Title: Extracorporeal cytokine adsorption in cardiovascular intensive therapy unit

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Sepsis and multiorgan dysfunction syndrome result in high mortality despite advances in intensive therapy. Variations in etiology, whether induced by microbials or tissue injury, often result in similar pattern of deterioration, initiating common pathways and ultimately leading to hypercytokinemia. Hypercytokinemia is believed to be harmful and reducing cytokine levels is considered beneficial.

Extracorporeal blood purification techniques have been studied for purpose of cytokine reduction. One promising therapeutic option is extracorporeal cytokine adsorption. Via this technique, simultaneous reduction of inflammatory mediators could be achieved and that could, among others, restore responsiveness of deactivated monocytes and improve organ function. The goal here is to reduce the potentially lethal systemic inflammatory response that is present in life-threatening inflammatory conditions, which could help alleviate or even prevent fatal complications, such as organ failure, thereby improving patient outcome. This is achived by improving hemodynamic stability and reducing vasopressor use, reducing capillary leak syndrome by reversing fluid balance, removing many inflammatory mediators that can destabilize the patient, and preventing or treating multiorgan failure.

Besides using cytokine adsorption for complex heart surgery, where hyper-inflammation is expected, we also use it in critically ill and hemodynamically unstable patients in a state of shock, treated in our cardiovascular intensive therapy unit, who couldn't be stabilized by fluid infusion and pharmacological therapy. In these patients, hemadsorption works promisingly, as it contributes to faster repair of hemodynamics, with potential to lower vasopressor dose.

Hereby I present couple of cases of patients from our cardiovascular intensive therapy unit treated with extracorporeal cytokine adsorption after complex heart surgery.

Biography

Gordana Taleska Stupica has completed her School of Medicine and specialization in anesthesiology and perioperative intensive therapy, as well as Master studies in Anaesthesiology with reanimation, in Skopje, Republic of Macedonia. After nostrification of specialist diploma in Republic of Slovenia eight years ago, she works at University Medical Centre, Ljubljana as consultant in cardiovascular anaesthesiology and intensive therapy. Currently, she is completing her PhD in biomedical sciences at the Medical Faculty, University of Ljubljana, where she also works as an assistant at the Chair of Anaesthesiology. She holds the European Diploma in Anaesthesiology and Intensive Care, as well as European Certification in Transoesophageal Echocardiography.

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