CRRT DOSE PREDICTOR, A NOVEL APP TOOL

Pablo E. Galindo, Mauricio Moreno Yañez, Armando Jezael Martinez-Rueda, Ricardo Correa-Rotter, Olynka Vega-Vega

Departamento de Nefrología y Metabolismo Mineral, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubiran, Mexico City, Mexico

INTRODUCTION

Managing CRRT involves above many other things:

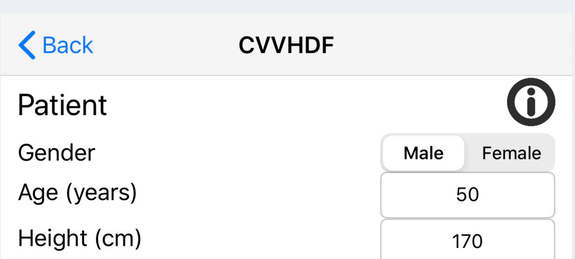
1. Choosing a type of anticoagulation
2. Prescribing a dose according to modality and metabolic needs
3. Measuring a real delivered dose

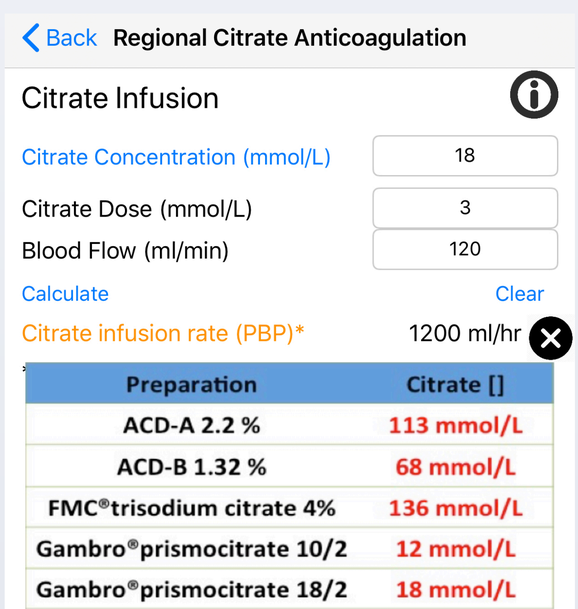
This makes CRRT complex to understand, prescribe, evaluate and predict. The development of a simple, accurate, and accessible tool could be of great value for clinicians in contact with CRRT.

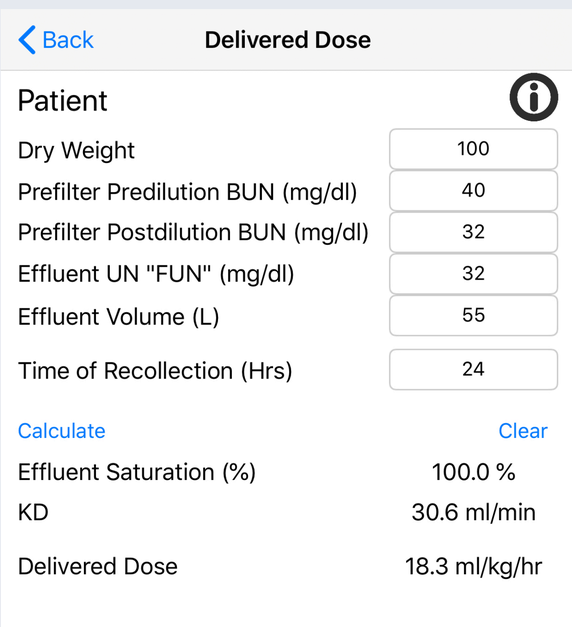
METHODS

We developed a free APP for IOS and Android (Adequator®) that includes three CRRT calculators:

1. Dose predictor: Predicts a delivered dose with a desired therapy
2. Measured delivered dose calculator
3. Regional citrate anticoagulation calculator

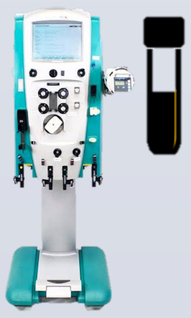






We evaluated 15 CVVHDF treatments, and ran 50 dose evaluations measuring effluent volume and BUN at 3 different sites, every 12 hours.

We then compared the measured delivered dose with the results of the predicted delivered dose.



