

## Additional File 1

Table A1. Baseline characteristics of patients in five PTH change groups, baseline PTH 300-600

pg/mL

| Patient Characteristics                                   | PTH Change Group |              |              |              | No PTH Reduction | P        |
|-----------------------------------------------------------|------------------|--------------|--------------|--------------|------------------|----------|
|                                                           | Quartile 1       | Quartile 2   | Quartile 3   | Quartile 4   |                  |          |
| <i>n</i>                                                  | 266              | 290          | 284          | 278          | 539              |          |
| Mean (SD) percent change in PTH                           | -10.9 (6.0)      | -31.7 (5.9)  | -52.6 (6.1)  | -77.5 (9.0)  | +46.6 (40.4)     | NA       |
| Age, yrs.                                                 |                  |              |              |              |                  |          |
| Mean (SD)                                                 | 60.0 (14.5)      | 61.1 (14.1)  | 63.3 (13.6)  | 64.9 (13.2)  | 59.2 (15.0)      | < 0.0001 |
| 18-44                                                     | 17.7             | 14.1         | 9.9          | 7.2          | 17.1             | 0.001    |
| 45-64                                                     | 40.6             | 42.4         | 40.5         | 40.3         | 44.9             |          |
| 65-74                                                     | 24.8             | 26.2         | 27.1         | 28.4         | 22.1             |          |
| ≥ 75                                                      | 16.9             | 17.2         | 22.5         | 24.1         | 16.0             |          |
| Race                                                      |                  |              |              |              |                  |          |
| African American                                          | 49.3             | 42.8         | 45.4         | 43.2         | 51.6             | 0.03     |
| White                                                     | 29.7             | 35.5         | 32.4         | 27.7         | 25.8             |          |
| Other                                                     | 21.1             | 21.7         | 22.2         | 29.1         | 22.6             |          |
| Male sex                                                  | 55.3             | 55.9         | 48.2         | 48.2         | 54.7             | 0.01     |
| Dialysis duration, yrs., mean (SD)                        | 5.6 (4.3)        | 5.1 (3.9)    | 5.1 (4.2)    | 5.3 (3.9)    | 5.9 (4.6)        | 0.03     |
| BMI, kg/m <sup>2</sup> , mean (SD)                        | 27.3 (6.5)       | 28.4 (7.5)   | 28.0 (7.2)   | 27.7 (6.7)   | 27.5 (7.0)       | 0.3      |
| Intact PTH, pg/mL, pre-cinacalcet prescription, mean (SD) | 455.0 (83.0)     | 454.0 (81.0) | 454.0 (81.0) | 457.0 (78.0) | 447.0 (81.0)     | 0.40     |
| Corrected calcium, mg/dL, mean (SD)                       | 9.8 (0.7)        | 9.7 (0.7)    | 9.8 (0.6)    | 9.7 (0.7)    | 9.9 (0.7)        | 0.001    |
| < 9.0                                                     | 12.4             | 11.4         | 8.1          | 11.2         | 10.0             | 0.3      |
| ≥ 9.0-≤ 10.2                                              | 61.7             | 65.5         | 69.0         | 71.2         | 57.7             |          |
| > 10.2                                                    | 25.9             | 23.1         | 22.9         | 17.6         | 32.3             |          |
| Phosphorus, mg/dL, mean (SD)                              | 6.0 (1.5)        | 5.7 (1.3)    | 5.7 (1.4)    | 5.8 (1.6)    | 6.2 (1.7)        | < 0.0001 |
| < 3.5                                                     | 1.9              | 3.5          | 3.5          | 2.5          | 2.8              | 0.3      |
| ≥ 3.5-≤ 5.0                                               | 28.6             | 26.6         | 29.6         | 30.6         | 23.0             |          |
| > 5.0                                                     | 70.0             | 70.0         | 69.9         | 69.9         | 74.2             |          |
| Kt/V mean (SD)                                            | 1.7 (0.4)        | 1.7 (0.4)    | 1.7 (0.3)    | 1.7 (0.3)    | 1.7 (0.4)        | 0.8      |
| Primary cause of ESRD                                     |                  |              |              |              |                  |          |
| Diabetes                                                  | 40.2             | 43.1         | 40.1         | 46.8         | 38.0             | 0.2      |
| Hypertension                                              | 34.2             | 30.3         | 38.0         | 31.7         | 34.1             |          |
| Glomerulonephritis                                        | 9.4              | 12.4         | 8.1          | 11.2         | 12.6             |          |
| Other                                                     | 16.2             | 14.1         | 13.7         | 10.4         | 15.2             |          |
| Hospital days                                             |                  |              |              |              |                  |          |
| 0                                                         | 70.7             | 64.8         | 62.7         | 65.8         | 62.5             | 0.4      |
| 1-2                                                       | 5.3              | 7.2          | 9.9          | 6.1          | 7.8              |          |
| 3-5                                                       | 8.7              | 8.3          | 11.3         | 8.3          | 10.0             |          |
| > 5                                                       | 15.4             | 19.7         | 16.2         | 19.8         | 19.7             |          |

