

# Blood Glucose Regulation of Diabetic Nephropathide Instrumental Peritoneum Treatment and its Effect on Residual Renal Function, Case Report

Güzide Öğüt, Serdar Kahvecioğlu, Cuma Bülent Gül, Emel Acar Kaya, Serap Alsancak  
Bursa Şevket Yılmaz Education and Research Hospital, Nephrology Clinic, Bursa, Turkey

**INTRODUCTION:** Residual Renal Function (RRF), peritoneum dialysis (D) and haemodialysis (HD) increases life quality of patients. PD which is performed in the form of Continue Ambulatory Peritoneum Dialysis (CIPD) and Instrumental Peritoneum Dilysis (IPD) is preferred according to peritoneum permeability. Frequently changing IPD treatment in patients with highly permeable diabetics prevents adverse effects of PD on blood glucose regulation though partially.

Here, a patient who is monitored with diabetic neuropathy diagnosis, for whom positive effects on blood glucose regulation and RRF after transition from CIPD treatment to IPD treatment was discussed.

**CASE:** Male patient at the age of 33, diagnosed diabetes in 1995. In 2010 azotemia was detected and directed to nephrology polyclinic. On 23/03/2010 PD catheter was installed percutaneous way. On 12/04/2010 PD treatment started. Initial treatment was CIPD2 1.5% Glu. 4x2000ml. The patient who denied his disease in follow-ups and who experiences intense anxiety hindered his treatment. He was intemed a few times due to hypervolemia. IPD treatment was planned for the patient whose permeability was HA in the PET test and who has hyperglycemia. He was hospitalized and provided to have regular dialysis. Changes CIPD2 1.5% 2000ml 2x1, CIPD4 2.3% 2000ml 3x1 was performed and volume control was provided. Blood glucose regulation was provided through insulin treatment and osmotic pressure was created. Thus ultra filtration was increased. Furasemid 2x1 application was started for the patient whose residue urine is 700-1000 ml. IPD training was completed within the shortest time. IPD treatment was planned as CIPD2 1,5% 5000ml 2x1, treatment period was planned as 10 hours, and as daytime peritoneum dry. The patient was given intense diabetics training. He was subjected to weekly follow-up. He was given psychiatric support due to insomnia and anxiety. IPD initial, 2<sup>nd</sup> month and last examinations of the patient are given in Table 1.

**RESULT :** In diabetic patients, hyperglycemia disrupts osmotic gradient between peritoneum liquid and capillary and decreases ultra-filtration. Short waiting period in IPD decreases glucose absorption and prevents high blood glucose, thus prevents corruption of osmotic pressure difference. Furthermore RRF protection is provided through blood glucose regulation. Desolation of daytime peritoneum upon blood glucose regulation caused evident increase in RRF.

It was observed that providing optimal blood glucose regulation in diabetic patients, application of patient peculiar treatment, regular follow-up and trainings increased PD sufficiency and provided clinical healing in the patient.

**Table 1. PD start of the patient, 2<sup>nd</sup> month and last laboratory values of the treatment**

	Initial	2 <sup>nd</sup> month	2 <sup>nd</sup> year
<b>Kilo</b>	70	61	62
<b>PET</b>	HA	HA	HA
<b>Plasma Glucose</b>	541	150	150
<b>BUN</b>	150	75	57
<b>Creatinine</b>	4	3	4.16
<b>Urinary BUN</b>	150	168	122
<b>Urinary Creatinine</b>	25	26	31
<b>Creatinine Clearence</b>	116 (8.68%)	463 (12%)	94 (7.53%)
<b>Total Kt/V</b>	2.85	3.76	2.51
<b>Urine volume</b>	1000-1200	1500-1700	1200-1400
<b>Phosphor</b>	5	3.5	4
<b>Uric Acid</b>	5.2	5	6
<b>Potassium</b>	5.2	4.3	4.76
<b>Calcium</b>	9.1	9.8	8.6
<b>CRP</b>	7.9	8.52	17
<b>PTH</b>	137	112	116
<b>Hemoglobin</b>	10.4	12.5	10.7
<b>HbA1c</b>	11.3	10.2	8.4