



TITLE: FACTORS RELATED WITH SURVIVAL AT 7 DAYS IN DOGS AFTER EMERGENCY ADMISSION – THE RICO SCORE STUDY

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Objectives of the study:

The main objective was to find variables potentially associated with survival or death in canine patients at 7 days after admission as emergencies.

Materials and Methods:

This study is part of a multicentric study called RICO Score Study – Rapid Intensive Care Score Study, developed at six veterinary (private and university) hospitals in Europe and South America. Eleven clinical and twenty eight laboratorial variables were determined in a total of 422 canine patients upon admission at the emergency service and 24 hours later in survivors. Patients with less severe injuries/diseases were excluded. Statistical tests (Levene's ,T-Student test, χ^2 , ANOVA) were performed to establish which of the measured variables are related with survival at 7 days after admission. In addition, results were used to create *decision trees*, which are used to stratify, predict and identify all possible interactions between the different variables.

Results:

The following parameters were significantly associated with survival 7 days after the emergency approach (variables labeled 24h were determined 24h after admission): Age (p=0,001); Heart Rate (p=0,014); Respiratory Rate (p=0,014); Hematocrit (p=0,001); Hemoglobin (p=0,003); Platelet Count (p=0,000); Creatinin (p=0,038); BUN (p=0,019); **Lactate (p=0,04)**; Venous PCO₂ (p=0,037); Heart Rate 24h (p=0,003); Respiratory Rate 24h (p=0,027); Hematocrit 24h (p=0,000); Hemoglobin 24h (p=0,002); Platelet Count 24h (p=0,028); Creatinin 24h (p=0,035), BUN 24h (p=0,019); **Lactate 24h (p=0,015)**; Venous HCO₃⁻ 24h (p=0,012); Base Deficit 24h (p=0,011); total number of diagnosis (p=0,000); GGT (p=0,022); Mucous Membrane Colour (p=0,01); Mucous Membrane Colour 24h (p=0,001). Survival at 7 days was also significantly related with the presence of renal failure (p=0,029), cardiac failure (p=0,033), cancer (p=0,001), and also with the type therapy given (surgical or medical) (p=0,004) and the organic system affected (p=0,000). "*Decision trees*" were created for the most significant variables (see discussion)

Discussion:

All the parameters cited in the "results" section were significantly related, as independent factors, to 7 day survival as the primary outcome. Most of them were significant both when measured at the emergency room (T0) and 24 hours after the emergency approach (T24). We used these variables to create a statistical decision tree, and we observed that the organic system affected by disease was the factor with a strongest association with survival at 7 days (highest survival rates for endocrine, gastroenteric, urinary and orthopedic alterations). Respiratory rate (less than 30 rpm), platelet numbers ($\leq 457.000/\text{mm}^3$), and a 18 point Glasgow Coma Scale were all associated with a better survival index. In patients with respiratory, cardiovascular or mixed diseases (more than one organic system affected), a lactate level lower than 3,2 mmol/L was related with higher survival rates.

Conclusions:

We concluded that several physical and laboratorial findings are statistically related with survival at 7 days after the initial emergency approach in canine patients, and could thus potentially be considered as prognostic factors for predicting survival probability in emergency patients.

Type of presentation-Preference (Final decision about type of presentation will be taken by EVECCS):

ORAL :

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