

Therapeutic plasma exchange; variations on a theme.

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intensivist

Abstract

Therapeutic plasma exchange (TPE) is an established treatment modality, which can be easily applied in the intensive care unit (ICU). We discern two techniques: centrifugal plasma filtration, by which plasma is separated from whole blood by centrifugal force and membrane plasmafiltration. Membrane plasmafiltration can be easily performed on the conventional hemofiltration machine used for continuous venovenous hemofiltration, in the TPE mode with a special kit in combination with a large pore plasmafilter. Usually 1,5 times the calculated plasma volume will be removed in one session and replaced by a 5 % albumin/saline solution (70/30), fresh frozen plasma (FFP) in case of TTP, or an albumin-FFP mixture. The time interval between procedures and duration of the treatment sessions depend on the patient disease, volume of distribution of the particular substance and a given coagulopathy (1). Toxic substances or auto-antibodies can in this way be removed according to molecule mass and pore width of the filter, so determining the sieving coefficient of that particular substance. Production rate, metabolization rate and protein binding play also an Important role in the clearance of a specific substance. The complications of TPE vary from muscle cramps, urticaria and rarely anaphylaxis or transfusion related acute lung injury (TRALI). As medication is effectively erased from the body, therapeutic drug monitoring is essential (2).

Biograph :

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