Progress on 100 years of Blood Purification

PURPOSE: To investigate the progress of Blood Purification over the last 100 years.

MATERIAL and METHOD: To review history of progress in Blood Purification.

RESULTS: First plasma separation for blood purification was done by Abel in 1913 in USA. He published on July 16, 1914. He used the word plasmapheresis. Rosenberg and Urevitch performed the first plasmapheresis in 1913 in St. Petersburg, Russia. They were acknowledged by Abel. The 100 years anniversary was celebrated in April 2013 in St. Petersburg and I was Invited Speaker and Chair the first session with Russian congress president.

Phlebotomy was first used in 1520 and we still use it to treat familial hyperchromatosis. Blood letting was the ancient way to treat patients. Leeches were also used to remove blood. Transfusion from animal to human was performed in 17 century. Moravits transfused RBC from one dog to another in 1906.The first transfusion was performed in Cleveland, Ohio in 1906. Haas performed dialysis in a dog in 1914 and in human in 1924. Cohn used blood component in WWII. Rotating Drum was used by Kolff in 1942 . Nose used artificial liver in 1960. Malchesky did the first membrane, thermofiltration, and cryojel removal in the USA in 1978. Agishi, from Japan, performed double filtration in 1980. Siami performed cryofiltration, dual, and tandem with hemodialysis at Vanderbilt University in USA in last 30 years. Several types of LDL pheresis including plasma exchange using membrane or centrifugation, dextran sulfate Prosorba, HELP Heparin Precipitation system, and immune-absorption were developed in the last 25 years. Bosch invented DALI system to remove LDL from whole blood in 2001. Today, we are able to do many advanced apheresis, including photopheresis, cryofiltration, chemo absorption, and immunoabsorption to treat many specific diseases. **CONCLUSION**: Today we have developed many advances in plasmapheresis to treat many diseases specially invented different immunoabsorption columns for disease specific to the patient. They all have been proven to be effective and safe.