Workshop
Purification Therapies
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Purification strategies in ICU: Which is the potential candidate?

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INTRODUCTION

Extracorporeal removal of toxic molecules is a new field of critical medicine. Cytosorb is a new extracorporeal blood purification therapy composed of biocompatible sorbent with inert polystyrenic polymer that remove substances from whole blood, molecules sized in the 5-60 kDa range, based on pore capture and surface adsorption. This approach may be beneficial in many clinical settings.
We report our experience on patients who received Cytosorb therapy in our center.

METHODS

From April 2015 to December 2016, we collected data of patients that received Cytosorb treatment in a 14 beds Cardiac Surgery ICU at San Raffaele Hospital. Patients demographics, baseline characteristics and clinical indications are reported (Table 1)

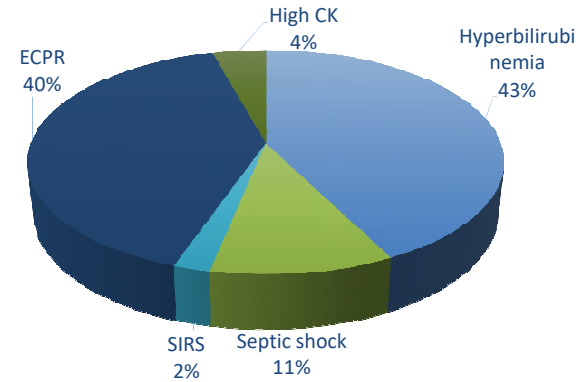
Table 1. Baseline Characteristics

Age (years) Median (SD)	54 (± 17)
Sex (n (%))	
Male	39 (82)
Female	8 (17)
Admission (n(%))	
Surgical	11 (23,4)
Medical	36 (76,59)

RESULTS

During the study period, 47 patients received treatment with Cytosorb. The average number of treatments was 4,29 filters and the median duration 5,4 days.

Reasons for treatment were: ECPR (19 patients 40,42%), VV ECMO (7 patients 14,89 %) sepsis or septic shock (5 patients 10,63%), hyperbilirubinemia (20 patients 42,55%), SIRS (1 patient 2,12%), increasing of CPK (2 patients 4,25%) and 6 patients with perfusion organ donation with NECMO (Normothermic Extracorporeal Membrane Oxygenation)



Overall 30 patients were treated with Cytosorb incorporated in an ECMO circuit (via luer lock connection at the oxygenator exit port and at the venous drainage Fig.2) and 17 patients (36,17%) with HP pump

Fig. 2

CONCLUSIONS

Cytosorb treatment has a potential role for many clinical settings in critical ill patients, in the light of its pleiotropic effects, especially as new therapies like ECMO and new strategies as DBD (Donors after Brain Death) and NECMO DCD organ donation are increasingly being applied. Further studies are required to validate this concept.