ECLS-Related Coagulopathy and Transfusion Needs are Reversed by Circuit Exchange

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**Background:** Coagulation is a major concern during ECLS. We have observed that thrombocytopenia and hypofibrinogenemia are usual manifestations of ECLS-related coagulopathy (ECLS-RC). We describe a case series of ECLS-RC that was managed by circuit exchange (CE).

**Methods:** Retrospective analysis from our ECLS cohort of patients who developed ECLS-RC and were managed with CE. ECLS-RC was defined as progressive thrombocytopenia and/or hypofibrinogenemia. The decision of CE was made on clinical grounds.

**Results:** From a total of 44 ECLS runs we found 6 patients with CE due to ECLS-RC; 2 A-V ECCO2R, 2 V-V ECCO2R, 2 V-V ECMO. Epidemiological data as median [IQR]: Age 65 [48-70], circuit run 13 [11-16] days, APACHE II 34 [20-34] and SOFA 9 [7-9] points. These patients developed a progressive decrease of fibrinogen levels (Figure 1A) and platelets counts (Figure 1B) that recovered after CE. A significant reduction of transfusion needs was also noted after CE (Figure 1C). Four patients had mucosal bleeding associated to ECLS-RC, the other two did not have clinical expression of ECLS-RC.

**Conclusion:** These data suggest that in ECLS-RC circuit exchange is associated with recovery of fibrinogen and platelets levels as well as a reduction in transfusion needs. Circuit exchange could be considered as part of the management of ECLS-RC if ECLS removal is not possible.
Platelets counts, Plts, x 10^4/ml (SEM)

Transfused units, U (SEM)

*p=0.016

*p=0.024

*p=0.035

*p=0.042

*p=0.028

A  
Days from exchange

B  
Days from exchange

C  
Transfused units, U (SEM)

*p=0.035

*p=0.042

*p=0.028