Journal of Hepatology and Gastrointestinal Disorders

3rd International Conference on Hepatitis

November 10-11, 2022 Madrid, Aland Islands

ISSN: 2475-3181

Volume 8, Issue 5

Study of inflammatory markers in chronic kidney disease patients

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Abstract (600 Word limit):

Therapeutic plasma exchange (TPE) was first described as an extracorporeal blood purification technique more than a hundred years ago [1]. It removes pathogenic substances such as auto-antibodies, lipoproteins, and circulating immune complexes, from the plasma [2] and plays a key role in the management of various diseases. TPE can also replenish missing plasma components, e.g. ADAMTS13 in TTP, if fresh frozen plasma is used as exchange fluid. According to the 2016 guidelines of the American Society of Apheresis, it is the treatment of choice for acute ANCA associated rapid progressive glomerulonephritis, thrombotic thrombocytopenic purpura, Guillain-Barré syndrome, Goodpasture syndrome, and cardiac allograft rejection [3]. Treatment numbers are especially increasing in the transplant setting as the use of incompatible kidney transplantation is growing as a response to the organ shortage, hence more and more recipients of a live-donor kidney transplant as well as deceased donor organ need to be pretreated by TPE [4]. Periodically TPE treatment numbers are increasing in small epidemics such as the 2011 German STEC-HUS crisis. [5] Moreover, despite the lack of solid data, TPE is used in the intensive care setting for e.g. sepsis with multi organ failure or hypertriglyceridemia induced pancreatitis [6, 7] as it removes a plethora of pro-inflammatory cytokines [8].As the previous guidelines, the 2016 ASFA recommendations suggest using TPE volume of 1.0–1.5 x the plasma volume of the patient [3]. There are only a few exceptions to that rule such as acute macular degeneration as well as the treatment of acute (mushroom) poisoning. To our knowledge, no studies have analyzed how these recommendations are followed in every day clinical practice, so far. Our assumption was that the underlying disease severity and perceived acuity may play a role in the determination of key coordinates of the TPE such as exchange volume in relation to the calculated plasma volume of the patient. Moreover, we were interested in whether the differences in treatment time between centrifugal TPE (cTPE) and membrane TPE (mTPE), recently shown in a prospective clinical study [9] could be confirmed under everyday conditions. This is a retrospective analysis of all therapeutic plasma exchange (TPE) procedures at a tertiary care hospital performed between January 1st and December 31st 2012. One hundred eighty five patients with a total of 912 treatments have been evaluated. Written informed consent was waived by the Ethics committee of the Hannover Medical School due to the anonymized nature of the analysis.Patients who received TPE were retrieved from the patient data management system of the hospital by entering the procedure code for TPE. For all identified patients the following information was entered into the studies data base:Age (years), height (cm), weight

ISSN: 2475-3181
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(kg), Body-Mass-Index (kg/m2), laboratory markers such as hematocrit (%), the two modes to perform TPE (mTPE vs. cTPE), plasma exchange fluid (albumin vs. fresh frozen plasma or a mixture of both), the anticoagulants (citrate vs. heparin), the median treatment time (minutes), and the median of the exchanged plasma volume (ml).The following parameters were calculated: Plasma volume (PV): 0.065 x weight (in kg) x (1-hematocrit) and exchanged plasma volume pro time (ml/min).

Importance of Research (200 Word Limit):

Patients with low hematocrit and high body weight do not receive the minimum recommended dose of exchange volume. Centrifugal TPE allowed faster plasma exchange than membrane TPE. Therapeutic plasma exchange (TPE) was first described as an extracorporeal blood purification technique more than a hundred years ago [1]. It removes pathogenic substances such as auto-antibodies, lipoproteins, and circulating immune complexes, from the plasma [2] and plays a key role in the management of various diseases. TPE can also replenish missing plasma components, e.g. ADAMTS13 in TTP, if fresh frozen plasma is used as exchange fluid. According to the 2016 guidelines of the American Society of Apheresis, it is the treatment of choice for acute ANCA associated rapid progressive glomerulonephritis, thrombotic thrombocytopenic purpura, Guillain-Barré syndrome, Goodpasture syndrome, and cardiac allograft rejection [3]. Treatment numbers are especially increasing in the transplant setting as the use of incompatible kidney transplantation is growing as a response to the organ shortage, hence more and more recipients of a live-donor kidney transplant as well as deceased donor organ need to be pretreated by TPE [4]. Periodically TPE treatment numbers are increasing in small epidemics such as the 2011 German STEC-HUS crisis.

Biography (150 Word Limit):

Sara Mokhtari is a doctor of medicine; is a residency student in Vascular Surgery at Mohammed VI University Hospital in Oujda. After successfully completing the internship competition in2016, she decided to spend a full academic year in the Department of Vascular Surgery at the Mohammed VI University Hospital. During her medical studies, Sara Mokhtari has assisted many national and international medical conference and meetings. Sara Mokhtari is a doctor of medicine; is a residency student in Vascular Surgery at Mohammed VI University Hospital in Oujda. After successfully completing the internship competition in2016, she decided to spend a full academic year in the Department of Vascular Surgery at the Mohammed VI University Hospital. During her medical studies, Sara Mokhtari has assisted many national and international medical conference and meetings.

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Information of Institute/ University/ Laboratory (200 Word Limit):

Sharda University is a private university located in Greater Noida, Uttar Pradesh, India. The school is part of the Sharda Group of Institutions, which was founded by P.K Gupta in 1996. The group has campuses in Agra, Mathura, and Greater Noida. Ranking among top 4 Engineering colleges in the North zone by 'The Academic Insights' in 2020. Top 5th ranking in the number of patents granted by 'India Today survey' in 2020. Ranking among Top 10 Private Universities in North India by 'ARIIA' in 2020. Sharda is a very reputable University in North India. They are well known and have a good name in the field of academics. They also had good placement rates, so that was why I applied at Shards for my MBA. The admissions are an online process; registering and uploading documents are the first step.

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