

## Higher Nocturnal Blood Pressure and Blunted Nocturnal Dipping Are Associated with Decreased Daytime Urinary Sodium and Potassium Excretion in CKD Patients

### Supplemental Material

#### Strobe Statement.

**Table S1.** BP, PR, PP, and nocturnal dipping, by quartiles of day : night ratio of urinary sodium and potassium excretion rate.

**Table S2.** Characteristics of patients with CKD according to quartiles of 24-hour urinary excretion of sodium and potassium.

**Table S3.** Nighttime and daytime BP values and dipping proportion according to 24h urinary sodium and potassium excretion categories and day : night ratio of the urinary sodium and potassium excretion status.

**Table S4.** Multivariate logistic regression analysis for nocturnal SBP according to day : night ratio of urinary sodium and potassium excretion rate categories among CKD patients.

#### STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

	Item No	Recommendation	Page No
<b>Title and abstract</b>	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1-2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	1-2
<b>Introduction</b>			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2

Objectives	3	State specific objectives, including any prespecified hypotheses	3
<b>Methods</b>			
Study design	4	Present key elements of study design early in the paper	3
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	3
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	3
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	3-4
Data sources/ measurement	8	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	3-4
Bias	9	Describe any efforts to address potential sources of bias	4
Study size	10	Explain how the study size was arrived at	3
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	3-4
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	4
		(b) Describe any methods used to examine subgroups and interactions	4
		(c) Explain how missing data were addressed	Tables 1, Tables 3

		(d) If applicable, describe analytical methods taking account of sampling strategy	4
		(e) Describe any sensitivity analyses	-
<b>Results</b>			
Participants	13	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	3
		(b) Give reasons for non-participation at each stage	3
		(c) Consider use of a flow diagram	-
Descriptive data	14	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	5, Table1
		(b) Indicate number of participants with missing data for each variable of interest	Table 1, Tables 3
Outcome data	15	Report numbers of outcome events or summary measures	Table 1, Table 2 Table 4
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Table 3, Table S4
		(b) Report category boundaries when continuous variables were categorized	3-4
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	Table 3

Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	4, Table 2, Table S3
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	7
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	9
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	7-9
Generalisability	21	Discuss the generalisability (external validity) of the study results	9
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	-

**Table S1. BP, PR, PP, and nocturnal dipping, by quartiles of day : night ratio of urinary sodium and potassium excretion rate**

