



THE DOREMIFA (DOSE RESPONSE MULTICENTER INVESTIGATION ON FLUID ASSESSMENT) TRIAL: FILTER AND CIRCUIT LIFESPAN IN CRRT



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Introduction and Aims

Acute Kidney Injury (AKI) requiring Renal Replacement Therapy (RRT) occurs in 5 to 6% of critically ill patients and is associated with high mortality and significant health resource utilization. However, there is not a uniform worldwide consensus on the management of RRT.

We performed a prospective observational multicenter study designed to evaluate how RRT is managed in the Intensive Care Units (ICU) all over the world.

Material and Methods

We developed a web-system for data-entry in order to collect data from 20 ICU centers around the world. On a follow-up of 1636 patients, 147 were treated with Continuous RRT (CRRT). We analyzed the duration of filters used during CRRT; downtime can be due to filter/circuit clotting, patient transport, vascular access malfunction, clinical problems or other reasons. In order to evaluate the lifespan related only to the type of anticoagulant used, we analyzed only filters replaced for clotting, excluding clinical procedures or complications.

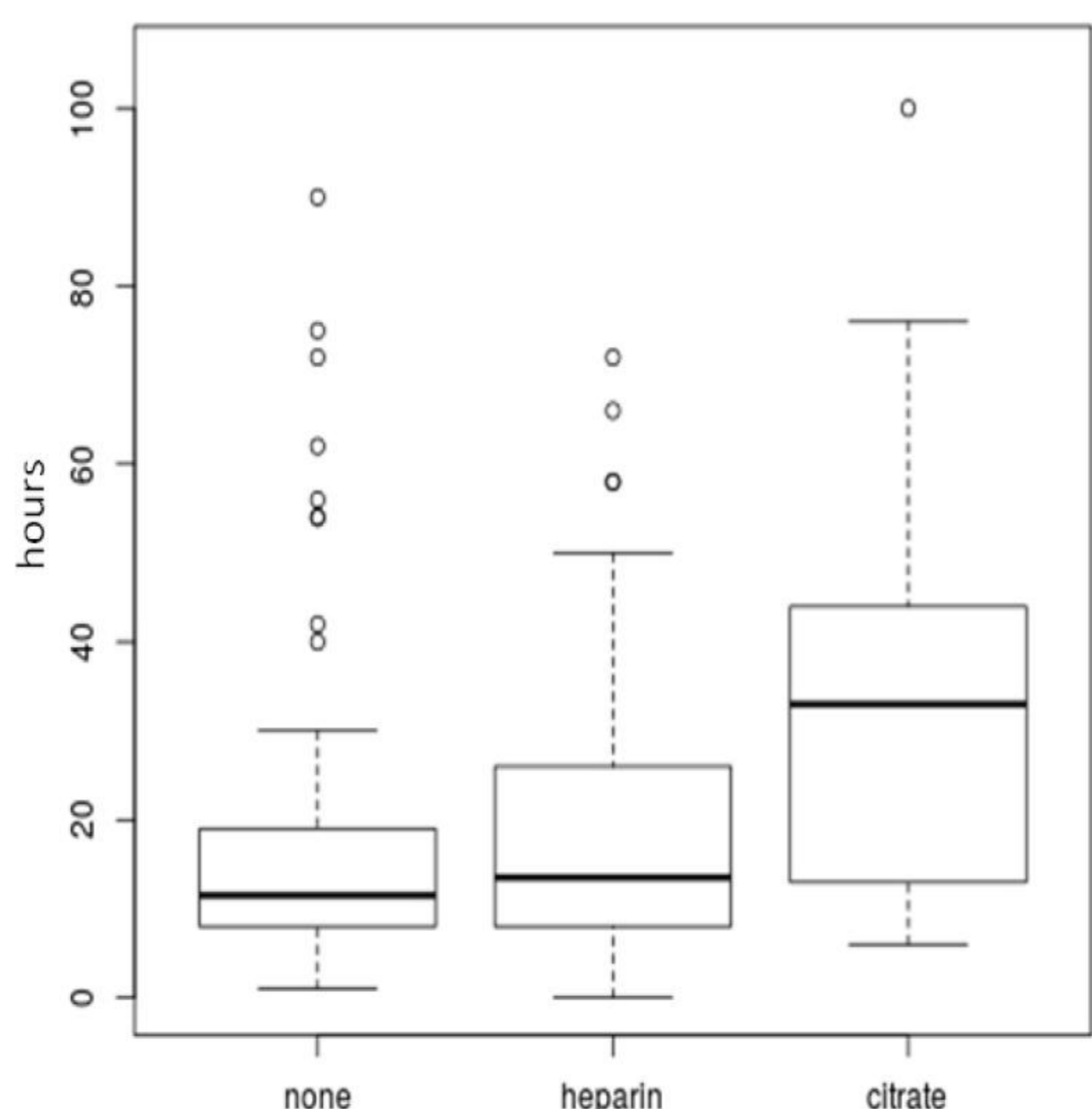


Figure 1. Box plot of the filters/circuits lifespan grouped by the anticoagulant type

Results

On a total number of 1118, we considered the 210 filters/circuits replaced because of clotting, according to the anticoagulant type: 40% none, 47% heparin, 21% citrate, 3% other. The median of filter/circuit life duration before the replacement is 11.5h for none, 13.5h for heparin, 33.0h for citrate (fig.1).

