Introduction:
Early identification of patient’s deterioration on wards and appropriate Rapid Response Team (RRT) response have been implemented in many healthcare facilities. However, the impact of delays in patient transfer to the Intensive Care Unit (ICU) after an RRT assessment was poorly studied. Our aim was to assess time from RRT activation to ICU admission (RRT-ICU time) and study its impact on clinical evolution.

Methods:
We conducted a retrospective study between January and August 2019 including patients admitted from wards to ICU, after RRT activation, in a University Hospital. RRT-ICU time was measured, physiological/clinical parameters were collected and mortality was assessed. We considered 2 hours as the cutoff time between early and late admission.

Results:
We enrolled 119 patients, 57.1% male, median age 69 years, APACHE II 21, SAPS 43, RRT-ICU time 4 hours, 86.1% medical admissions, 37.8% sepsis/septic shock. ICU and hospital mortality were 22.6% and 34.0%. Comparing early (E,n=30) and late (L,n=76) admission groups, there were no statistically significant differences between mean SAPS II (44.53 vs 41.77, p=0.523), APACHE II (21.00 vs 21.49, p=0.564), sepsis/septic shock (46.7% vs 40.8%, p=0.581) or admission motive. There were no differences between ICU length of stay (5.5 vs 6.0, p=0.332), hospital length of stay (24.5 vs 24.5 days, p=0.997), ventilation days (0.0 vs 0.0, p=0.881), vasopressors days (0.5 vs 0.0, p=0.770), and ICU mortality (13.3% vs 26.3% p=0.150). There was a clear but not statistically significant difference in hospital mortality between E and L groups (20.0% vs 39.5%, p= 0.057). Regarding the assessment at admission and 72 hours, differences were found between E and L groups for bilirubin (-16.6% vs 6.6%, p=0.002) and lactate (-44.8% vs -21.1%, p=0.011) variation.

Conclusion:
Our study suggests that delays in patient transfer to the ICU after RRT activation in the wards were associated with slower physiological improvement. These findings support further and larger studies.