[MP495] OPTIMAL BLOOD GLUCOSE CONTROL of DIABETIC PD PATIENTS with ICODEXTRIN and DPP4-INHIBITOR: CROSS SECTIONAL STUDY in A SINGLE DIALYSIS UNIT

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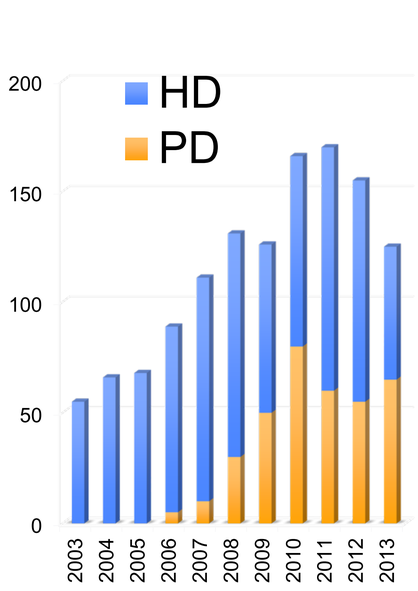
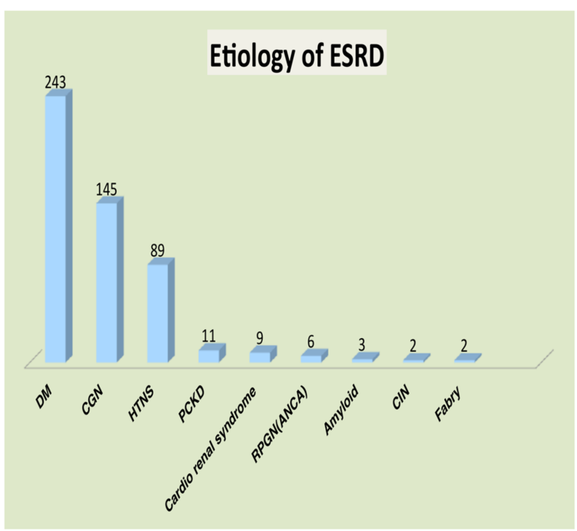
INTRODUCTION AND AIMS: Renal replacement therapy (RRT) for diabetic patients was complicated due to blood glucose control and severe cardiovascular events. Instead of sulfonylureas (SU) or metformin, recently several novel oral hypoglycemic agents (OHA) such as Dipeptidyl Peptidase-4 (DPP4) -inhibitor or sodium glucose co-transporter-2 (SGLT-2) -inhibitor have been clinically used and have resulted in better prognosis for diabetic patients with chronic kidney disease (CKD). In this decade, we have treated uremic patients based on PD first policy in order to preserve kidney function and to prevent cardio-vascular diseases, thus, the penetration ratio of PD has been up to 40% in our institution. Also we have positively introduced PD solution containing with icodextrin, which has been known to provide benefit for ECF control. In addition, this solution may be expected better blood glucose control because of glucose-free and high-osmolality solution. We investigated cross-sectional clinical status of diabetic PD patients, especially focused on diabetic medication and PD solution.

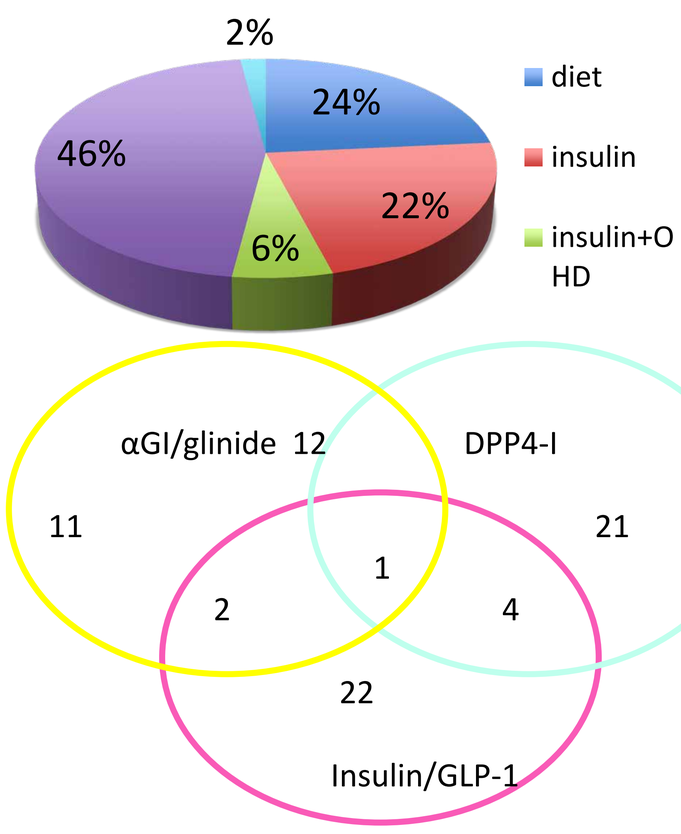
METHODS: 227 end-stage kidney failure patients with PD (continuous ambulatory PD: 206, automated PD: 21; no combination therapy with PD and HD) as RRT, managed in our institution in Oct 2015, were subjected. Ninety-eight patients (44%) were diabetic. In both of diabetic and non-diabetic patients, clinical parameters including HbA1c were investigated. In diabetic PD patients, the effect of icodextrin solution or the medication type for glycemic control, especially in OHAs on blood glucose level, was examined. was evaluated.

