

00444 **Predictive Model for Overall Survival Following Colorectal Cancer Surgery in Elderly Patients and Validation With an External Cohort**

Isaac Seow-En¹, Winson Tan², Sreemane Dorajoo³, Sharon Soh¹, Yi Chye Law¹, Ng Wanqi³, Foo Fung Joon², Tan Wah Siew¹, Tang Choong Leong¹, Chew Min Hoe²

¹Singapore General Hospital, ²Sengkang General Hospital, ³National University of Singapore

Aims: With advanced age and chronic illness, the life expectancy of a patient with colorectal cancer becomes less dependent on the malignant disease. Justifying major surgery for these patients can be challenging. The objective of this retrospective cohort study was to determine factors significantly influencing mortality in the elderly following elective colorectal surgery from which a pre-operative scoring system could be devised.

Methodology: Data was analysed for 1267 patients aged 70 and above who underwent elective surgery for colorectal cancer at Singapore General Hospital from 1 January 2005 to 31 December 2012. A multivariate model predicting overall survival was derived and validated against an equivalent external surgical cohort of 910 patients from Kyungpook National University Chilgok Hospital, South Korea.

Result: Factors significant for predicting overall mortality were serum albumin < 35 g/dL, serum carcinoembryonic antigen ≥ 20 $\mu\text{g/L}$, T stage 3 or 4, moderate tumour cell differentiation or worse, mucinous histology, rectal tumours, and pre-existing chronic obstructive lung disease. Advanced age per se was found not to be significant. The Singapore cohort exhibited a poorer overall survival, likely due to a higher proportion of advanced cancers. Despite the survival differences, there was successful validation of the model following recalibration. An interactive online calculator was designed to facilitate post-operative survival prediction (http://bit.ly/sgh_crc).

Conclusion: This novel scoring system generates an individualised survival probability following major colorectal resection and can simplify the decision-making process between surgeons and their patients. Validation with an external Asian population strengthens the generalisability of this model.