ICU bounce-back after cardiac surgery: are they preventable?

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Background

ICU readmission after cardiac surgery is a significant event , related to poor patient outcomes. Although the total number of patients is small they have a huge impact on health services and associated with: increased risk of mortality and morbidity, longer hospital stay and utilisation of health care resources. There is interest in using intensive care unit readmissions as an ICU quality indicator. Little is known about the incidence, timing and risk factors. Forecasting which patient will bounce back to ICU is a challenging task.

Method

Retrospective data and patient's record analysis for the period from July 2014 to July 2015, 47 patients were re admitted to ICU out of total number of 856 patients who had undergone cardiac surgery.

Table 1: Risk factors for readmission

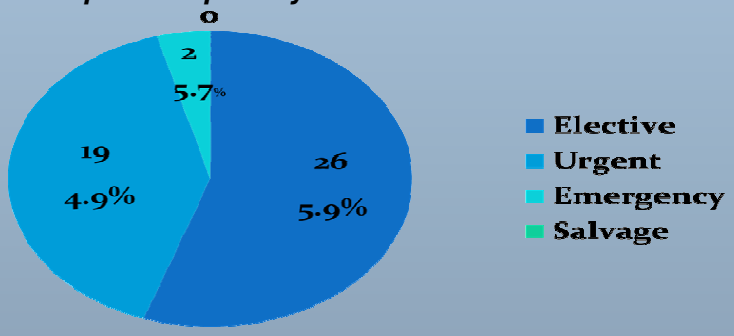
Category	Total No of Patients	BB	%	Grand total
EF				
Fair (LVEF 30-50%)	218	12	5.22%	230
Good (LVEF >50%)	534	30	5.32%	564
Poor (LVEF <30%)	48	3	5.88%	51
Operation				
CABG only	436	19	4.18%	455
CABG + valve	89	6	6.32%	95
valve only	185	12	6.09%	197
Other Cardiac Procedure	99	10	9.17%	109
Lung Status				
COAD/emphysema/ Asthma	111	10	8.26%	121
No pulmonary disease	697	36	4.91%	733
BMI				
Underweight	3		0.00%	3
Normal	180	8	4.26%	188
Overweight	313	24	7.12%	337
Obese	313	15	4.57%	328
Euroscore				
0-3	593	27	4.35%	620
3-6	142	15	9.55%	157
6-9	37	3	7.50%	40
9-12	20	1	4.76%	21
12-15	11		0.00%	11
18-21	3	1	25.00%	4

Results

- **n = 47**
- **Bounce-Back Rate 5.4%**
- **Mortality = 1**
- **Mean age = 69,9 v 67,5**

Figure 1: Causes of readmission

Figure 2: Operative priority



Conclusions

No obvious predictive risk factor was identified, further prospective study may be required to try to identify high risk group. We feel the focus should be on enhancing the nursing role in the wards (ICU/ward rotation training programme) and developing HDU beds service out of ICU may work as safety net. We also recommend an admission/discharge chart for better documentation to improve clinical practice and facilitate future audit experience.

References

- *van Diepen, S., Graham, M.M., Nagendran, J. et al. Crit Care (2014) 18: 651. doi:10.1186/s13054-014-0651-5.*
- *Rosenberg, Andrew L. MD; Hofer, Timothy P. MD; Hayward, RodneyA. MD; Strachan, Cathy MSRN; Watts, Charles M. MD, Critical Care Medicine: March2001-29-3-pp 511-518*