Appendix H. Table 3. Followup urine biochemical measures for citrate trials

| **Study** | **Treatment Groups, Urine Collection Method**  | **Calcium,****Oxalate,****Ca-Ox Product,** **Ca-Ox Supersaturation** | **Uric Acid, Uric-A Supersaturation** | **Phosphate, Ca-P Supersaturation** | **Citrate, Sodium, Magnesium** | **Potassium (K), Volume, pH** |
| --- | --- | --- | --- | --- | --- | --- |
| Lojanapiwat, 201116 | A. Sodium- potassium citrate 81 mEq/d (n=13 *stone-free only, 39 total*)B. No treatment (n=26 *stone-free only, 37 total*)24 hour collectionStudy reported any data on participant compliance/adherence: No | CALCIUMBaselineMean (SD): NR% hyperCa:A – 10.3% (4/39)B – 18.9% (7/37)F/u Time 1: 12 mo.Mean (SD): NR% hyperCa:A – 20.5% (8/39)B – 18.9% (7/37)OXALATEBaselineMean (SD): NR% hyperOx:A – 20.5% (8/39)B – 16.2% (6/37)F/u Time 1: 12 mo.Mean (SD): NR% hyperOx:A – 20.5% (8/39)B – 27.0% (10/37) | URIC ACIDBaselineMean (SD): NR% hyperUA: A – 2.6% (1/39)B – 0% (0/37)F/u Time 1: 12 mo.Mean (SD): NR% hyperUA: A – 2.6% (1/39)B – 8.1% (3/37)URIC-A SUPERSATBaselineMean (SD): NRF/u Time 1: mo.Mean (SD): NR | PHOSPHATEBaselineNMean (SD): NR% hyperP: F/u Time 1: mo.NMean (SD): NR% hyperP: CA-P SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | CITRATEBaselineMean (SD): NR% hypoCit: A – 51.3% (20/39)B – 40.5% (15/37)F/u Time 1: 12 mo.Mean (SD): NR% hypoCit: A – 7.69% (3/39)B – 37.83% (14/37)SODIUMBaselineNMean (SD): NR% hyperNa: NRF/u Time 1: mo.NMean (SD): NR% hyperNa: NRMAGNESIUMBaselineNMean (SD): NR% hypoMg: NRF/u Time 1: mo.NMean (SD): NR% hypoMg: NR | POTASSIUMBaselineNMean (SD): NR% hypoK: NRF/u Time 1: mo.NMean (SD): NR% hypoK: NRVOLUMEBaselineTotal volume < 1500 mL/day: A – 43.6% (17/39)B – 37.8% (14/37)F/u Time 1: 12 mo.Total volume < 1500 mL/day: A – 38.5% (15/39)B – 54.1% (20/37)pHBaselineMean (SD): A (n=39) 5.8 (0.77)B (n=37) 5.7 (0.66)F/u Time 1: 12 mo.Mean (SD): A (n=39) 6.6 (0.97)B (n=37) 5.9 (0.70) |

| Appendix H. Table 3. Followup urine biochemical measures for citrate trials (continued) |
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| **Study** | **Treatment Groups, Urine Collection Method**  | **Calcium,****Oxalate,****Ca-Ox Product,** **Ca-Ox Supersaturation** | **Uric Acid, Uric-A Supersaturation** | **Phosphate, Ca-P Supersaturation** | **Citrate, Sodium, Magnesium** | **Potassium (K), Volume, pH** |
|  |  | CA-OX PRODUCTBaselineNMean (SD): NRTime 1: mo.NMean (SD): NRCA-OX SUPERSATBaselineNMean (SD): NRTime 1: mo.NMean (SD): NR |  |  |  |  |
