KSN 2021
FULLY VIRTUAL MEETING
September 02 (Thu) - 05 (Sun)

Abstract Submission No. : 2595

HOLLOW FIBER SEPARATION MEMBRANES FOR HEMODIALISIS

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Objectives: Polymers have wide applications. The heterogeneous mixture forms a separate phase structure into a membrane to make medical devices. The function of the membrane is to perform a selective barrier with various aspects: thickness, structure, pore diameter, electric charge, particle displacement.

Methods: This research was conducted by doing a systematic review

Results: Hollow fiber separation membrane is one type of liquid membrane made of polymer material with porous membrane morphology and driving force from differences in mass concentration. The chemical properties of the membrane surface have wetting or contamination consequences that affect the durability of the membrane. The flow form is cross (crossflow) and the arrangement of the modules accommodates up to 10,000 fibers between 200 m to 2500 m in diameter. In dialysis, blood flow and dialysate are opposite, in order to maximize the excretion of toxic substances. The application of the hollow fiber membrane is for hemodialysis or washing human blood due to chronic kidney failure. The dialysis procedure is to remove toxic substances from metabolism and improve the balance of salt, water, and acid in the blood. The working principle is the application of blood dialysis is the opposite flow between the blood and the dialysate for the purpose of maximizing the elimination of toxic substances in the blood.

Conclusions: The essence of dialysis is to remove toxic substances from metabolism and improve the balance of salt, water, and acid in the blood. The current state of science and technology for hemodialysis membranes is on artificial kidneys made of living materials other than hemodialysis equipment that can be moved, carried, worn on the body, and implanted in the body.