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Prediction of mortality of APACHE-II and APACHE-III scores in patients admitted to the intensive care unit (ICU) for intoxication

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Objective

To study the characteristics and mortality in intoxicated patients admitted to the ICU, and prediction of mortality for usual prognostic indexes.

Methods

A multicenter study conducted from 2008 to 2013 in three Spanish hospitals. We collected clinical and demographics data. The differences between observed-to-predicted mortality were analyzed whith the Hosmer-Lemeshow test. Discrimination was evaluated by área under the ROC curve. $P < 0.005$ was statistically significant.

Results

We studied 119 patients. Mean age: 44.42 ± 13.85 years. Drug intoxication in 77.3% of patients, alcohol in 16.8% and caustic 9.2%. 78.3% was a suicide attempt. The mean Glasgow Coma Scale in 72.5% were < 8 points. 69.7% required mechanical ventilation. The mortality of patients hospitalized for caustic ingestion was 54.5% and 1.9% in the rest ($p < 0.001$).

The multivariate analysis showed that with SAPS-3 equal gravity (OR: 1.19 (1.02-1.39)) the mortality of patients who ingested caustics was higher (OR: 560.34 (11.64-26.973.83)) than the rest.

The mortality predicted by SAPS-3 (general equation) was 26.98% and the observed 6.7%, Hosmer-Lemeshow ($H = 36.47$) ($p < 0.001$). With the APACHE-II and APACHE-III scores no statistically significant differences were observed, being the predicted mortality for APACHE-II of 7.57% (Hosmer-Lemeshow Test: $H = 6.96$, no difference is) and for APACHE-III of 8.15% (Hosmer-Lemeshow Test: $C = 3.51$, not discrepancies).

Conclusions

APACHE-II and APACHE-III scores may adequately predict the probability of death in intoxicated patients, in contradistinction to the SAPS-3 score that overestimates the mortality. The ICU admission by intoxication is rare. A high percentage of patients have decreased level of consciousness and required mechanical ventilation. The mortality o f patients hospitalized for caustic ingestion is higher to the rest.

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