Variable	Day : night ratio of the urinary sodium excretion rate					Day : night ratio of the urinary potassium excretion rate				
	Q1	Q2	Q3	Q4	<i>P Value</i>	Q1	Q2	Q3	Q4	<i>P Value</i>
	≤1.00 (n=788)	1.01-1.52 (n=788)	1.53-2.52 (n=788)	>2.52 (n=788)		≤ 1.44 (n=788)	1.44-1.94 (n=788)	1.95-2.62 (n=787)	>2.62 (n=789)	
Daytime SBP (mmHg)	127.00 (118.00-139.00)	125.00 (115.00-135.00)	121.00 (112.00-131.00)	119.00 (110.00-128.00)	< 0.001	126.00 (116.00-138.00)	124.00 (115.00-135.00)	122.00 (114.00-133.00)	119.00 (110.00-128.00)	< 0.001
Daytime DBP (mmHg)	84.00 (76.00-92.00)	83.00 (75.00-90.00)	80.00 (73.00-88.00)	78.00 (71.00-85.00)	< 0.001	83.00 (75.00-91.00)	82.00 (74.00-89.00)	81.00 (74.00-89.00)	78.00 (71.00-85.00)	< 0.001
Daytime PR (bpm)	76.00 (70.00-82.00)	74.50 (69.00-82.00)	75.00 (69.00-81.00)	76.00 (70.00-83.00)	0.044	76.00 (70.00-83.00)	75.00 (70.00-83.00)	75.00 (69.00-82.00)	74.00 (68.00-81.00)	0.002
Daytime PP (mmHg)	43.00 (37.00-50.00)	41.00 (37.00-47.00)	40.00 (36.00-47.00)	40.00 (36.00-46.00)	< 0.001	42.00 (37.00-49.00)	42.00 (36.00-48.00)	41.00 (36.00-47.00)	40.00 (36.00-46.00)	< 0.001
Nighttime SBP (mmHg)	124.00 (114.00-138.00)	120.00 (110.00-132.00)	115.00 (106.00-127.00)	112.00 (103.00-122.00)	< 0.001	122.00 (111.00-137.00)	119.00 (109.00-133.00)	117.00 (107.00-129.00)	113.00 (103.00-123.00)	< 0.001
Nighttime DBP (mmHg)	80.00 (73.00-89.00)	78.00 (71.00-86.00)	74.00 (67.00-84.00)	71.50 (64.00-79.00)	< 0.001	79.00 (71.00-87.00)	77 (70-86)	76.00 (68.00-84.00)	72.00 (65.00-72.00)	< 0.001
Nighttime PR (bpm)	67.00 (60.00-74.00)	65.00 (60.00-72.00)	64.00 (58.00-70.00)	64.00 (59.00-70.00)	< 0.001	67.00 (61.00-75.00)	66 (60-72.75)	64 (59-71)	63.00 (58.00-69.00)	< 0.001
Nighttime PP (mmHg)	43.00 (37.00-51.00)	41.00 (36.00-48.00)	40.00 (36.00-47.00)	40.00 (35.00-45.00)	< 0.001	42.00 (37.00-50.00)	41.50 (36.00-49.00)	41.00 (36.00-47.00)	40.00 (35.00-46.00)	< 0.001
Dipping SBP (mmHg) (% of day)	-2.42 (-6.54-2.66)	-3.59 (-7.69-0.74)	-4.33 (-8.86-0.00)	-5.42 (-9.40--1.59)	< 0.001	-3.32 (-7.44-1.32)	-3.49 (-8.03-0.72)	-4.08 (-8-0)	-4.88 (-8.74-0.87)	< 0.001
Dipping DBP (mmHg)	-4.05	-5.33 (-10-0)	-6.25 (-11.84--1.227)	-7.80	< 0.001	-4.65 (-9.72-0)	-5.56 (-10.51-	-5.98 (-11.39--1.15)	-6.90 (-12.22-	< 0.001

(% of day)	(-8.82-1.28)			(-12.87--2.82)				-1.08)		-2.15)
Dipping PR (bpm) (%)	-10.98	-12.5	-13.70 (-18.31--9.19)	-14.69	< 0.001	-11.43 (-16.44-	-12.5 (-17.13-	-13.70 (-18.47-	-14.71 (-19.23-	< 0.001
of day)	(-16.18--6.02)	(-16.90--8.20)		(-20--9.52)		-6.25)	-7.14)	-9.07)	-10)	
Dipping PP (mmHg)	1.69 (-6-9.68)	0 (-6.82-6.67)	0 (-6.98-5.56)	0 (-7.19-6.08)	< 0.001	0 (-7.14-7.84)	0 (-6.63-6.82)	0 (-6.25-6.67)	0 (-7.41-6.67)	
(% of day)										0.842

BP, blood pressure; bpm, beats per minute; DBP, diastolic blood pressure; PP, pulse pressure; PR, pulse rate; SBP, systolic blood pressure.

**Table S2. Characteristics of patients with CKD according to quartiles of 24-hour urinary excretion of sodium and potassium**

