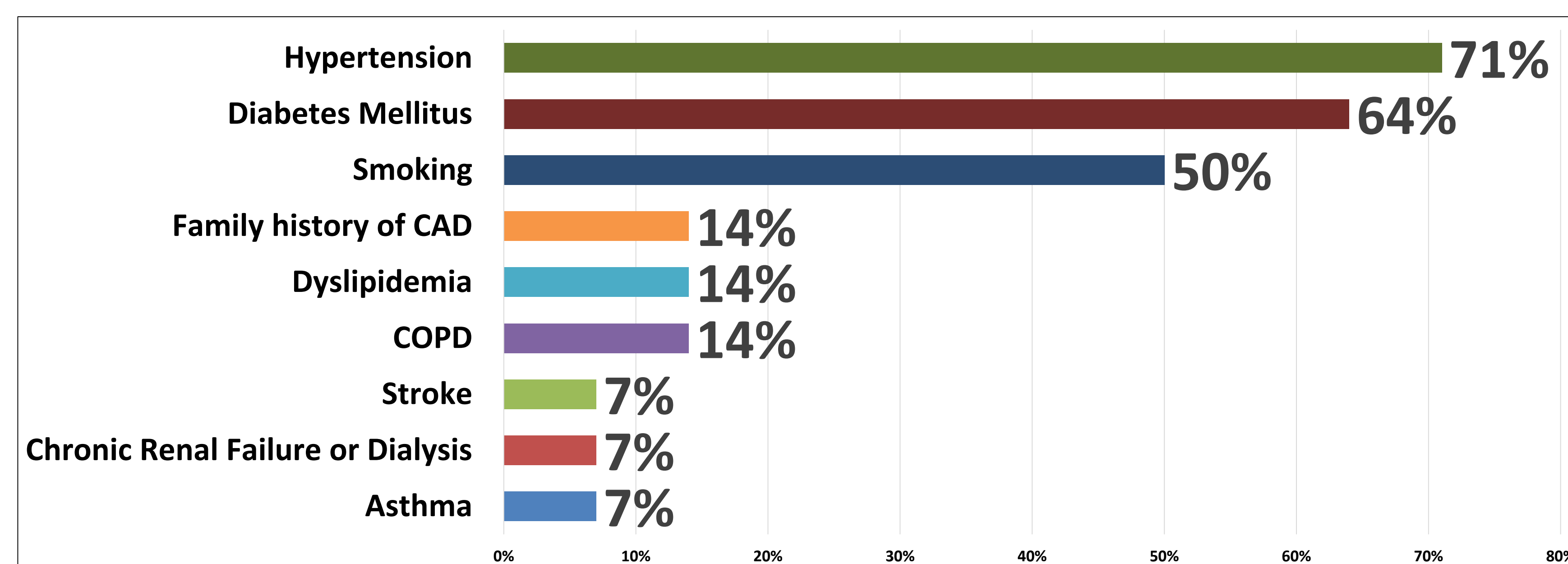
Ventricular septal rupture (VSR) is one of the rare and serious mechanical complications of acute myocardial infarction (AMI). The entity carries high morbidity and mortality rate (18-42%), which largely depends on the presentation and patient characteristics. Surgical intervention is the principle management of VSR. Our primary objective is to determine thirty-day mortality.

## Methods

During a 15 years' period, 14 patients underwent repair of VSR at King Salman Heart Center. All data were collected retrospectively and analysis of data to identifies thirty-day mortality as primary outcome was determined. Further analysis was conducted to identify predictors of VSR, timing of surgery, associated mortality and morbidity, and early outcomes of different surgical approach. SPSS was used for statistical analysis. P value < 0.05 was considered significant.

## Results

VSR was found in 11 (77%) males and 3 (23%) females. Mean age was  $58 \pm 11.12$  years. Majority of the patients had high prevalence of hypertension 10 (71%), followed by diabetes 9 (64%) and 7 (50%) of them were smokers. STEMI was presented in 13 (93%) of the patients with median EURO score of 10.56%. Anterior VSR was found in 7 (50%), followed by apical 4 (29%), while only 3 (21%) were posterior. The commonest type of VSR was simple 12 (86%), followed by 2 (14%) complex type. The predominant surgical technique performed was infarct exclusion 12 (86%). Intra-aortic balloon pump (IABP) was implanted in 9 (64%) of the patients. Types of surgery were 5 (36%) emergency, 5 (36%) urgent and 4 (29%) salvage surgery, with median number of hours from VSD diagnosis to surgery was 14.5 hours. Post-operatively there was a significant reduction in median values of creatinine level and echocardiographic parameters like pulmonary artery pressure [P=0.012]. Majority of the mortalities were attributed to salvage surgery 4 (67%) and emergent surgery 2 (33%). Early timing of surgery, salvage surgery type and higher EURO score were major predictor of in-hospital mortality [P<0.05].



Operative death	Outcome	N	Mean	Std. Deviation	P-value
Hours from VSD diagnosis to surgery	survived	8	138.75	117.07	0.018
	Death	6	6.33	2.80	

Parameters	Median (Interquartile Range)		P-value
	Before	After	
Creatinine	140 (100-200)	82 (61-105)	0.012

## Conclusion

Post-infarction VSR remains a serious and challenging complication of AMI in the modern surgical era. Optimal preoperative care is crucial to improve outcome. Early timing of surgery and higher EURO score were major predictor of in-hospital mortality. We need to establish pathway and referral system for better outcome .