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Why some Peritoneal dialysis patients more susceptible to infection

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Peritoneal dialysis patients use dialysis fluids which are sterile and have been designed for intraperitoneal administration only. These fluids are composed of electrolytes (sodium, chloride, calcium, and magnesium); lactate (a buffer); and glucose, the osmotic agent, at a concentration of 1.36, 2.27, or 3.68 w/v importantly, the fluids do not contain bacteriostatic or antimicrobial agents (Dianeal PD Peritoneal Dialysis Solution). The transport of these fluids varies between different patients and also within an individual with time (Oreopoulos and Rao 2001). Most patients use two to three litre exchange of 1.36 ml/ml glucose. Although, many studies have shown biochemical parameters (urea and creatinine plasma concentration, fluid and electrolyte balance) are relatively stable over the time for CAPD patients, large quantities of glucose result in the peritoneal as a result of absorption (Holmes and Shockley 2000), as well as loss of protein and abnormalities in lipoproteins level (Gail, 1989).

Many studies have established a relationship between protein loss and malnutrition and inflammation while the other studies have been shown the effect of glucose concentration on peritoneal membrane which lead to increase the protein loss. However, only few of them have studied and characterized the protein profile of dialysis fluids obtained from CAPD patients.

This project is to characterize the protein profile of different patients and to see whether any differences between patient's samples and within a patient's. In order to do the characterization, many tests have been done using patients samples. Tests to characterize patients samples involve 1D, SDS-PAGE gel electrophoresis then sequencing these proteins. Also, Glucose test and PH were been used.

The protein profiles between different patients and within patients having different dwell have showed that there are differences between patients in term of protein loss whether in day time dwell or the overnight dwell. Also it has showed that the effect of high molecular weight protein in the profile itself like Albumin. Moreover, the profile showed the different protein present in the peritoneal dialysis.

Biography

Noura Al Dayan is currently an Assistant Professor in the applied medical sciences at Salman University, Riyadh, Saudi Arabia. She holds a PhD of Molecular Genetics from Leicester University (2010) and worked as genetics consultant and deputy of cytogenetic at Ministry of health. She has published Staphylococci, Catecholamine Inotropes and Hospital-Acquired Infections and contributed at many international conferences.

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