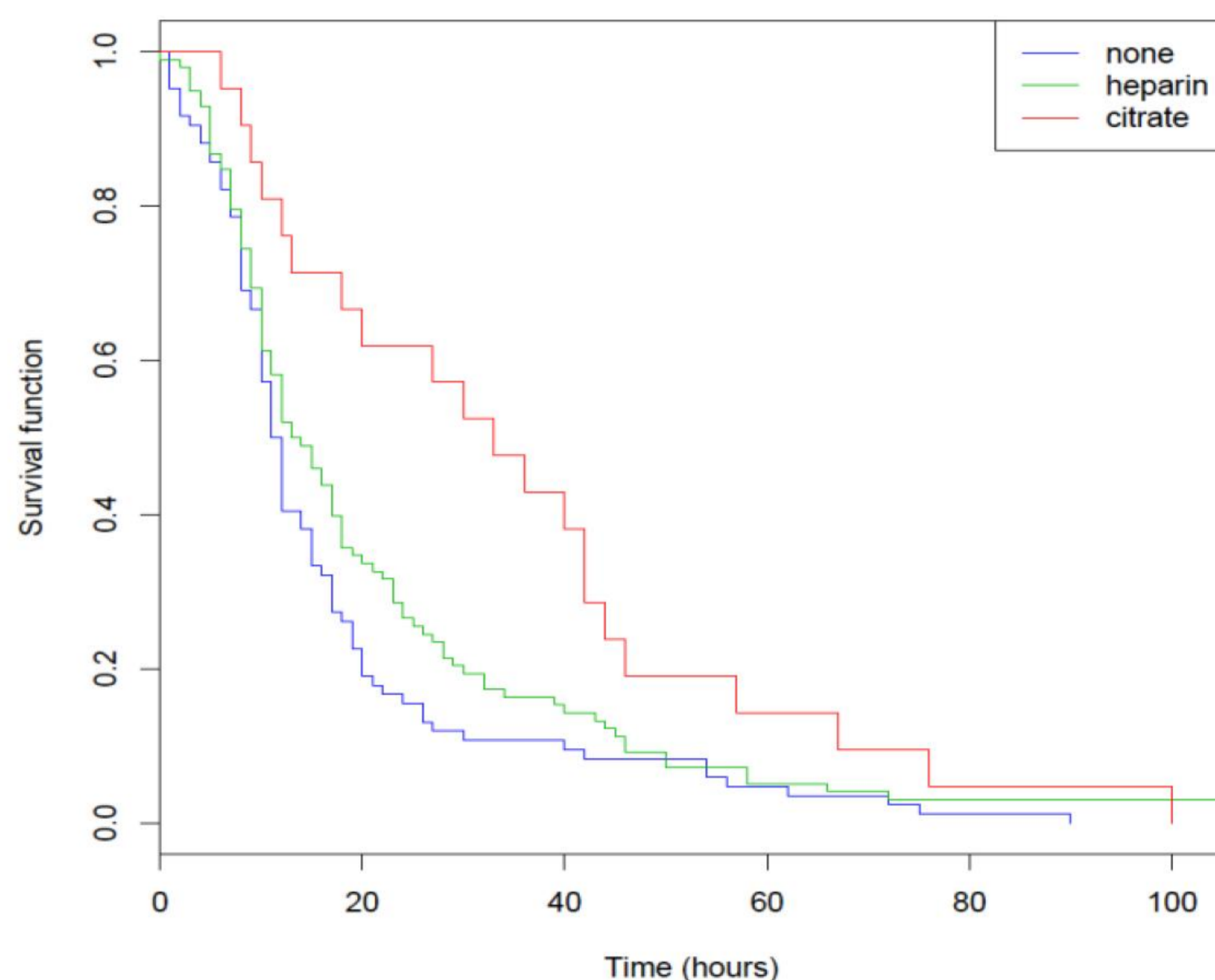


Figure 2. Survival curve of filters group by the anticoagulant type

Conclusions

We developed a multicenter database to understand more deeply the RRT management over the world. These preliminary data show a longer duration of filter/circuit life with citrate rather than using heparin or without anticoagulation. The survival curve chart (fig.2) highlights an higher efficacy in terms of treatment duration with citrate. The downtime decrease using citrate allows an adequate administration of the prescribed dose. Further investigations will be taken into account to analyze actual versus prescribed dose.

Figure 3. RRT section of the database: specific parameters regarding filters

Keywords: RRT, filter, anticoagulation