Variable	Urinary Sodium Excretion (mmol/24h)				Urinary Potassium Excretion (mmol/24 h)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	≤ 83.66 (n = 788)	83.67-123.14 (n = 788)	123.15-172.26 (n = 788)	≥ 172.27 (n = 788)	≤ 24.57 (n = 788)	24.58-32.20 (n = 788)	32.21-41.65 (n = 788)	≥ 41.66 (n = 788)
Age (years)	47.38±16.10	48.13±14.41	47.99±14.01	47.02±13.85	47.04±15.92	48.05±14.37	47.10±14.15	48.32±13.92
≥ 60 years (%)	26.90	25.63	22.21	19.54	26.02	24.87	21.19	22.21
Men (%)	51.90	53.05	55.33	66.88	49.62	51.40	58.88	67.13
<b>Risk factors</b>								
BMI (kg/m <sup>2</sup> )	22.7 (20.46-25.72)	23.46 (20.94-25.79)	24.05 (21.60-26.34)	24.98 (22.77-27.77)	22.68 (20.28-25.36)	23.65 (21.37-26.08)	24.20 (21.67-26.46)	25.07 (22.48-27.87)
Obesity (BMI ≥ 30 kg/m <sup>2</sup> )	4.95	6.60	6.35	12.06	4.44	5.96	7.49	12.06
Diabetes mellitus (%)	20.18	17.64	21.95	26.90	18.27	20.69	19.54	28.17
Dyslipidemia (%)	93.78	90.36	90.48	94.29	92.01	91.37	92.89	92.64
Cardiovascular	15.10	12.94	13.96	15.36	13.45	15.61	13.45	14.85

disease (%)

Antihypertensive medication (%)	64.72	65.61	65.74	70.94	63.96	67.64	67.01	68.40
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Immunosuppressive agents* (%)	8.76	8.25	8.76	7.23	6.60	7.36	10.41	8.63
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Current smoking (%)	2.92	2.03	2.92	3.93	3.17	2.79	2.79	3.05
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**BP**

Office SBP (mmHg)	130.00 (115.00-146.00)	131.00 (117.00-149.00)	131.00 (119.00-147.00)	133.00 (119.00-148.00)	131.00 (115.25-148.00)	132.00 (119.00-149.00)	131.00 (118.00-147.00)	131.00 (118.00-146.00)
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Office DBP (mmHg)	83.00 (75.00-93.00)	84.00 (75.00-93.00)	84.00 (75.00-93.00)	84.00 (76.00-95.00)	83.00 (74.00-93.00)	84.00 (77.00-93.75)	84.00 (76.00-93.00)	83.00 (76.00-93.00)
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24-h SBP (mmHg)	120.00 (112.00-132.00)	120.00 (111.00-131.00)	122.00 (113.00-133.00)	124.00 (114.00-135.00)	120.00 (112.00-132.00)	122.00 (113.00-132.00)	122.00 (112.00-132.00)	122.00 (113.00-133.75)
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24-h DBP (mmHg)	78.00 (71.00-87.00)	79.00 (72.00-87.00)	80.50 (73.00-88.00)	82.00 (74.00-89.00)	78.00 (71.00-87.00)	80.00 (72.00-88.00)	80.50 (72.25-88.00)	80.00 (73.00-88.00)
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Daytime SBP (mmHg)	122.00 (113.00-133.00)	121.00 (112.00-132.00)	124.00 (114.00-133.00)	125.00 (115.00-137.00)	121.00 (113.00-134.00)	123.50 (114.00-133.00)	123.00 (113.00-133.00)	124.00 (114.00-134.75)
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Daytime DBP (mmHg)	80.00 (73.00-88.00)	80.00 (72.25-88.00)	82.00 (74.00-89.00)	83.00 (76.00-90.00)	80.00 (72.00-89.00)	81.00 (73.25-89.00)	82.00 (74.00-89.00)	82.00 (74.00-89.00)
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Daytime PP (mmHg)	76.00 (70.00-83.00)	74.00 (68.00-81.00)	75.00 (69.00-82.00)	75.50 (70.00-82.00)	75.50 (69-82)	75.00 (69.00-82.00)	76.00 (70.00-82.00)	75.00 (69.00-82.00)
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Nighttime SBP (mmHg)	116.50 (107.00-130.00)	116.00 (105.00-128.00)	118.00 (107.00-131.00)	119.00 (110.00-132.00)	116.00 (106.00-130.00)	118.00 (108.00-130.00)	118.00 (107.00-130.00)	118.00 (108.00-131.00)
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0)

