



# Decrease in platelets in patients with AKI and its association with major adverse kidney events

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## Abstract

A reduction in platelet count in critically ill patients has been associated with a worse prognosis, but it is not yet known whether this relationship also exists in patients with acute kidney injury, who are more susceptible to platelet decrease due to the syndrome or due to the onset of hemodialysis. In our study of acute kidney injury patients, we found that those whose platelet count decreased >21% during the first days were more likely to experience a major kidney event. In addition, the greater the decrease in platelet count was, the more likely these events were to occur. The significance of this association was lost in patients who start hemodialysis. Our conclusions could serve to generate hypotheses about this interesting relationship.

## Results

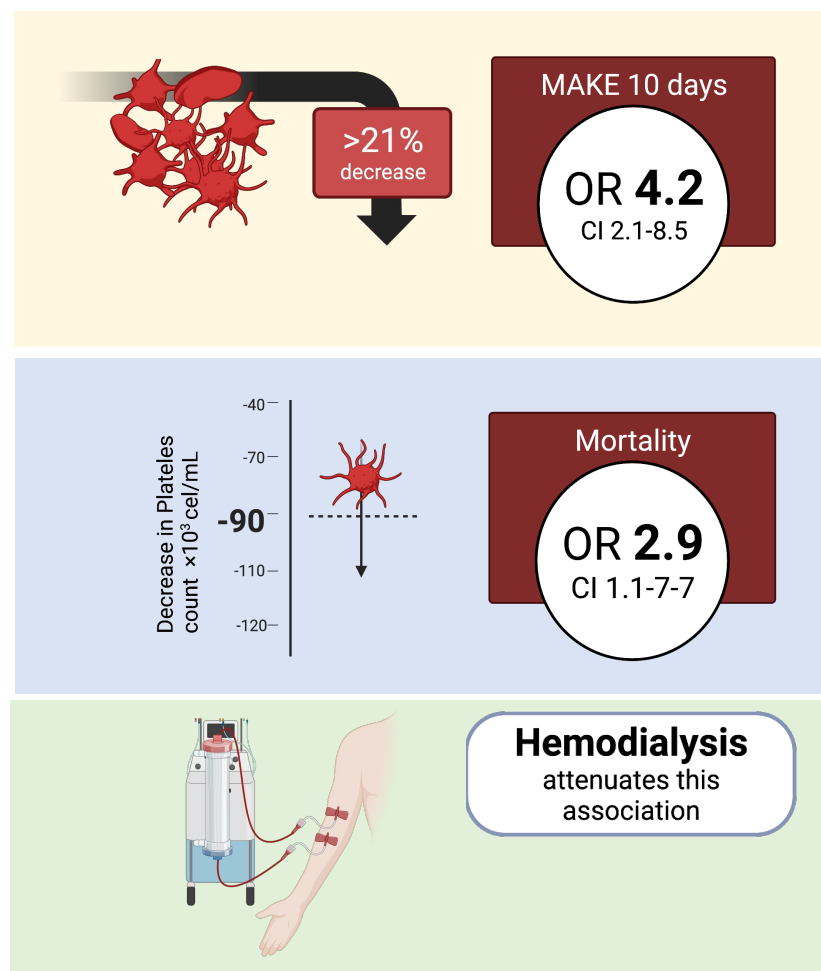
From 2017 to 2023, 400 AKI patients were included, 134 of whom had a >21% reduction in platelet count. The mean age was 54 years, 60% were male, and 44% had sepsis. The mean baseline platelet count was 194 x 10<sup>3</sup> cells/uL, and 65% of the KDIGO3 patients met these criteria. Those who underwent hemodialysis (HD) had lower platelet counts. After multiple adjustments, a platelet reduction >21% was associated with MAKE10 (OR 4.2, CI 2.1-8.5) but not with MAKE30-90. The mortality risk increased 3-fold (OR 2.9, CI 1.1-7.7, p= 0.02) with a greater decrease in the platelets (<90 x 10<sup>3</sup> cells/uL). As the platelets decreased, the incidence of MAKE was more likely to increase. These associations lost significance when accounting for starting HD.

## Introduction

A reduction in platelet count in critically ill patients is a marker of severity. However, whether this association holds true in acute kidney injury (AKI) is unknown. We analyzed the association between platelet reduction in patients with AKI and major adverse kidney events (MAKE)

## Methods and Materials

In this retrospective cohort, we included AKI patients at the Hospital Civil of Guadalajara. Patients were divided according to whether their platelet count fell >21% during the first 10 days. Our objectives were to analyze the associations between a platelet reduction >21% and MAKE at 10 days (MAKE10) or at 30-90 days (MAKE30-90) and death



## Conclusions

In our retrospective cohort of patients with AKI, we found that a >21% reduction in platelet count during the first days of hospitalization was associated with MAKE. Our findings are useful for generating hypotheses and motivate us to continue studying this association in a larger population with a more robust design.



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