Supplemental Table 1: Baseline characteristics for patients using biocompatible and standard solutions alongside characteristics for patients excluded from analysis as using both biocompatible and standard solutions during follow up.

		Biocompatible (BCS) (n=71)	**Standard (SS) (n=295)**	**Mixed (M) (n=124)**
	Measures per person	6.4 (0.45)	7.3 (0.21)	7.8 (0.29)
	Time to end of PD (years)	2.6 (2.0-3.9)	3.5 (2.2-4.8)	4.6 (3.1-6.0)
Baseline measurements for fixed covariates	**Age (years)**	53.5 (1.6)	53.1 (0.88)	53.8 (1.3)
	Male Gender	50%	59%	60%
	Comorbidity score (low/medium/high)	48%/46%/6%	40%/52%/8%	45%/50%/5%
	Dialysate IL-6 (log transformed pg/ml)	4.8 (1.8-12.9)	4.5 (1.5-10.8)	4.1 (1.1-7.5)
	Plasma IL-6 (log transformed pg/ml)	1.3 (0.64-2.4)	1.3 (0.7-2.5)	1.3 (0.69-2.4)
	APD usage compared to CAPD usage	6%	28%	5%
Baseline measurements for time varying covariates	**Average Dialysate Glucose Concentration (g/L)**	13.6 (13.6-17)	13.6 (13.6 – 18.2)	13.6 (13.6-21.9)
	Urine Volume (Litres)	0.96 (0.55-1.52)	0.86 (0.4-1.4)	0.83 (0.3-1.29)
	Icodextrin use	29%	33%	30%
	Peritonitis Count (number of episodes per year)	0 (0-0.59)	0.23 (0-0.47)	0.19(0-0.78)

Supplemental Table 2: comparison of models using baseline PSTR and PSTR from 2 months after starting PD.

Table demonstrating unadjusted model for D/P Cr, assessing effect of time and biocompatibility with D/P Cr measurements are taken from baseline rather than from 2 months after start of PD, as used in the final analysis. Allowing the gradient over time to differ between patients with the addition of random slopes significantly improved the model (likelihood ratio χ^2test = 735 p=<0.0001).

Variable	Coefficient	95% CI		P value
D/P Cr values after 2 months on PD				
Linear Time in Years	0.0011	-0.0046	0.0068	0.708
Quadratic time in years	0.0013	0.00069	0.0020	<0.0005
Biocompatible solutions	-0.064	-0.095	-0.033	<0.0005
Biocompatible linear time interaction	0.037	0.015	0.059	0.001
Biocompatible quadratic time interaction	-0.0067	-0.010	-0.0029	0.001
D/P Cr values from start of PD				
Linear Time in Years	0.010	-0.0071	0.0091	0.811
Quadratic time in years	0.0015	0.00019	0.0029	0.026
Biocompatible solutions	-0.066	-0.10	-0.031	<0.0005
Biocompatible linear time interaction	0.042	0.017	0.067	0.001
Biocompatible quadratic time interaction	-0.0084	-0.013	-0.0034	<0.0005

Supplemental Table 3: Comparison of changes in PSTR with biocompatible and standard solution in 2 adjusted analyses. The first is for all patients included in the final analysis, the second is the same analysis but only in patients not using icodextrin.

Variable	Coefficient	95% CI	
D/P Cr values after 2 months on PD adjusted analysis			
Linear Time in Years	-0.028	-0.044	-0.01
Quadratic time in years	0.0009	-0.0014	0.0032
Biocompatible solutions	-0.049	-0.091	-0.008
Biocompatible linear time interaction	0.061	0.026	0.095
Biocompatible quadratic time interaction	-0.01	-0.017	-0.0026
D/P Cr values adusted analysis in patients not using icodextrin			
Linear Time in Years	-0.029	-0.069	0.011
Quadratic time in years	0.00021	-0.0042	0.004
Biocompatible solutions	-0.1	-0.21	-0.0012
Biocompatible linear time interaction	0.11	0.042	0.17
Biocompatible quadratic time interaction	-0.016	-0.028	-0.0053

Supplemental Table 4: Outcome of 1st peritonitis episode for people on biocompatible and standard solutions. There were no statistically significant differences between the two groups.