Nighttime DBP (mmHg)	75.00 (68.00-83.00)	75.00 (67.00-84.00)	77.00 (68.25-86.00)	78.00 (70.00-86.00)	75.00 (68.00-84.00)	77.00 (68.00-85.00)	76.00 (68.00-85.00)	77.00 (69.00-85.00)
Nighttime PP (mmHg)	66.00 (60.00-73.00)	64.00 (58.00-70.00)	65.00 (59.00-72.00)	66.00 (60.00-72.00)	66.00 (60.00-73.00)	65.00 (60.00-72.00)	65.00 (59.00-71.00)	65.00 (59.00-71.00)
Dipping SBP (mmHg) (% of day)	-3.66 (-8.06-0.72)	-4.55 (-8.33- -0)	-3.78 (-7.96-0)	-3.98 (-8.07- 0)	-3.92 (-7.99- 0)	-3.46 (-8.06-0.68)	-4.40 (-8.20-0)	-4.13 (-8.06-0)
Dipping DBP (mmHg) (% of day)	-6.02 (-11.36- 0)	-6.16 (-11.24- 1.14)	-5.13 (-10.60- -1.10)	-5.62 (-10.65- -1.08)	-5.53 (-11.00- -1.11)	-5.56 (-10.39- -0.96)	-6.15 (-11.69- -1.08)	-5.62 (-10.81- -1.10)
Dipping PP (mmHg) (% of day)	-12.5 (-17.86- -7.14)	-18.75 (-13.58- -8.83)	-12.90 (-17.81- -8.20)	-12.82 (-17.20- -8.12)	-11.95 (-17.53- -6.37)	-12.82 (-17.65- -8.07)	-13.58 (-18.30- -9.04)	-13.41 (-18.08- -8.45)
Office BP < 140/90 mmHg (%)	57.11	53.68	53.43	52.79	54.82	51.90	54.44	55.84
24-h ABPM < 130/80 mmHg (%)	50.00	48.98	43.27	38.58	49.37	44.92	43.15	43.40
Daytime ABPM < 135/85 mmHg (%)	62.18	63.07	55.71	51.65	61.42	56.85	58.38	55.96
Nighttime ABPM < 120/70 mmHg (%)	28.555	31.22	26.40	23.86	28.68	27.03	28.30	26.02
<b>Circadian profile</b>								
<b>SBP</b>								
Dipper (%)	16.75	17.51	15.86	15.10	16.37	16.37	16.12	16.37
Nondipper (%)	54.82	58.88	57.36	58.01	57.74	56.22	57.36	58.76
Riser (%)	28.17	23.48	26.65	25.38	25.76	27.28	26.14	24.49
<b>DBP</b>								
Dipper (%)	30.20	31.22	26.78	28.68	28.55	27.79	31.35	29.19

Nondipper (%)	46.19	48.22	52.66	50.00	49.37	50.63	47.21	49.87
Riser (%)	23.22	20.56	20.43	20.81	22.08	21.45	20.94	20.56
eGFR by CKD-EPI † (mL/min/1.73 m <sup>2</sup> )	65.00 (30.03-100.00)	65.00 (34.25-101.00)	66.00 (33.00-99.00)	74.00 (41.00-102.50)	63.48 (26.51-103.00)	62.00 (31.00-100.00)	70.00 (39.79-100.00)	72.00 (40.02-100.00)
eGFR by CKD-EPI < 60 (mL/min/1.73 m <sup>2</sup> )	45.69	43.78	45.30	38.96	46.32	47.21	40.86	39.3 4
Fasting blood glucose (mmol/L)	4.72 (4.22-5.40)	4.8 (4.3- 5.33)	4.8 (4.3-5.4)	4.89 (4.4-5.61)	4.70 (4.24-5.30)	4.70 (4.30-5.40)	4.80 (4.30-5.50)	4.90 (4.39-5.70)
24 h V (L)	1.3 (0.89-1.82)	1.69 (1.31-2.11)	1.86 (1.51-2.32)	2.28 (1.81-2.79)	1.41 (0.97-1.88)	1.68 (1.29-2.19)	1.90 (1.49-2.39)	2.23 (1.74-2.74)
Na excretion (mmol/24 h)	59.38 (41.48-71.53)	104.90 (94.36-114.12)	145.42 (133.04-157.69)	214.18 (190.91-254.76)	84.95 (53.63-123.04)	116.70 (83.35-154.02)	133.95 (98.97-183.81)	164.76 (119.14-220.29)
K excretion (mmol/24 h)	25.05 (18.25-32.63)	30.55 (24.19-38.72)	33.29 (26.62-42.32)	40.25 (32.42-52.14)	19.50 (15.77-22.29)	28.46 (26.72-30.46)	36.32 (34.06-38.56)	50.39 (45.39-58.89)
Plasma Na (mmol/L)	140.00 (138.00-142.00)	141.00 (139.00-142.4.00)	141.00 (139.00-142.80)	141.00 (139.00-143.00)	140.90 (139.0-142.30)	141.00 (139-142.73)	141.00 (139.00-142.10)	141.00 (139.00-142.70)
Plasma K (mmol/L)	3.90 (3.60-4.20)	3.88 (3.60-4.15)	3.81 (3.58-4.14)	3.80 (3.55-4.12)	3.80 (3.50-4.16)	3.88 (3.60-4.14)	3.82 (3.60-4.19)	3.90 (3.63-4.20)
<b>Albuminuria category (%)</b>								
A1 (normal to mildly increased)	16.12	20.94	20.43	21.57	17.13	17.77	21.19	22.97
A2 (moderately increased)	22.84	25.00	27.28	22.84	24.62	27.03	22.34	23.98

