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Meeting abstract

Prediction of morbidity after gastrectomy for gastric adenocarcinoma using logistic regression analysis

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Background
Surgical morbidity after gastrectomy remains high in some institutions. In a recent report, we reported a simple method to predict the probability of complications after gastrectomy. However, we did not stratify the severity of surgical morbidity. Therefore, the aim of this study was increase the sample size, to define the major determinants of surgical morbidity and to develop a computer model to predict the probability of complications after gastrectomy for GC.

Methods
A retrospective cohort of patients with GC who underwent gastrectomy in a 18-year period was studied. Analysis of those factors associated to surgical morbidity and mortality were performed using logistic regression methodology.

Results
A total of 331 patients were included, 161 females and 170 males (mean age 56.5 years, SD13.1). Surgical morbidity was recorded in 126 (38%) patients. Surgical morbidity requiring a medical or surgical intervention was reported in 81 cases (24.4%), including 21 cases (6.3%) of operative mortality. Serum albumin, age more than 40 years, male gender, total gastrectomy and operative bleeding were significant determinants of surgical morbidity. Estimators of this model are shown in Table 1 (p = 0.00001). Total gastrectomy, male gender, serum albumin and surgical bleeding were determinants of severe complications. (p = 0.0001). Total gastrectomy, surgical bleeding and the interaction of lymphocyte count by serum albumin are significant predictors of surgical mortality (p = 0.0001).

Conclusion
The event of surgical mortality should be regarded as a complex phenomenon associated with the interaction of various events. We are proposing to use a simple computer program based on multivariate analysis to calculate the probability of the event of surgical morbidity or mortality. This method should be tested in other institutions to assess its performance before it can be used in the decision-making process.

Table 1: Multivariate analisis of factors associated to the event of surgical morbidity (p = 0.00001)

Factor	β	S.E.	*p*	β (exp)	95% CI
Serum Albumin			0.034		
2.9 g/dL or less	0.772	0.307	0.012	2.165	1.19–3.95
3 to 3.49 g/dL	0.063	0.309	0.84	1.065	0.58–1.95
3.5 g/dL or more	-	-	-	1	-
Gastrectomy					
subtotal	-	-	-	1	-
total	0.956	0.255	0.0001	2.6	1.58–4.29
Age					
39 or less	-	-	-	1	-
more than 40	0.847	0.394	0.032	2.333	1.07–5.05
Gender					
Female	-	-	-	1	-
Male	0.447	0.245	0.069	1.563	0.966–2.53
Surgical bleeding (ml)	0.001	0.0001	0.031	1.001	1–1.001

β =; S.E. = standard error; p = probability value of the odds ratio; β (exp) = beta exponent or odds ratio; CI = confidence interval