Prognostic Test for Improved Management of Dialysis Patients
[LAB0029]

Background

- According to the CDC, approximately 500,000 end-stage renal disease (ESRD) patients are on maintenance hemodialysis (MHD).
- Approximately half of all dialysis patients die of cardiovascular disease (CVD).
- However, conventional CVD risk factors such as hypercholesterolemia are not associated with the mortality of ESRD patients on MHD.
- Therefore, CVD biomarkers specific to patients on MHD would greatly improve the outcome and survival rate for these patients.

Innovation

- Dr. Kalantar-Zadeh has developed a method of predicting CVD in MHD patients.
- After 6 years of following patients to predict mortality rates using, he discovered that non-traditional lipoprotein measures could better predict outcomes in MHD patients.
- In dialysis patients, a low level of serum low-density lipoprotein (LDL) is associated with higher mortality, a phenomenon known as lipid paradox or reverse epidemiology.
- LDL can be subfractionated and consists of different particles sizes, including very-small LDL and large LDL.
- This prognostic test is based on particle sizes and LDL subfraction concentration.
- For example, the presence of increased very-small LDL concentration or decreased LDL particle size in blood-serum indicates a higher risk of mortality.
- This prognostic test enables early CVD risk management and monitoring based upon the calculated mortality risk of the patient.

Advantage

- Decrease mortality in ESRD dialysis patients by identifying the risk of CVD
- Test can use blood, serum, or plasma

Applications

- Simple test to predict mortality risk in patients on MHD

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IP Status

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- U.S. Patent No. 10,473,675 issued November 12, 2019

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