



Blood transfusion reactions and risk of acute kidney injury and major adverse kidney events



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Abstract

Adverse reactions during the transfusion of blood products can be mild or severe; they have been associated with increased risks of organic complications such as lung, cardiovascular or circulatory complications, but this association has not been investigated in the kidney. In this cohort, we identified that patients who had a transfusion reaction were older and had more comorbidities than those who had a 2-fold increased risk of developing acute kidney injury and the composite of major kidney events during follow-up.

Results

From 2017 to 2021, 81,635 patients received a blood product transfusion, and 516 patients were included. The most common transfusion was red blood cell packaging (50.4%), fresh frozen plasma (28.7%) and platelets (20.9%); of those, 129 (25%) had transfusion reactions. Patients who had transfusion reactions were older and had more comorbidities. The most common type of transfusion reaction was allergic reactions (70.5%), followed by febrile nonhemolytic reactions (11.6%) and anaphylactoid reactions (8.5%). Most cases were considered mild. AKI was more prevalent among those who had transfusion reactions (14.7%) than among those who did not (7.8%), $p < 0.01$; those with AKI had a higher frequency of diabetes, vasopressors, and insulin use. Transfusion reactions were independently associated with the development of AKI (RR 2.1, $p < 0.02$). Major adverse kidney events were more common in those with transfusion reactions. The mortality rate was similar between subgroups.

Introduction

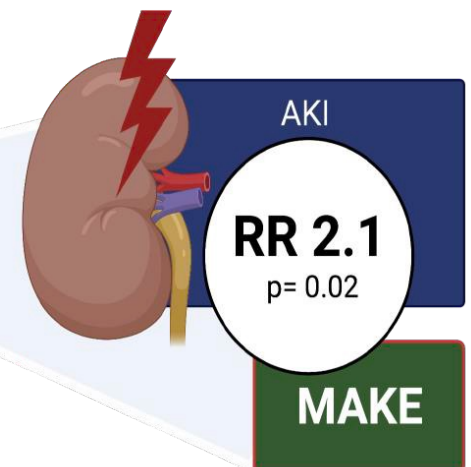
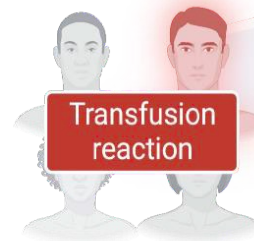
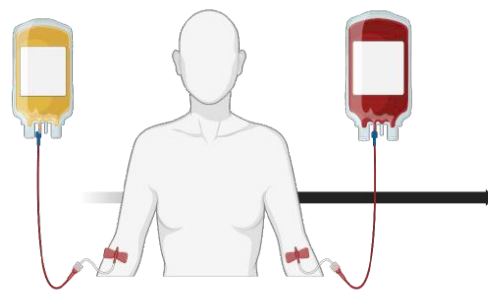
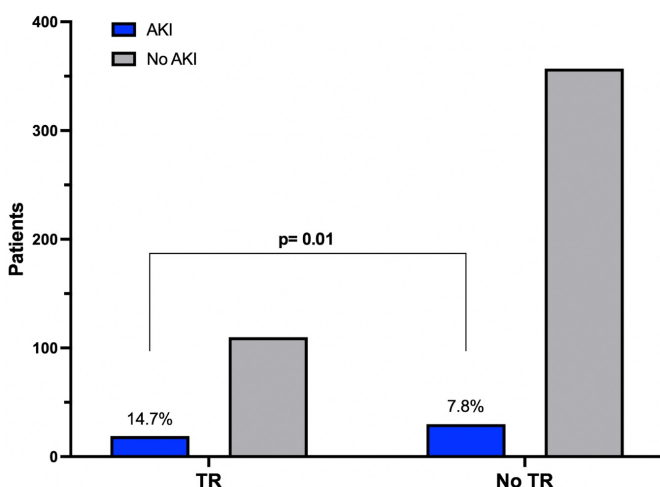
Blood transfusion reactions may have a negative impact on organ function. It is unknown whether this association holds true for acute kidney injury (AKI). Therefore, we conducted a cohort study to assess the association between transfusion reactions and the incidence of AKI and major adverse kidney events.

Methods and Materials

In this retrospective cohort study, we included patients who received transfusion of blood products during hospitalization at the Hospital Civil of Guadalajara. We analyzed them according to the development of transfusion reactions, and the aim was to assess the association between transfusion reactions and AKI during long-term follow-up.

Conclusions

In our retrospective cohort of patients who received blood product transfusions, 25% experienced transfusion reactions, and this event was associated with a 2-fold increase in the probability of developing AKI and some of the major adverse kidney events during long follow-up.



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