

Category : **Electrolyte disorders**

A153 - Critical and alert value with pH lower than 7.2

M De la Torre-Prados¹; **A García-de la Torre**²; **J Diaz-Ojeda**³; **MC Navarrete-Ortiz**⁴; **C Ortiz-García**²; **P Trillo-López**⁵

¹Facultad de Medicina, Universidad de Málaga, Departamento de Medicina, Málaga, Spain, ²Hospital Universitario Virgen de la Victoria, Laboratorio de Análisis Clínico y Bioquímica, Málaga, Spain, ³Hospital Universitario Regional, Servicio de Tecnología de la Información y Comunicaciones, Málaga, Spain, ⁴Fundación Pública Andaluza para la Investigación de Málaga en Biomedicina y Salud (FIMABIS), Instituto de Investigación Biomédica de Málaga (IBIMA), Málaga, Spain, ⁵Hospital Universitario Regional, Estrategia Seguridad Paciente Sistema Sanitario Público Andaluz, Málaga, Spain

Introduction:

The generation of an automated alert in Laboratory Information System (LIS) addressed to the applicant after validation critical pH value (CpHV) <7.2 would ease optimal clinical performance.

Methods:

Intervention study with Phase 1 or historical control from 1 / 2018 to 12 / 2018, including ward area and emergency patients > 14 years and CpHV <7.2. Demographic, clinical and time variables were recorded in different clinical actions. The program used for data processing, descriptive and comparative statistical analysis was carried out with SPSS version 20.0, according to the nature of variables and study objectives. Project approved by the Ethics and Research Committee

Results:

Of 46,141 values performed in the emergency laboratory, 872 (4.37%) had CpHV<7.2; 165 samples were randomly. 58.2% were male and 68.9 years ± 15.27 years. The location with the 1st CpHV<7.2 was Emergencies 59.4%, (n=98), Critical Area 29.1% (n=48) and ward area 11.5% (n=19). The pathology (P) related to CpHV<7.2 was Cardiac P (28.5%, n=47), Sepsis (14.5%, n=24), Respiratory P (14%, n=23), Digestive (12%, n=20) and other P (31%). Mortality was 45.5% (n=75), it had differences with 1st CpHV healthcare area: Critical Area 74% (n=23) vs Emergency 40% (n=39), Chi2=23.3, p=0.001; age: 74.6 years vs. 64 years, 95% CI 6.01-14.9, T-t=4.6, p<0.001; Charlson: 5.3 vs 3.8, 95% CI 0.78-2.1, T-t = 4.2, p<0.001; SOFA: 9.4 vs. 5.5 95% CI 2.84-4.88, T-t=7.4, p<0.001; number of dysfunctional organs: 3.6 vs. 2.4, 95% CI 0.81-1.56, T-t = 7; p<0.001; pH repetition delay: 7.3 vs 6.7 hours, p=ns; delay first clinical performance: 2.6 vs. 1.5 hours, p=ns.

Conclusion:

It can be stated that pH <7.2 should be included as a critical value parameter in the LIS in order to improve the different therapeutic actions and the survival of these patients, mainly in time-dependent pathologies.

References:

Escobar GL, et al. N Engl J Med 2020; 383:1951-1960. DOI: 10.1056/NEJMSa2001090