



TEMPORAL RISK FACTOR ANALYSIS FOR ACUTE KIDNEY INJURY

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Abstract

Acute kidney injury (AKI) is a condition frequently experienced by patients in intensive care units (ICUs) that is associated with increased morbidity and mortality. We defined AKI using the guidelines set by the Kidney Disease Improving Global Outcomes foundation's urine output criteria. Using the MIMIC-III data set, a freely accessible critical care database (Johnson AEW, Pollard TJ, Shen L, Lehman L, Feng M, Ghassemi M, Moody B, Szolovits P, Celi LA, and Mark RG. Scientific Data (2016). DOI: 10.1038/sdata.2016.35) we extracted data from 53,432 adult patients admitted in an intensive care unit. From this data, we derived 26 time series of variables that could be considered as predictive features. We conducted a risk factor analysis to understand how the significance of these features change over time. For each of the first twelve hours in which a patient was admitted into the intensive care unit, we used Chi-squared and Kruskal-Wallis H tests to determine the significance of these features with respect to the patients' stage of AKI within the next 6, 12, 24, 36, 48, and 72 hours.

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