A3 (severely increased) 61.04 54.06 52.28 55.46 58.25 55.20 56.47 52.92

Results are medians (interquartile range) or percentage unless otherwise specified. ABPM, ambulatory blood pressure monitoring; BP, blood pressure; BMI, body mass index; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; Na, sodium; K, potassium; SBP, systolic blood pressure.

\*Any exposure to glucocorticoids or immunosuppressive agents within 12 weeks.

†GFR was evaluated using EPI equation.

**Table S3. Nighttime and daytime BP values and dipping proportion according to 24h urinary sodium and potassium excretion categories and day : night ratio of the urinary sodium and potassium excretion status**

	Day : night ratio of the urinary sodium excretion										Day : night ratio of the urinary potassium excretion									
	24h urinary sodium excretion ≤ 123.14					24h urinary sodium excretion > 123.14					24h urinary potassium excretion ≤ 32.20					24h urinary potassium excretion > 32.20				
	Q1	Q2	Q3	Q4	P	Q1	Q2	Q3	Q4	P	Q1	Q2	Q3	Q4	P	Q1	Q2	Q3	Q4	P
n (%)	402 (25.51 )	382 (24.24 )	373 (23.67 )	419 (26.59 )	Val ue	386 (24.49 )	406 (25.76 )	415 (26.33 )	369 (23.41 )	Value	458 (29.06 )	407 (25.82 )	364 (23.10 )	347 (22.02 )	Value	330 (20.94 )	381 (24.18 )	423 (26.84 )	(28.05)	Value
Nighttime SBP mmHg	122.50 (112.00-138.00)	118.00 (105.00-130.00)	114.00 (103.00-121.00)	111.00 (103.00-121.00)	<0.001	125.50 (116.00-140.00)	121.00 (112.00-133.00)	116.00 (106.00-128.00)	112.00 (102.00-123.00)	<0.001	120.00 (109.00-136.00)	119.00 (109.00-131.00)	116.00 (107.00-122.00)	112.00 (103.00-122.00)	<0.001	123.00 (112.00-138.00)	120.00 (109.00-134.00)	117.00 (107.00-128.00)	114.00 (104.00-124.00)	<0.001