| Fernandez-Rodriguez, 20069 | A. Hydrochlorothiazide 50 mg/d (n=50)B. Potassium citrate 20 mEq/d + hydrochlorothiazide 50 mg/d + (n=50)C. No treatment (n= 50)Urine collection method not specified Study reported any data on participant compliance/adherence: No | CALCIUMBaselineMean (SD): NR% hyperCa: A – 42%B – 28%C – 34%F/u Time 1: 12 mo.Mean (SD): NR% hyperCa:A – 16%B – 4%C – 26%OXALATEBaselineMean (SD): NR% hyperOx: A – NRB – 2%C – 2%F/u Time 1:12 mo.Mean (SD): NR% hyperOx: A – NRB – 2%C – 4%CA-OX PRODUCTBaselineNMean (SD): NRTime 1: mo.NMean (SD): NRCA-OX SUPERSATBaselineNMean (SD): NRTime 1: mo.NMean (SD): NR | URIC ACIDBaselineMean (SD): NR% hyperUA: A – 2%B – 6%C – 4%F/u Time 1: 12 mo.Mean (SD): NR% hyperUA: A – NRB – 16%C – 2%URIC-A SUPERSATBaselineMean (SD): NRF/u Time 1: mo.Mean (SD): NR | PHOSPHATEBaselineNMean (SD): NR% hyperP: F/u Time 1: mo.NMean (SD): NR% hyperP: CA-P SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | CITRATEBaselineMean (SD): NR% hypoCit: A – 14%B – 16%C – 14%F/u Time 1: 12 mo.Mean (SD): NR% hypoCit: A – 22%B – 16%C – 14%SODIUMBaselineNMean (SD): NR% hyperNa: NRF/u Time 1: mo.NMean (SD): NR% hyperNa: NRMAGNESIUMBaselineNMean (SD): NR% hypoMg: NRF/u Time 1: mo.NMean (SD): NR% hypoMg: NR | POTASSIUMBaselineNMean (SD): NR% hypoK: NRF/u Time 1: mo.NMean (SD): NR% hypoK: NRVOLUMEBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NRpHBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR |
| Ettinger, 199719 | A. Potassium (42 mEq/d)-magnesium (21 mEq/d) citrate (63 mEq/d) (n=31)B. Placebo (n=33)24 hour collectionStudy reported any data on participant compliance/adherence: Yes (counting tablets) | CALCIUMBaselineMean mg (SD): A (n=31) 237 (120)B (n=33) 275 (131)% hyperCa: NRF/u Time 1: 36 mo.Mean mg (SD): A (n=16) 225 (92)B (n=25) 261 (123)% hyperCa: NROXALATEBaselineMean mg (SD): A (n=31) 37 (13)B (n=33) 36 (12)% hyperOx: NRF/u Time 1: 36 mo.A (n=16) 44 (21) [p<0.05]B (n=25) 39 (10)% hyperOx: NRCA-OX PRODUCTBaselineMean m2 X 10-8 (SD): A (n=31) 1.40 (0.76)B (n=33) 1.77 (0.87)Time 1: 36 mo.Mean m2 X 10-8 (SD): A (n=16) 1.48 (0.75)B (n=25) 1.72 (0.53)CA-OX SUPERSATBaselineNMean (SD): NRTime 1: mo.NMean (SD): NR | URIC ACIDBaselineMean mg (SD): A (n=31) 722 (239)B (n=33) 695 (227)% hyperUA: NRF/u Time 1: 36 mo.Mean mg (SD): A (n=16) 726 (210)B (n=25) 694 (194)% hyperUA: NRURIC-A SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | PHOSPHATEBaselineNMean (SD): NR% hyperP: NRF/u Time 1: mo.NMean (SD): NR% hyperP: NRCA-P SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | CITRATEBaselineMean mg (SD): A (n=31) 587 (37.4)B (n=33) 549 (280)% hypoCit: NRF/u Time 1: 36 mo.Mean mg (SD): A (n=16) 769 (289) [p<0.05]B (n=25) 548 (265)% hypoCit: NRSODIUMBaselineNMean (SD): NR% hyperNa: NRF/u Time 1: mo.NMean (SD): NR% hyperNa: NRMAGNESIUMBaselineMean mg (SD): A (n=31) 116 (44)B (n=33) 121 (47)% hypoMg: NRF/u Time 1: 36 mo.Mean mg (SD): A (n=16) 142 (42) [p<0.05]B (n=25) 105 (32)% hypoMg: NR | POTASSIUMBaselineMean mEq (SD): A (n=31) 56 (25)B (n=33) 58 (20)% hypoK: NRF/u Time 1: 36 mo.Mean mEq (SD): A (n=16) 89 (27) [p<0.001]B (n=25) 58 (17)% hypoK: NRVOLUMEBaselineMean L (SD): A (n=31) 1.98 (1.15)B (n=33) 1.74 (0.70)F/u Time 1: 36 mo.Mean L (SD): A (n=16) 2.01 (1.00)B (n=25) 1.79 (0.84)pHBaselineMean (SD): A (n=31) 6.01 (0.46)B (n=33) 5.96 (0.41)F/u Time 1: 36 mo.Mean (SD): A (n=16) 6.29 (0.58)B (n=25) 6.02 (0.32) |
