Regional Citrate Anticoagulation During Coupled Plasma Filtration and Adsorption May Increase Survival in Septic Shock

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Dear Sir,

We thank Dr. Vassallo et al. for their interesting observations to our study in which we demonstrated that the outcome of a group of septic shock patients treated with the Coupled Plasma-Filtration and Adsorption (CPFA) was influenced by the volume of plasma processed (Vp), and not by the timing of initiation [1]. Dr. Vassallo et al. argue that the use of regional citrate anticoagulation (RCA) instead of intravenous heparin would increase the running time of the CPFA, and consequently the Vp, which is considered a proxy of the intensity of the treatment. Indeed, Dr. Vassallo's remark makes sense, considering that previous studies demonstrated (a) a dose-effect relationship between the Vp and the outcome, which is better when this variable exceeds 0.20 L/kg/session [2, 3], and (b) the superiority of RCA over intravenous heparin in patients undergoing renal replacement therapy in terms of duration of the extracorporeal circuit, systemic bleeding

and transfusion requirements [4]. Moreover, in septic patients undergoing extracorporeal treatments, finding the right dose of heparin can be challenging due to a number of conditions such as the presence of possible sources of hemorrhage, the low levels of Antithrombin III and the hypercoagulable state determined by the interaction between inflammatory mediators and coagulation factors [5]. For these reasons and a few citrate contraindications, RCA has been recommended even in the absence of an increased risk of bleeding [6]. Our group is well aware of these considerations, but RCA was not yet available in our Department at the time of the study. However, despite the well-known heparin-related shortcomings, we think that its mere replacement with RCA could hardly influence the outcome in septic patients who did not present with increased risk of bleeding. Actually, factors other than clotting can reduce the overall Vp, including the hemody-

namic instability, and perhaps more importantly, the interruption of the CPFA due to the need for surgical or diagnostic procedures that cannot be performed at the bedside. In addition, the recent COMPACT II study, which has been prematurely suspended due to an excess mortality rate in the treatment group, required the use of RCA instead of heparin during the CPFA [7, 8].

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