	)																			
Nighttime	79.00	76.0	73.	71.0	<0.	82	80	76	72	<0.00	78.50	76.00	75.0	71.00	<0.00	81.00	77.00	77.00	73.00	<0.00
DBP mmHg	(71.00	0	00	0	001	(74-90	(72-8	(68-85	(64-80)	1	(71.00-87.	(70.00-	0	(64.00	1	(73.00-	(70.00-	(68.00-	(65.00-81.	1
	-87.25	(69-	(65-	(64-		)	8)	)			00)	86.00)	(68.0	-80.00		88.00)	87.00)	85.00)	00)	
	)	84)	81)	79)									0-84.	)						
													00)							
Daytime	125.50	123.	120	119.	<0.	128.0	126.0	123.00	119.00	<0.00	125.00	123.00	122.	118.0	<0.00	127.00	125.00	122.00	120.00	<0.00
SBP mmHg	(116.0	00	.00	00	001	0	0	(113.0	(110.00-1	1	(115.00-1	(114.00	00	0	1	(117.0	(115.00-	(114.0	(110.00-12	1
	0-139.	(11	(11	(110		(119.0	(117.0	0-133.	29.00)		38.00)	-135.00	(113.	(110.0		0-139.	-136.00	0-134.	9.00)	
	00)	3.00	1.0	.00-		0-141.	0-136.	00)			)	25-1	0-126.		00)	)	00)			
		-13	0-1	127.		00)	00)					33.0	00)							
		3.25	29.	00)								0)								
	)		00)																	
Daytime	83.00	80.0	78.	77.0	<0.	85.00	84.00	82.00	78.00	<0.00	82.00	82.00	80.5	76.00	<0.00	84.00	82.00	82.00	79.00	<0.00
DBP mmHg	(74.00	0	00	0	001	(77.00	(77.00	(73.00	(72.00-86.	1	(74.00-92.	(74.00-	0	(71.00	1	(76.00-	(75.00-	(74.00-	(72.00-85.	1
	-91.00	(73-	(72.	(71.		-92.00	-91.00	-89.00	50)		00)	89.00)	(73.0	-85.00		91.00)	90.00)	89.00)	00)	
	)	88.2	00-	00-8		)	)	)					0-89.	)						
		5)	86.	5.00									00)							
			00)	)																
Dippers*	11.19	17.0	18.	21.5	<0.	10.39	12.59	18.36	20.98	<0.00	14.63	15.27	17.8	18.50	0.380	13.98	15.22	16.39	18.91	0.300
(%)		2	87	3	001					1			6							
Nondippers	52.99	56.8	57.	60.5	0.2	52.21	58.77	58.94	63.76	0.017	55.68	56.16	55.7	61.27	0.379	53.19	56.96	61.05	60.59	0.127
* (%)		1	41	3	05								7							
Risers* (%)	35.82	26.1	23.	17.9	<0.	37.40	28.64	22.71	15.26	<0.00	29.69	28.57	26.3	20.23	0.016	32.83	27.82	22.57	20.50	<0.00
		8	72	4	001					1			7							1

Data are given as n (%) for categorical variables and medians (interquartile range) for continuous variables. BP, blood pressure; DBP, diastolic blood pressure; SBP, systolic blood pressure.

\*Percent of SBP circadian patterns (dippers, nondippers, and risers).

**Table S4. Multivariate logistic regression analysis for nocturnal SBP according to day : night ratio of urinary sodium and potassium excretion rate categories among CKD patients**

Dependent Variable	Model	Day : Night Ratio of Urinary Sodium Excretion					Day : Night Ratio of Urinary potassium Excretion				
		Q1	Q2	Q3	Q4	P Value	Q1	Q2	Q3	Q4	P Value
		≤ 1.00	1.01-1.52	1.53-2.52	> 2.52		≤ 1.44	1.44-1.9	1.95-2.62	> 2.62	
<b>High nocturnal BP/ PR</b>											
SBP	1	Ref	0.62 (0.50-0.75)	0.38 (0.31-0.47)	0.25 (0.21-0.31)	<0.001	Ref	0.78 (0.64-0.96)	0.59 (0.48-0.72)	0.39 (0.32-0.47)	<0.001
	2	Ref		0.45 (0.37-0.56)	0.33 (0.27-0.41)	<0.001	Ref	0.77 (0.63-0.95)	0.64 (0.52-0.79)	0.46 (0.37-0.56)	<0.001
	3	Ref	0.66 (0.54-0.81)			<0.001	Ref	0.80 (0.64-1.00)	0.74 (0.59-0.93)	0.62 (0.50-0.80)	0.002
	4	Ref	0.73 (0.59-0.92)	0.61 (0.49-0.77)	0.47 (0.37-0.60)	<0.001	Ref	0.78 (0.62-0.98)	0.72 (0.57-0.90)	0.62 (0.49-0.78)	0.001
	5	Ref	0.72 (0.58-0.90)	0.60 (0.48-0.76)	0.47 (0.37-0.60)	<0.001	Ref	0.78 (0.62-0.98)	0.72 (0.57-0.90)	0.61 (0.48-0.78)	0.001
		Ref	0.72 (0.58-0.91)	0.60 (0.48-0.76)	0.47 (0.37-0.59)						