- Pre-dilution
- Post-dilution
- Effluent

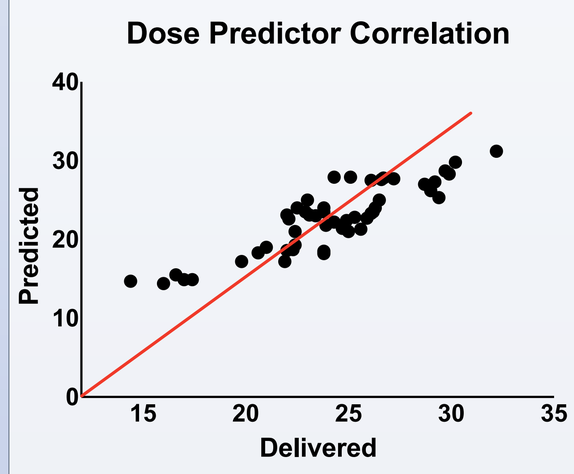
DELIVERED DOSE

VS

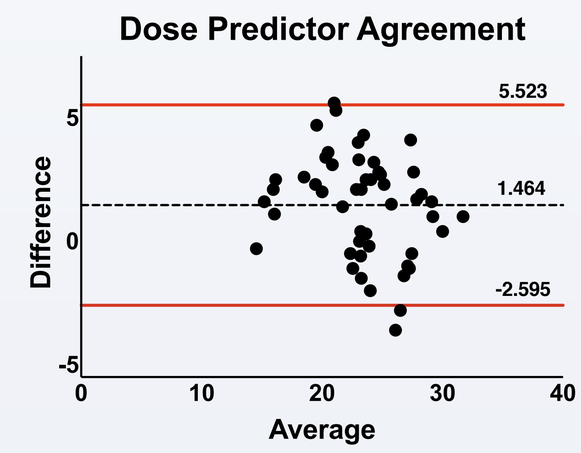
- Center average down-time, 2.2 h
- 99% Effluent saturation

PREDICTED DOSE

RESULTS

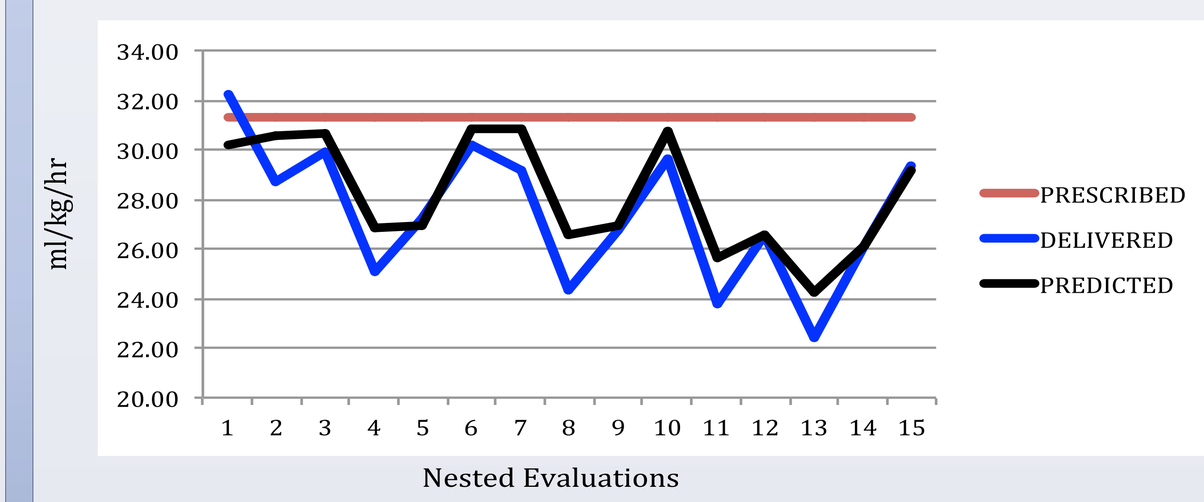


r =0.87, 95% CI= (0.79 - 0.92), R^2=0.77 P: <0.0001



Bias= 1.4, SD of Bias 2.0, 95% LA (-2– 5.5)

PATIENT 1: PRESCRIBED, DELIVERED AND PREDICTED DOSE



CONCLUSIONS

- The Adequator® can predict accurately the delivered dose before the treatment is given to a patient, and accurately simulate different prescriptions.
- The measured delivered dose and the regional citrate anticoagulation calculators showed to be useful for calculating actual delivered dose and initial citrate infusion rates.
- The use of the three calculators can be very handy in the every day monitoring, prescribing and teaching of CRRT.

CONTACT AND DOWNLOAD

@galindozip
@adequator_app
galindozip@gmail.com