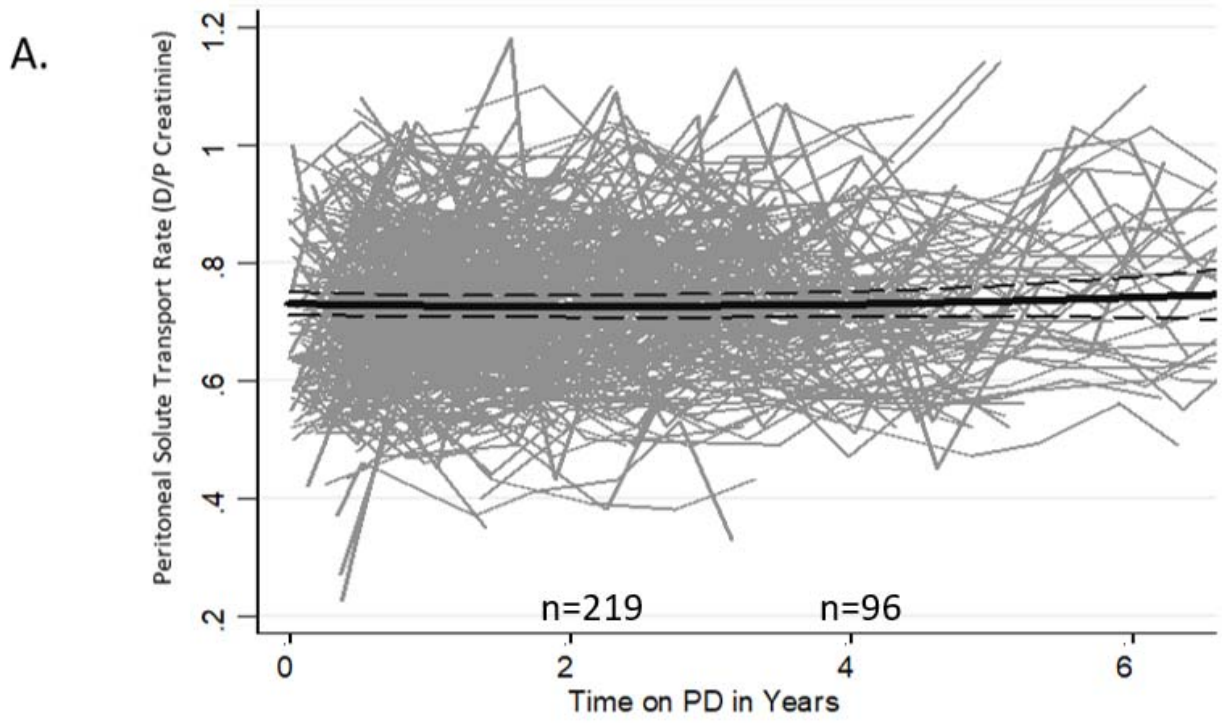
Solution type	Catheter	Death	Recovered	Total
Standard solutions	15 (7%)	4 (2%)	183 (91%)	202
Biocompatible solutions	2 (5%)	2 (5%)	38 (90%)	42
Total	17	6	221	244
chi2	1.44	p=0.485		

Supplemental Table 5: Adjusted multilevel model prior to backwards selection, included are all clinically meaningful available covariates and their linear and quadratic time interactions. The results remain similar to the model following backwards selection.

	Coefficient	P Value	95% Confidence Interval	
time	-0.022	0.585	-0.103	0.058
Time^2	-0.002	0.783	-0.015	0.011
Biocompatible	-0.036	0.118	-0.082	0.009
Biocompatible * time	0.038	0.052	0.000	0.076
Biocompatible * time^2	-0.010	0.017	-0.018	-0.002
Centre 1	-0.063	0.145	-0.147	0.022
Centre 2	-0.107	0.008	-0.186	-0.027
Centre 3	-0.038	0.378	-0.123	0.047
Centre 4	-1.588	0.026	-2.990	-0.187
Centre 5	0.001	0.971	-0.070	0.072
Centre 6	-0.048	0.245	-0.130	0.033
Centre 7	0.014	0.476	-0.024	0.052
Centre 1 * time	-0.007	0.658	-0.037	0.023
Centre 2 * time	0.061	0.218	-0.036	0.159
Centre 3 * time	0.025	0.076	-0.003	0.052
Centre 4 * time	0.0004	0.975	-0.022	0.023
Centre 5 * time	0.281	0.040	0.013	0.549
Centre 6 * time	-0.003	0.400	-0.012	0.005
Centre 7 * time	0.012	0.150	-0.004	0.028
Centre 1 * time^2	0.003	0.224	-0.002	0.009
Centre 2 * time^2	-0.037	0.146	-0.087	0.013
Centre 3 * time^2	-0.001	0.685	-0.007	0.005
Centre 4 * time^2	0.001	0.823	-0.005	0.006
Centre 5 * time^2	-0.051	0.040	-0.100	-0.002
Centre 6 * time^2	0.0001	0.866	-0.001	0.002
Centre 7 * time^2	-0.004	0.317	-0.012	0.004
Icodextrin +ve	0.044	0.006	0.013	0.076
Icodextrin * time	0.005	0.684	-0.018	0.028
Icodextrin * time^2	-0.002	0.323	-0.005	0.002
Average Glucose exposure	-0.020	0.271	-0.057	0.016
Average Glucose exposure * time	0.017	0.246	-0.012	0.045
Average Glucose exposure * time^2	-0.0005	0.839	-0.005	0.004

Log PD IL-6	0.054	0.001	0.023	0.085
Log PD IL-6 * time	-0.006	0.620	-0.030	0.018
Log PD IL-6 * time^2	0.001	0.681	-0.003	0.005
Urine Volume	0.00002	0.133	-0.000005	0.00004
Urine Volume * time	0.000002	0.835	-0.00002	0.00002
Urine Volume * time^2	-0.000001	0.395	-0.000005	0.000002
Peritonitis count	0.019	0.030	0.002	0.037
Peritonitis * time	-0.003	0.616	-0.013	0.008
Peritonitis * time^2	0.0003	0.687	-0.001	0.002
Age	-0.0001	0.839	-0.001	0.001
Age * time	-0.0002	0.560	-0.001	0.001
Age * time^2	0.0001	0.121	-0.00003	0.0002
Gender	0.031	0.044	0.001	0.062
Gender * time	0.024	0.037	0.001	0.047
Gender * time^2	-0.004	0.036	-0.008	0.000
Log Plasma IL-6	0.010	0.749	-0.049	0.069
Log Plasma IL-6 * time	-0.013	0.583	-0.060	0.034
Log Plasma IL-6 * time^2	0.003	0.563	-0.006	0.011
APD +ve	-0.007	0.683	-0.042	0.028
Type * time	0.00004	0.998	-0.028	0.028
Type * time^2	-0.0002	0.944	-0.005	0.005
Comorbidity Score	0.003	0.738	-0.013	0.019
Comorbidity Score * time	0.011	0.066	-0.001	0.024
Comorbidity Score * time^2	-0.003	0.008	-0.005	-0.001

Supplemental Figure 1: Grey lines represent individual patient measurements, solid black lines represent the adjusted PSTR with dotted lines demonstrating the 95% CI in standard (A) and biocompatible (B) solutions.



B.