Reducing Cardiometabolic Risk in Peritoneal Dialysis Patients: Role of the Dialysis Solution

Clifford J. Holmes, Ph.D.

Abstract

Peritoneal dialysis (PD) is a well-established form of therapy for stage 5 chronic kidney disease requiring renal replacement therapy. D-Glucose has been used successfully for several decades as the osmotic agent employed in dialysis solutions to achieve adequate fluid removal. The absorption of 100–200 grams of glucose per day has been suggested as potentially increasing cardiometabolic risk, particularly in patients with diabetes. Supporting and undermining evidence for this hypothesis is reviewed, with a focus on the role of glucose absorption in changes in body composition, dyslipidemia, and glycemic control in diabetic PD patients. Clinical strategies to optimize fluid removal while minimizing the metabolic impact of glucose absorption are also discussed.

J Diabetes Sci Technol 2009;3(6):1472-1480

Author Affiliation: Renal Division, Baxter Healthcare, McGaw Park, Illinois

Abbreviations: (APD) automated peritoneal dialysis, (apoB) apolipoprotein B, (BMI) body mass index, (CAPD) continuous ambulatory peritoneal dialysis, (ESRD) end stage renal disease, (HbA1c) hemoglobin A1c, (HD) hemodialysis, (LDL) low density lipoprotein, [Lp(a)] lipoprotein(a), (PD) peritoneal dialysis, (PEW) protein energy wasting, (UF) ultrafiltration

Keywords: cardiometabolic, glucose, icodextrin, peritoneal dialysis

Corresponding Author: Clifford J. Holmes, Renal Division, Baxter Healthcare, 1620 Waukegan Road, McGaw Park, IL 60085; email address <u>cliff_holmes@baxter.com</u>