

The arsenic-lowering effect of Inulin type prebiotics in end stage renal disease: a randomized crossover trial

Supplemental materials

Supplementary table 1 Comparison of basic characteristics and biochemistry parameters between patients included in the final analysis and patients excluded.

Supplementary table 2 The comparison of the baseline values of plasma trace elements between the two intervention sequences and between prebiotics-pre and placebo-pre.

Supplementary Figure 1 The association of As plasma concentration with daily clearance rate by urine, dialysate and feces. A, the repeated-measures correlation between plasma As and urinary As excretion rate; B, the repeated-measures correlation between plasma As and dialysate As clearance rate; C, the repeated-measures correlation between plasma As and total As removal rate; D, the repeated-measures correlation between plasma As and fecal As content. For the repeated-measures correlation, observations from the same participant were shown in the same color, with corresponding lines to show the repeated-measures correlation fit for each participant, rm, correlation coefficient of repeated measures.

Supplementary table 1 Comparison of basic characteristics and biochemistry parameters between patients included in the final analysis and patients excluded ¹.

Variables	Included in analysis (n=29)	Lost follow-up / samples unavailable (n=15)	P ²
Age, years	39.72 ± 12.23	37.95 ± 12.58	0.655
Sex, male / female	15 / 14	5 / 10	0.246
BMI, kg/m ²	20.76 ± 3.02	20.89 ± 2.22	0.885
ESRD Course, month	23.67 (16.87-54.69)	31.89 (13.43-56.15)	0.967
PD Course, month	18.84 (12.20-42.26)	13.61 (4.03-23.69)	0.075
Urine volume, mL/24h	0.33 (0.02-0.73)	0.68 (0.15-1.43)	0.142
Daily dialysate influent, L/24h	8.00 (6.00-8.00)	8.00 (6.00-8.00)	0.709
1.5% Glucose dialysate, L/24h	8.00 (6.00-8.00)	8.00 (6.00-8.00)	0.287
Daily ultrafiltration, mL/24h	350.00 (75.00-487.50)	222.50 (-253.75-455.00)	0.287
Spent dialysate, L/24h	8.36 (6.27-8.85)	7.74 (6.41-8.64)	0.350
Serum albumin, g/L	39.45 ± 3.54	39.11 ± 6.32	0.817
Serum prealbumin, mg/L	401.34 ± 68.08	419.69 ± 81.01	0.493
Serum hemoglobin, g/L	103.28 ± 20.31	100.20 ± 20.46	0.637
BUN, mmol/L	18.15 ± 4.45	16.83 ± 4.67	0.364
Serum creatinine, µmol/L	998.24 ± 311.65	870.40 ± 290.18	0.194
Serum HCO ₃ , mmol/L	24.86 ± 2.58	25.62 ± 3.56	0.420
Residual GFR, mL·min ⁻¹ ·1.73 m ⁻²	4.40 (3.30-5.60)	4.60 (4.00-5.80)	0.304
SBP, mmHg	144.93 ± 25.15	153.64 ± 17.72	0.252
DBP, mmHg	87.07 ± 15.52	95.14 ± 11.97	0.094
FBG, mmol/L	5.33 (5.03-5.66)	5.17 (4.88-5.72)	0.468
Plasma TG, mmol/L	1.41 (1.18-1.97)	1.98 (1.64-2.20)	0.024
Plasma TC, mmol/L	4.36 ± 0.96	4.56 ± 1.42	0.591
Plasma LDL-C, mmol/L	2.33 ± 0.67	2.53 ± 1.07	0.467
Plasma HDL-C, mmol/L	1.02 (0.84-1.26)	1.06 (0.80-1.42)	0.951
Serum hs-CRP, mg/L	1.15 (0.60-4.60)	0.60 (0.30-1.45)	0.081
Kt/v	1.96 (1.73-2.36)	1.98 (1.66-2.38)	0.631
Ccr, L·wk ⁻¹ ·1.73 m ⁻²	56.49 (48.51-71.09)	57.86 (45.83-71.76)	0.852
nPNA, g/kg'd	0.95 ± 0.17	0.92 ± 0.16	0.618
nPCR, g/kg'd	1.19 ± 0.29	1.08 ± 0.18	0.150

¹ Values are presented as means ±SDs or medians (IQRs).

² P values were calculated by independent-sample *t* test or Mann–Whitney *U* test.

ESRD, end stage renal disease; PD, peritoneal dialysis; BUN, blood urea nitrogen; rGFR, residual glomerular filtration rate; CCr, creatinine clearance rate; Kt/V, dialysis efficiency; nPNA, normalized protein nitrogen appearance; nPCR, normalized protein catabolic rate; SBP, systolic blood pressure; DBP, diastolic blood pressure; FBG, fasting blood-glucose; hs-CRP, hypersensitive C-reactive protein.

Supplementary table 2 The comparison of the baseline values of plasma trace elements between the two intervention sequences and between prebiotics-pre and placebo-pre.