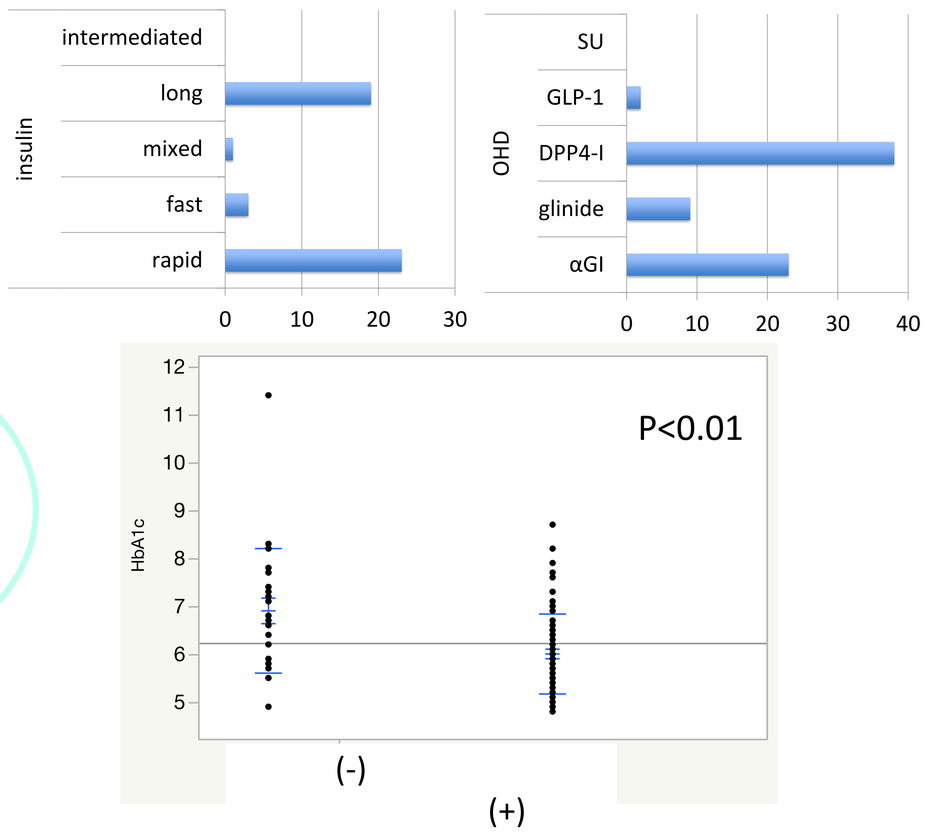
	Total	DM	non-DM	P-value
Age	66.5±12	68±11	62.7±13	<0.05
Male/Female	112/48	67/20	45/29	<0.05
Duration of PD(years)	2.4±1.6	2.5±1.5	2.3±1.5	0.29
PG(mg/dL)	125±40	136.4±42	108±21	<0.05
HbA1c(%)	5.64±0.85	6.0±0.9	5.2±0.5	<0.05
GA(%)	15.1±7.3	16.1±3.5	12.5±1.5	<0.05
Hb(g/dL)	10.5±1.2	10.4±1.2	10.6±1.1	0.18
Alb(g/dL)	3.3±0.45	3.2±0.5	3.3±0.4	0.06
GA/HbA1c	2.6±0.5	2.7±0.6	2.4±0.3	<0.05
ESA(%)	146(92%)	82(93%)	64(88%)	<0.05





RESULTS: There was no difference in PD vintage (2.5 versus 2.3 years), serum albumin (3.2 versus 3.3 g/dl) and Hb level (10.4 versus 10.6 g/dl) between diabetic and non-diabetic group. HbA1c and gluco-albumin in diabetic group (6.0% and 16.1%) significantly higher ($p < 0.01$) than those in non-diabetic group (5.2% and 12.5%). For control of blood glucose, 23 patients (23%) were managed by diet therapy only without medication, 51 (52%) were administered OHD and 28 (28%) were treated with once to three times per day self-injection of insulin. Seven (7%) patients were administered both OHA and insulin. As OHA, DPP-4 inhibitor and pioglitazone / glinide were frequently administered, showing 38 (75%) and 26 (51%) patients, respectively. Thirteen patients (25%) were administered both DPP4-inhibitor and pioglitazone / glinide. There was no PD patient treated with SU, SGLT-2 inhibitor or metformin. Seventy-three diabetic PD patients (75%) used daily icodextrin PD solution, in others, no patient used 4.25% (high-concentration) glucose solution. HbA1c of diabetic patients dialyzed with icodextrin solution was significantly lower than that without icodetrin solution (6.0 +/- 0.8 % versus 6.9 +/- 1.3, $p<0.01$). DPP-4 inhibitor was prescribed for 33 out of 73 (45 %) patients with icodextrin solution and 9 out of 24 (38 %) patients without icodextrin. In contrast, insulin analogues were administered for 11 out of 73 (15 %) patients with icodextrin and for 6 of 24 (25 %) without icodextrin.





CONCLUSIONS: Daily use of Icodextrin solution and oral DPP4-inhibitor administration led to optimal blood glucose of diabetic patients with chronic PD. Diabetic patients may be expected better prognosis with prescription both of glucose-free PD solution and novel OHAs.

DOI: 10.3252/pso.eu.53era.2016