COMPARISON OF CIRCUIT COAGULATION AFTER AND BEFORE APPLICATION OF AN ANTI-CLOTTING FLOW-CHART. A RETROSPECTIVE MONOCENTRIC ANALYSIS.

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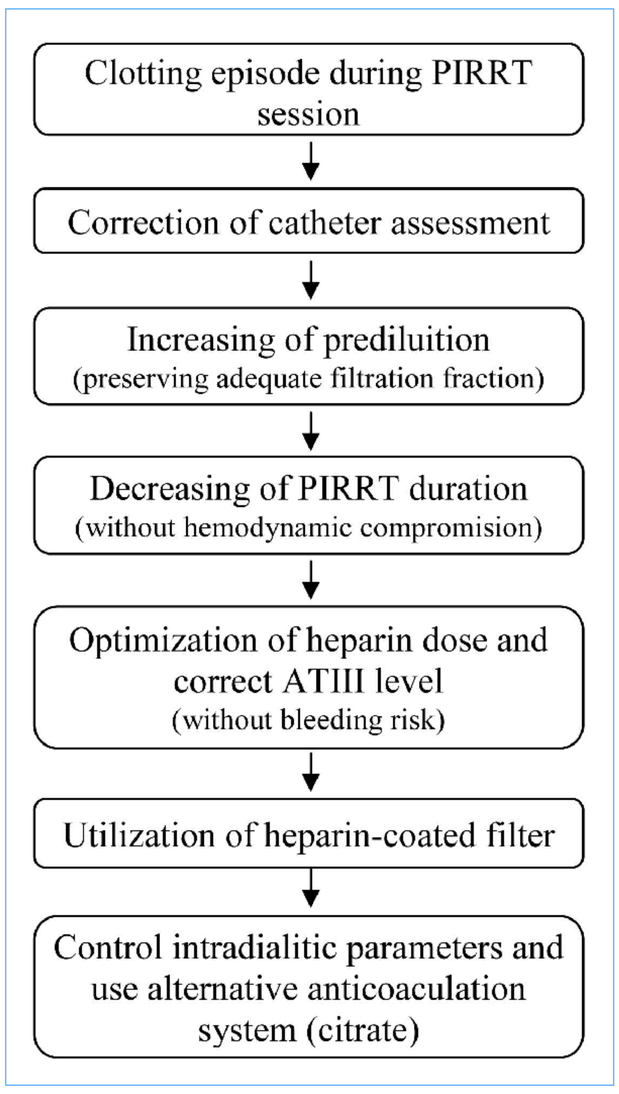
OBJECTIVES