| Hofbauer, 199420 | A. Sodium-potassium citrate 30 gm/d initially, then adjusted to keep urine pH 7.0-7.2 (n=25)B. Control (n=25)24 hour collectionStudy reported any data on participant compliance/adherence: No | CALCIUMBaselineNMean (SD): NR% hyperCa: A (n=25) 48%B (n=25) 40%F/u Time 1: 36 mo.NMean (SD): NR% hyperCa: A (n=16) 25%B (n=22) 45%OXALATEBaselineNMean (SD): NR% hyperOx: NRF/u Time 1: mo.NMean (SD): NR% hyperOx: NRCA-OX PRODUCTBaselineNMean (SD): NRTime 1: mo.NMean (SD): NRCA-OX SUPERSATBaselineNMean (SD): NRTime 1: mo.NMean (SD): NR | URIC ACIDBaselineNMean (SD): NR% hyperUA: NRF/u Time 1: mo.NMean (SD): NR% hyperUA: NRURIC-A SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | PHOSPHATEBaselineNMean (SD): NR% hyperP: NRF/u Time 1: mo.NMean (SD): NR% hyperP: NRCA-P SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | CITRATEBaselineMean mmol/L (SD): A (n=25) 1.3 (0.8)B (n=25) 1.27 (0.9)% hypoCit: A (n=25) 72%B (n=25) 65%F/u Time 1: 36 mo.Mean mmol/L (SD): A (n=16) 2.28 (0.8)B (n=22) 1.47 (0.9)% hypoCit: A (n=16) 25%B (n=22) 55%SODIUMBaselineNMean (SD): NR% hyperNa: NRF/u Time 1: mo.NMean (SD): NR% hyperNa: NRMAGNESIUMBaselineNMean (SD): NR% hypoMg: NRF/u Time 1: mo.NMean (SD): NR% hypoMg: NR | POTASSIUMBaselineNMean (SD): NR% hypoK: NRF/u Time 1: mo.NMean (SD): NR% hypoK: NRVOLUMEBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NRpHBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR |
| Barcelo, 199321 | A. Potassium citrate 30-60 mEq/d (n=28)B. Placebo (n=29)24 hour collectionStudy reported any data on participant compliance/adherence: Yes (interview and pill count) | CALCIUMBaselineNMean (SD): NR% hyperCa: NRF/u Time 1: mo.NMean (SD): NR% hyperCa: NROXALATEBaselineNMean (SD): NR% hyperOx: NRF/u Time 1: mo.NMean (SD): NR% hyperOx: NRCA-OX PRODUCTBaselineNMean (SD): NRTime 1: mo.NMean (SD): NRCA-OX SUPERSATBaselineNMean (SD): NRTime 1: mo.NMean (SD): NR | URIC ACIDBaselineNMean (SD): NR% hyperUA: NRF/u Time 1: mo.NMean (SD): NR% hyperUA: NRURIC-A SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | PHOSPHATEBaselineNMean (SD): NR% hyperP: NRF/u Time 1: mo.NMean (SD): NR% hyperP: NRCA-P SUPERSATBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NR | CITRATEBaselineMean nmol/day(SD): A (n=28) 1.9 (0.5)B (n=29) NR% hypoCit: NRF/u Time 1: 36 mo.Mean nmol/day(SD): A (n=18) 3.3 (0.5) [p<0.01]B (n=20) NR% hypoCit: NRSODIUMBaselineNMean (SD): NR% hyperNa: NRF/u Time 1: mo.NMean (SD): NR% hyperNa: NRMAGNESIUMBaselineNMean (SD): NR% hypoMg: NRF/u Time 1: mo.NMean (SD): NR% hypoMg: NR | POTASSIUMBaselineMean mEq/day(SD): A (n=28) 61 (17)B (n=29) NR% hypoK: NRF/u Time 1: 36 mo.Mean mEq/day(SD): A (n=18) 105 (41) [p<0.01]B (n=20) NR% hypoK: NRVOLUMEBaselineNMean (SD): NRF/u Time 1: mo.NMean (SD): NRpHBaselineMean (SD): A (n=28) 5.4 (0.5)B (n=29) NRF/u Time 1: 36 mo.Mean (SD): A (n=18) 6.4 (0.3) [p<0.01]B (n=20) NR |

**Abbreviation:** NR = not reported