|                                                           |             |             |             |             |             |      |
|-----------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|------|
| Phosphate binder use at cinacalcet first prescription     |             |             |             |             |             |      |
| Calcium containing                                        | 39.5        | 40.7        | 39.4        | 45.7        | 41.0        | 0.6  |
| Non-calcium containing                                    | 78.2        | 81.7        | 77.5        | 77.0        | 79.2        | 0.7  |
| Combination                                               | 21.4        | 25.9        | 23.2        | 25.9        | 24.7        | 0.7  |
| None                                                      | 3.8         | 3.5         | 6.3         | 3.2         | 4.5         | 0.4  |
| Comorbidity                                               |             |             |             |             |             |      |
| ASHD                                                      | 25.6        | 30.3        | 34.9        | 29.5        | 26.0        | 0.06 |
| CHF                                                       | 25.9        | 25.9        | 28.2        | 27.7        | 25.2        | 0.9  |
| CVA/TIA                                                   | 7.1         | 6.6         | 7.8         | 9.4         | 10.0        | 0.4  |
| PVD                                                       | 23.3        | 25.2        | 28.9        | 28.4        | 25.1        | 0.5  |
| Other cardiac disease                                     | 23.3        | 25.2        | 19.0        | 21.6        | 20.0        | 0.3  |
| COPD                                                      | 13.2        | 9.7         | 10.2        | 13.0        | 12.2        | 0.6  |
| GI disease                                                | 2.6         | 4.8         | 6.3         | 5.8         | 5.0         | 0.3  |
| Liver disease                                             | 1.5         | 2.1         | 2.5         | 1.1         | 1.9         | 0.8  |
| Dysrhythmia                                               | 15.6        | 17.9        | 18.3        | 18.7        | 17.8        | 0.9  |
| Cancer                                                    | 7.1         | 4.5         | 6.0         | 4.3         | 4.1         | 0.3  |
| Diabetes                                                  | 53.4        | 55.5        | 53.9        | 58.6        | 51.0        | 0.3  |
| Days from last PTH level to first cinacalcet prescription | 13.8 (11.6) | 12.8 (11.2) | 13.6 (12.0) | 14.9 (13.0) | 15.3 (13.5) | 0.05 |

Patients were grouped based on quartiles of PTH decrease from first cinacalcet prescription.

Patients whose PTH levels increased or remained unchanged were assigned to “no PTH reduction” group.

Results are reported as percent of patients or mean  $\pm$  SD. *P* values: We used analysis of variance (ANOVA) and chi-square tests to evaluate differences in continuous and categorical characteristics, respectively, across all PTH change groups.

ASHD, atherosclerotic heart disease; BMI, body mass index determined using height and weight; CHF, congestive heart failure; COPD, chronic obstructive pulmonary disease; CVA/TIA, cerebral vascular accident/transient ischemic attack; ESRD, end-stage renal disease; GI, gastrointestinal; PTH, parathyroid hormone; PVD, peripheral vascular disease; SD, standard deviation.

