Introduction:
There is no optimal timing of continuous renal replacement therapy (CRRT) in acute kidney injury (AKI); however, it is based on volume overload, azotemia, hyperkalemia and severe metabolic acidosis [1]. An important reason for metabolic acidosis in AKI is increased unmeasured anions (UA) [2]. Delta-pH-UA ($\Delta$ pH-UA) detects the degree of metabolic acidosis caused by UA and is calculated by using ‘The Partitioned pH Model’ [3]. In this study, we investigated whether $\Delta$ pH-UA was a predictor to start CRRT in patients with AKI.

Methods:
The study was designed as a multicentric, prospective, observational study in 2019. Patients who were ≥18 years old and diagnosed with AKI [1] were included. The moment AKI was diagnosed, arterial blood gas, albumin, magnesium, inorganic phosphorus, urea, creatinine and $\Delta$ pH-UA values were recorded. All patients were divided into two groups as CRRT(-) and CRRT(+) which consists of patients performed CRRT due to traditional criteria.

Results:
90 of 709 patients (12.7%) were diagnosed as AKI. CRRT rates in stage I, II and III AKI were 0.2% (1/41), 47.1% (16/34) and 100% (15/15) respectively. When patients with stage II were evaluated, the only parameter which was significantly different between CRRT(+) and CRRT(-) was $\Delta$ pH-UA (-0.124±0.076; -0.054±0.048) (p=0.001). Likewise, the only parameter which had significant UAC value to predict starting CRRT was also $\Delta$ pH-UA (for $\leq$ -0.083; 0.82 [0.67-0.97]) (p=0.002). In the logistic regression model, the likelihood of starting CRTT was increased 25-fold (3.5-169) by only $\Delta$ pH-UA $\leq$-0.083 (p=0.001).

Conclusion:
$\Delta$ pH-UA is prominently negative in patients with AKI performed CRRT and the only decisive parameter in stage II AKI in which clinicians have difficulty in deciding whether to start CRRT. Hence, we think that $\Delta$ pH-UA may be a promising parameter to detect the optimal timing of CRRT in AKI.

References:
1. KDIGO Guideline. 2012 Vol 2 Suppl 1