DBP	1		0.34 (0.27-0.44)	0.25 (0.20-0.32)	< 0.001	Ref	0.75 (0.59-0.95)	0.57 (0.45-0.72)	0.36 (0.29-0.50)	<	
		Ref	0.66 (0.51-0.86)							0.001	
	2	Ref	0.69 (0.56-0.85)	0.58 (0.47-0.73)	0.41 (0.32-0.53)	< 0.001	Ref	0.74 (0.58-0.95)	0.63 (0.49-0.79)	0.43 (0.34-0.54)	<
										0.001	
	3	Ref	0.81 (0.61-1.06)	0.52 (0.40-0.68)	0.45 (0.34-0.59)	< 0.001	Ref	0.76 (0.58-0.99)	0.72 (0.56-0.93)	0.55 (0.43-0.71)	<
									0.001		
	4	Ref	0.79 (0.60-1.05)	0.52 (0.39-0.67)	0.45 (0.34-0.59)	< 0.001	Ref	0.75 (0.58-0.98)	0.70 (0.54-0.91)	0.54 (0.42-0.70)	<
										0.001	
	5	Ref	0.80 (0.60-1.05)	0.52 (0.40-0.68)	0.45 (0.34-0.58)	< 0.001	Ref	0.75 (0.57-0.98)	0.70 (0.54-0.91)	0.36 (0.41-0.69)	<
										0.001	
PR	1	Ref	0.93 (0.74-1.18)	0.71 (0.56-0.89)	0.73 (0.58-0.91)	0.004	Ref	0.83 (0.65-1.05)	0.73-0.57-0.92	0.49 (0.39-0.61)	<
										0.001	
	2	Ref	0.93 (0.74-1.18)	0.71 (0.57-0.90)	0.74 (0.58-0.93)	0.007	Ref	0.82 (0.65-1.04)	0.72 (0.57-0.92)	0.48 (0.8-0.61)	<
										0.001	
	3	Ref	1.01 (0.79-1.30)	0.86 (0.67-1.10)	0.96 (0.75-1.24)	0.500	Ref	0.87 (0.67-1.11)	0.78 (0.61-1.01)	0.58 (0.45-0.74)	<
										0.001	
	4	Ref	1.01 (0.79-1.30)	0.86 (0.67-1.10)	0.97 (0.75-1.25)	0.519	Ref	0.88 (0.68-1.13)	0.79 (0.62-1.02)	0.59 (0.46-0.75)	<
										0.001	
	5	Ref	1.02 (0.79-1.30)	0.86 (0.67-1.10)	0.97 (0.75-1.25)	0.513	Ref	0.87 (0.68-1.13)	0.79 (0.62-1.02)	0.58 (0.46-0.75)	<
										0.001	
<b>Nocturnal BP/PR risers</b>											
SBP	1	Ref		0.35 (0.27-0.44)	< 0.001	Ref	0.87 (0.70-1.09)	0.71 (0.57-0.89)	0.57 (0.45-0.71)	<	
			0.66 (0.53-0.81)	0.52 (0.42-0.65)						0.001	
	2	Ref	0.72 (0.55-0.93)	0.40 (0.31-0.51)	0.32 (0.25-0.41)	< 0.001	Ref	0.86 (0.69-1.07)	0.76 (0.60-0.95)	0.63 (0.50-0.80)	0.001
	3	Ref	0.72 (0.57-0.90)	0.62 (0.49-0.80)	0.46 (0.34-0.58)	< 0.001	Ref	0.85 (0.67-1.06)	0.75 (0.59-0.95)	0.65 (0.51-0.84)	0.006