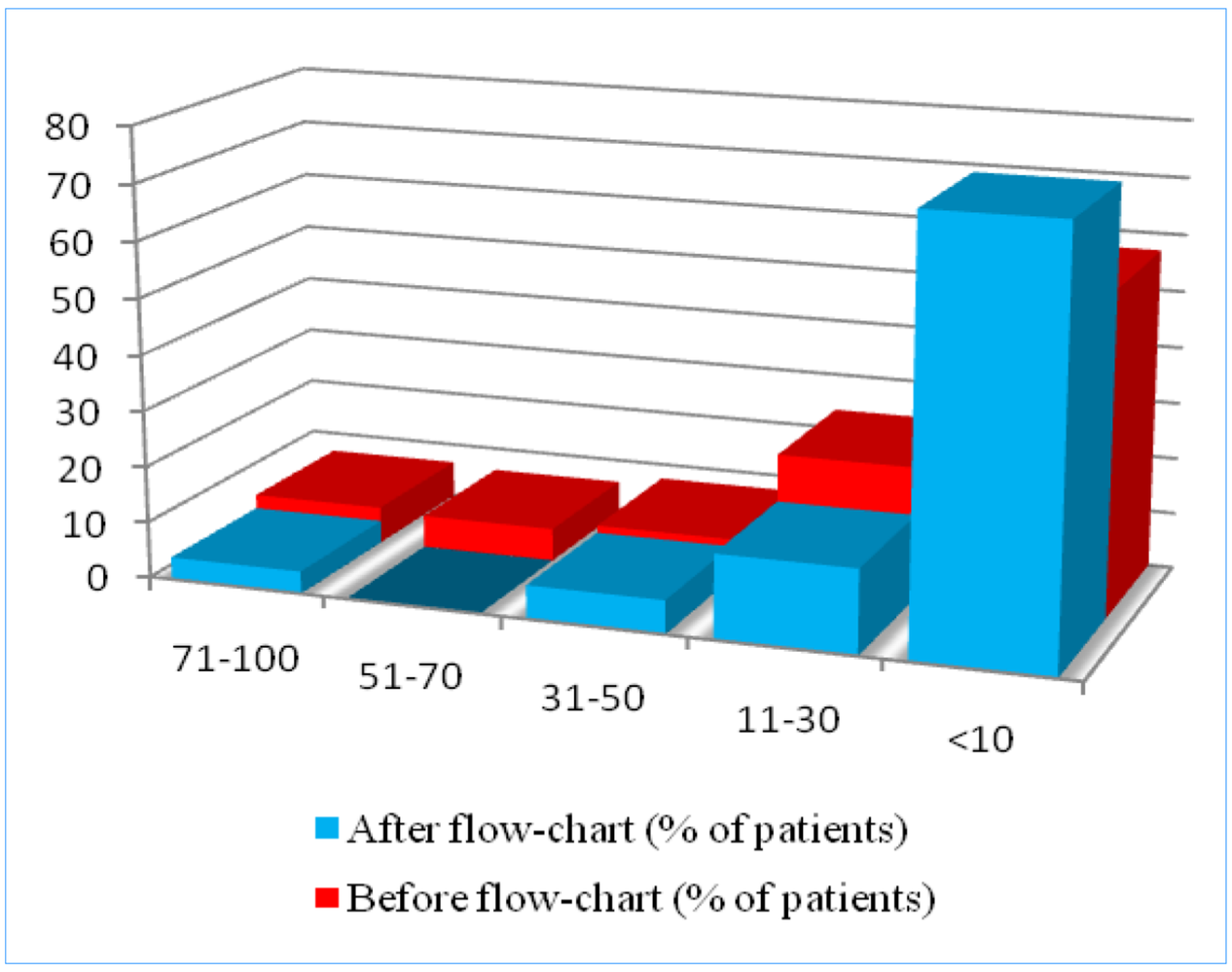
Premature circuit clotting is a key problem in AKI patients undergoing CRRT. **Prolonged Intermittent Renal Replacement Therapy (PIRRT)** represents a dialysis modality combining the detoxification and hemodynamic stability of CRRT with the advantage of conventional intermittent dialysis. However, an unpublished study in our Unit pointed out a coagulation rate of almost 50% of sessions, and tried to elaborate a **flow-chart to avoid circuit clotting and dialysis down-time** (figure 1).

This study aims to compare clotting episodes in two groups of AKI patients subjected to PIRRT, after the adoption of the anti-clotting flow-chart.



METHODS

A comparison between **(a) clotting episodes in all PIRRT performed in the period 2009-10** and **(b) a sample of PIRRT in 2011-12 in 100 consecutive patient hospitalized in 4 Intensive Care Units** (PIRRT characteristics: duration 8-12 hr, blood flow 200-250 ml/min, predilution 50-60%, no selection by filter membrane). The **clotting rate** in single patients was extrapolated, to highlight the improvement of treatment technique after the use of the flow chart. Differences were considered significant with P value <0.05 at chi-square analysis.



RESULTS

The 2 groups were comparable in terms of severity of illness (SOFA score), while sample sizes were different (1318 dialysis in 256 patients vs 898 in 100 patients), but compatible with the study's aim.

Patients characteristics were similar in both groups (68% vs 66% male; age 66.5 vs 59; septic patients 28% vs 20%).

An important difference between the two groups is the average number of dialysis sessions/patient (5 vs 9).

Coagulation rate decreased after adoption of the flow-chart: 11% in 2011-2012, vs 47% in 2009-10 ($p<0.0001$).

After the adoption of the anti-clotting flow-chart, the "**frequent clotters" (coagulation rate for patient>30%) decreased** from 19.6% to 10%, although non statistically significant ($p=0.056$).

CONCLUSIONS

Introduction of the anti-coagulant flow chart allowed to significantly reduce clotting rate, also in case of **sepsis and impossibility to standard heparinization of the circuit,** but it is still negligible.

This is a preliminary analysis, of about half treatment performed in our Unit. **The final aim will be to correlate the reduction of clotting rate to each point of the flow-chart.**

Although, to further reduce clotting incidence in PIRRT, it can be necessary o apply additional strategies, such as the **use of citrate**.

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DOI: 10.3252/pso.eu.50era.2013
Poster presented at: ERA-EDTA 50th Congress Istanbul, Turkey May 15-21, 2013
PosterSessionOnline.com