Table A2. Baseline characteristics of patients in five PTH change groups, baseline PTH &gt; 600

pg/mL

| Patient Characteristics                                   | PTH Change Group |              |               |               |                  | <i>P</i> |
|-----------------------------------------------------------|------------------|--------------|---------------|---------------|------------------|----------|
|                                                           | Quartile 1       | Quartile2    | Quartile 3    | Quartile 4    | No PTH Reduction |          |
| <i>n</i>                                                  | 355              | 331          | 337           | 344           | 443              |          |
| Mean (SD) percent change in PTH                           | -11.4 (6.2)      | -31.9 (5.8)  | -51.9 (6.2)   | -78.8 (9.3)   | +28.7 (31.8)     | NA       |
| Age, yrs.                                                 |                  |              |               |               |                  |          |
| Mean (SD)                                                 | 55.9 (14.7)      | 57.6 (14.4)  | 59.0 (14.3)   | 60.7 (13.4)   | 56.1 (15.0)      | < 0.0001 |
| 18-44                                                     | 23.7             | 20.2         | 16.9          | 12.2          | 25.1             | 0.001    |
| 45-64                                                     | 45.9             | 47.7         | 46.6          | 45.4          | 44.5             |          |
| 65-74                                                     | 20.0             | 21.8         | 23.7          | 27.9          | 19.0             |          |
| ≥ 75                                                      | 10.4             | 10.8         | 12.8          | 14.5          | 11.5             |          |
| Race                                                      |                  |              |               |               |                  |          |
| African American                                          | 53.8             | 55.6         | 54.9          | 53.5          | 54.9             |          |
| White                                                     | 24.8             | 21.8         | 23.4          | 23.6          | 23.6             |          |
| Other                                                     | 21.4             | 22.7         | 21.7          | 23            | 23               |          |
| Male sex                                                  | 54.7             | 54.1         | 50.7          | 45.1          | 52.6             |          |
| Dialysis duration, yrs., mean (SD)                        | 5.8 (4.4)        | 6.4 (4.3)    | 5.6 (3.8)     | 6.1 (4.8)     | 6.2 (4.5)        |          |
| BMI, mean (SD)                                            | 28.0 (7.2)       | 27.5 (6.5)   | 27.9 (7.2)    | 26.7 (5.9)    | 27.6 (7.4)       |          |
| Intact PTH, pg/mL, pre-cinacalcet prescription, mean (SD) | 1055.0 (528.0)   | 1021 (481.0) | 979.0 (365.0) | 969.0 (384.0) | 981.0 (409.0)    | 0.045    |
| Corrected calcium, mg/dL                                  |                  |              |               |               |                  |          |
| Mean (SD)                                                 | 9.7 (0.7)        | 9.7 (0.7)    | 9.7 (0.7)     | 9.6 (0.7)     | 9.8 (0.7)        |          |
| < 9.0                                                     | 16.3             | 10.9         | 12.8          | 15.7          | 12.2             |          |
| ≥ 9.0-≤ 10.2                                              | 62.8             | 71.0         | 69.4          | 70.1          | 63.2             |          |
| > 10.2                                                    | 20.0             | 18.1         | 17.8          | 14.2          | 24.6             |          |
| Phosphorus, mg/dL                                         |                  |              |               |               |                  |          |
| Mean (SD)                                                 | 6.7 (1.6)        | 6.4 (1.5)    | 6.1 (1.6)     | 6.0 (1.5)     | 6.6 (1.8)        | < 0.0001 |
| < 3.5                                                     | 1.1              | 1.2          | 3.3           | 1.5           | 2.3              |          |
| ≥ 3.5-≤ 5.0                                               | 12.7             | 19.0         | 21.4          | 27.3          | 15.6             |          |
| > 5.0                                                     | 86.2             | 79.8         | 75.4          | 71.2          | 82.2             |          |
| Kt/V mean (SD)                                            | 1.6 (0.5)        | 1.6 (0.5)    | 1.7 (0.4)     | 1.7 (0.4)     | 1.7 (0.5)        | 0.8      |
| Primary cause of ESRD                                     |                  |              |               |               |                  |          |
| Diabetes                                                  | 36.6             | 39.6         | 36.2          | 43.9          | 33.6             | 0.4      |
| Hypertension                                              | 32.4             | 31.7         | 31.8          | 30.8          | 35.2             |          |
| Glomerulonephritis                                        | 13.8             | 14.5         | 13.4          | 10.2          | 14               |          |
| Other                                                     | 17.2             | 14.2         | 18.7          | 15.1          | 17.2             |          |
| Hospital days                                             |                  |              |               |               |                  |          |
| 0                                                         | 61.4             | 63.8         | 58.5          | 54.9          | 58.2             | 0.5      |
| 1-2                                                       | 8.7              | 7.0          | 9.2           | 7.9           | 9                |          |
| 3-5                                                       | 10.1             | 10.0         | 9.5           | 14.5          | 11.1             |          |
| > 5                                                       | 19.7             | 19.3         | 22.9          | 22.7          | 21.7             |          |
| Phosphate binder use at first cinacalcet                  |                  |              |               |               |                  |          |

