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**Infective endocarditis: exploring geographical trends and comparing risk models in a multi-ethnic asian population**

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**Background:**
Host factors and complications have been associated with higher mortality in infective endocarditis (IE). We explored factors impacting mortality in our local multiracial Singapore population and validated the simplified risk score to predict 6-month mortality in IE developed by the International Collaboration on Endocarditis [ICE].

**Methods:**
Using a retrospective registry of definite IE determined by the Duke’s criteria, we studied 116 IE cases diagnosed between January 2010 and December 2014. Baseline demographic, clinical and 6 month mortality data were collected. Logistic and Cox regression was used to study factors affecting 6 month mortality. A cut-off of p<0.10 was used to determine factors to be put into the multivariable model.

**Results:**
6 month mortality in the cohort was 26.7% [31/116]. Surgery during index hospitalization was performed in 20.7% [24/116] of the cohort. Significant factors affecting mortality include: [Host] diabetes mellitus, intravenous drug abuser, [IE characteristics] left sided valve regurgitation, nosocomial IE, [IE complications] persistent bacteremia, stroke and embolic phenomena. Surgery was significantly associated with lower risk of mortality.

The receiver operating curve(ROC) of the ICE simplified risk score is 0.84. Using the principle of parsimony, we compared our reduced model, removing variables (possible to state what are the variables removed to compare and contrast the 2 models) with p-value>0.10, the ROC of our reduced model is 0.85 and difference between performance of both models were non-significant at p=0.893. The goodness-of-fit of both models were demonstrated by non significant Hosmer-Lemeshow test. K-fold cross validation was also performed for internal validation of our reduced model.

**Conclusions**
6 month mortality after IE is 26.7% and is predicted by host factors, IE characteristics and complications. Surgery during the index hospitalization is associated with lower mortality. Our reduced IE model performed comparatively to the ICE risk score.