Introduction:
The intention of this study is to highlight the levels of citrate load for the general population that increases the risk of citrate complications (insufficient trisodium citrate delivery; net citrate overload and citrate accumulation).

Methods:
This was a prospective data collection between February and March 2019 in a fourteen bedded Critical Care Unit. Eleven consecutive episodes of CRRT were collected (a new episode characterised if CRRT was discontinued for 48 hours and above). One episode was excluded due to short duration (less than 4 hours). Patients undergoing RCA-CRRT received either a fixed 25 or 35 ml/kg/h effluent dose protocol.

Results:
Median patient age was 59, male 100%. Average time on CRRT was 4.1 days (2-9). 70% of the patients had complications, although 60% were minor (Figure 1). All of the patients with net citrate overload had citrate loads of 13.8mmol/h or above. The main risk factors were found to be shock and liver impairment which occurred in 60% of cases of which 40% developed complications.

Conclusion:
A fixed dose effluent protocol to standardise practice can potentially lead to a higher risk of minor complications. In our experience this is likely due to a lack of appropriate monitoring for RCA-CRRT complications. Despite this, our complication rate of citrate accumulation is in line with that reported in literature. Citrate loads in our 25ml/kg/hr protocol were 22.6% higher than our 35ml/kg/hr protocol and strongly related to higher complication rate that worsened in patients with risk factors for poor citrate metabolism.

References:
Morabito S et al. Regional Citrate Anticoagulation for RRTs in Critically Ill Patients with AKI, CJASN, 2014; 9 (12), pp. 2173-2188