|                                                           |             |             |             |             |             |      |
|-----------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|------|
| prescription                                              |             |             |             |             |             |      |
| Calcium containing                                        | 41.4        | 38.7        | 41.3        | 42.7        | 41.1        | 0.9  |
| Non-calcium containing                                    | 82.0        | 80.1        | 81.3        | 77.0        | 83.8        | 0.2  |
| Combination                                               | 27.3        | 22.4        | 26.1        | 23.3        | 29.4        | 0.2  |
| None                                                      | 3.9         | 3.6         | 3.6         | 3.5         | 4.5         | 0.9  |
| Comorbidity                                               |             |             |             |             |             |      |
| ASHD                                                      | 23.1        | 25.1        | 30.3        | 28.2        | 26.0        | 0.2  |
| CHF                                                       | 24.2        | 25.1        | 28.2        | 29.4        | 27.5        | 0.5  |
| CVA/TIA                                                   | 10.1        | 10.0        | 11.3        | 9.6         | 8.1         | 0.7  |
| PVD                                                       | 23.1        | 24.2        | 27.0        | 29.4        | 23.9        | 0.3  |
| Other cardiac disease                                     | 25.6        | 23.0        | 24.3        | 22.4        | 26.6        | 0.6  |
| COPD                                                      | 10.4        | 12.4        | 13.4        | 12.5        | 10.4        | 0.6  |
| GI disease                                                | 5.4         | 5.5         | 6.8         | 7.3         | 6.1         | 0.8  |
| Liver disease                                             | 2.0         | 0.6         | 3.0         | 3.5         | 3.2         | 0.1  |
| Dysrhythmia                                               | 18.6        | 19.0        | 20.8        | 18.9        | 14.9        | 0.3  |
| Cancer                                                    | 4.5         | 5.1         | 6.5         | 4.4         | 2.9         | 0.2  |
| Diabetes                                                  | 49.0        | 50.8        | 52.5        | 53.5        | 44          | 0.06 |
| Days from last PTH level to first cinacalcet prescription | 14.5 (12.4) | 13.4 (10.6) | 14.8 (12.4) | 14.5 (12.3) | 15.5 (13.4) | 0.2  |

Patients were grouped based on quartiles of PTH decrease from first cinacalcet prescription.

Patients whose PTH levels increased or remained unchanged were assigned to “no PTH reduction” group.

Results are reported as percent of patients or mean  $\pm$  SD. *P* values: We used analysis of variance (ANOVA) and chi-square tests to evaluate differences in continuous and categorical characteristics, respectively, across all PTH change groups.

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