	4	Ref			0.45 (0.34-0.58)	<0.001	Ref	0.84 (0.67-1.06)	0.744 (0.59-0.94)	0.65 (0.51-0.84)	0.006
			0.72 (0.57-0.90)	0.61 (0.49-0.78)							
	5	Ref			0.44 (0.34-0.58)	<0.001	Ref	0.84 (0.67-1.06)	0.75 (0.59-0.94)	0.64 (0.50-0.83)	
			0.72 (0.58-0.90)	0.61 (0.48-0.78)							0.005
DBP	1	Ref	0.70 (0.56-0.87)	0.55 (0.43-0.69)	0.38 (0.30-0.49)	<0.001	Ref	0.69 (0.55-0.87)	0.66 (0.52-0.83)	0.51 (0.40-0.65)	<
											0.001
	2	Ref	0.72 (0.58-0.91)	0.60 (0.47-0.76)	0.44 (0.34-0.57)	<0.001	Ref	0.67 (0.53-0.85)	0.68 (0.54-0.87)	0.55 (0.43-0.71)	<
											0.001
	3	Ref	0.75 (0.59-0.94)	0.63 (0.49-0.81)	0.47 (0.36-0.62)	<0.001	Ref	0.66 (0.52-0.85)	0.68 (0.53-0.87)	0.59 (0.46-0.77)	<
											0.001
	4	Ref	0.74 (0.59-0.94)	0.62 (0.49-0.80)	0.47 (0.36-0.62)	<0.001	Ref	0.66 (0.52-0.84)	0.68 (0.53-0.87)	0.59 (0.46-0.77)	<
											0.001
	5	Ref	0.75 (0.59-0.95)	0.63 (0.49-0.81)	0.47 (0.35-0.62)	<0.001	Ref	0.66 (0.52-0.84)	0.68 (0.53-0.87)	0.58 (0.45-0.76)	<
											0.001
PR	1	Ref	0.81 (0.55-1.17)	0.55 (0.37-0.84)	0.33 (0.20-0.53)	<0.001	Ref	0.66 (0.45-0.96)	0.43 (0.28-0.66)	0.40 (0.26-0.62)	<
											0.001
	2	Ref	0.86 (0.59-1.26)	0.64 (0.42-0.98)	0.42 (0.25-0.69)	0.004	Ref	0.66 (0.45-0.97)	0.47 (0.31-0.73)	0.48 (0.30-0.74)	0.001
	3	Ref	0.96 (0.65-1.43)	0.86 (0.55-1.32)	0.66 (0.39-1.12)		Ref	0.72 (0.49-1.07)	0.53 (0.34-0.85)	0.71 (0.44-1.15)	
						0.450					0.050
	4	Ref	0.99 (0.66-1.46)	0.87 (0.56-1.36)	0.65 (0.38-1.11)	0.427	Ref	0.76 (0.51-1.13)	0.57 (0.36-0.90)	0.76 (0.47-1.23)	0.107
	5	Ref	0.99 (0.66-1.47)	0.87 (0.56-1.35)	0.65 (0.38-1.11)	0.424	Ref	0.76 (0.51-1.13)	0.57 (0.36-0.90)	0.76 (0.47-1.23)	0.106

Results are odds ratio (95% CI). M1 indicates unadjusted model; M2, model adjusted for age and sex; M3, the model adjusted for age, sex, eGFR, BMI, tobacco smoking, diabetes, fasting blood glucose, dyslipidemia, CVD, antihypertensive treatment and albuminuria category; M4, model 3 plus 24h Na, 24h K; M5, model 4 plus glucocorticoids. 95% CI, 95% confidence interval. *P* values for trend were calculated by treating quartiles as a continuous variable in each model. BP, blood pressure; DBP, diastolic blood pressure; PR, pulse rate; SBP, systolic blood pressure.