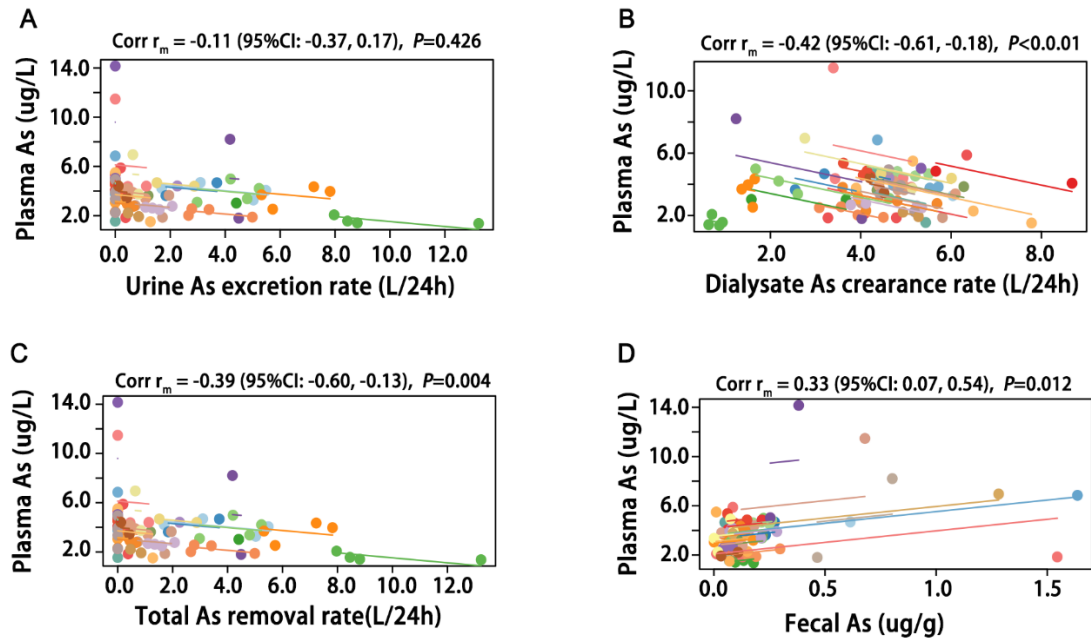
Trace elements	Prebiotics to placebo (n=16)	Placebo to prebiotics (n=13)	<i>P</i> ¹	Prebiotics-pre (n=23)	Placebo-pre (n=23)	<i>P</i> ²
Serum Mn, µg/L	0.57 (0.47-0.66)	0.44 (0.33-0.61)	0.223	0.58 (0.42-0.66)	0.48 (0.36-0.65)	0.316
Serum Fe, µg/L	682.62 (546.87-905.22)	904.27 (680.90-1022.56)	0.174	688.82 (541.15-922.17)	800.80 (640.93-928.04)	0.121
Serum Co, µg/L	0.33 (0.28-0.51)	0.27 (0.23-0.38)	0.121	0.33 (0.26-0.54)	0.29 (0.24-0.52)	0.831
Serum Cu, µg/L	878.64 (803.59-1023.09)	883.46 (798.81-1058.36)	0.873	879.66 (821.13-1012.59)	915.31 (821.13-1038.89)	0.976
Serum Zn, µg/L	737.41 (603.67-764.31)	721.09 (600.07-862.74)	0.873	738.61 (595.00-773.49)	729.36 (590.34-837.11)	0.738
Serum Se, µg/L	68.93 (53.86-78.01)	59.93 (52.11-70.86)	0.302	65.00 (51.95-77.29)	60.72 (52.71-69.59)	0.394
Serum Sr, µg/L	51.88 (47.97-66.21)	57.11 (43.44-69.80)	0.698	51.65 (48.63-69.02)	57.14 (46.97-70.15)	0.584
Serum Mo, µg/L	14.77 (9.19-17.77)	10.56 (8.88-13.55)	0.189	13.98 (8.49-17.54)	10.89 (9.04-13.75)	0.274
Plasma Cr, µg/L	3.58 (2.10-4.73)	2.85 (1.47-4.78)	0.507	3.61 (2.02-4.60)	3.56 (2.30-4.79)	0.903
Plasma V, µg/L	0.26 (0.17-0.41)	0.23 (0.18-0.35)	0.599	0.24 (0.17-0.35)	0.24 (0.18-0.36)	0.715
Plasma Ni, µg/L	0.21 (0.13-5.36)	1.27 (0.13-7.45)	0.664	0.13 (0.13-5.54)	1.00 (0.13-6.05)	1.000
Plasma As, µg/L	3.55 (2.79-4.18)	3.50 (1.88-4.84)	0.873	3.38 (2.76-3.92)	3.63 (2.31-4.85)	0.465
Plasma Cd, µg/L	0.08 (0.04-0.10)	0.07 (0.02-0.09)	0.537	0.08 (0.04-0.11)	0.08 (0.04-0.11)	0.447
Plasma Pb, µg/L	0.25 (0.14-0.30)	0.27 (0.13-0.35)	0.873	0.25 (0.15-0.30)	0.26 (0.14-0.37)	0.976
Plasma Ba, µg/L	11.09 (8.68-13.45)	11.27 (5.41-13.69)	0.873	10.08 (7.11-13.60)	10.59 (1.48-12.10)	0.855
Plasma Tl, µg/L	0.06 (0.04-0.07)	0.06 (0.03-0.08)	0.982	0.06 (0.03-0.07)	0.06 (0.03-0.08)	0.855

Supplementary table 2 continued.

Trace elements	Prebiotics to placebo (n=16)	Placebo to prebiotics (n=13)	<i>P</i> ¹	Prebiotics-pre (n=23)	Placebo-pre (n=23)	<i>P</i> ²
Plasma Th, µg/L	0.08 (0.04-0.17)	0.07 (0.04-0.14)	0.767	0.05 (0.03-0.16)	0.05 (0.04-0.08)	0.412
Plasma U, µg/L	0.01 (0.01-0.01)	0.01 (0.01-0.01)	0.205	0.01 (0.01-0.01)	0.01 (0.01-0.01)	0.330

¹ *p* values were calculated by two independent-sample Mann–Whitney *U* test.

² *p* values were calculated by two related-sample Friedman test.



Supplementary Figure 1 The association of As plasma concentration with the daily clearance rate by urine, dialysate and feces.