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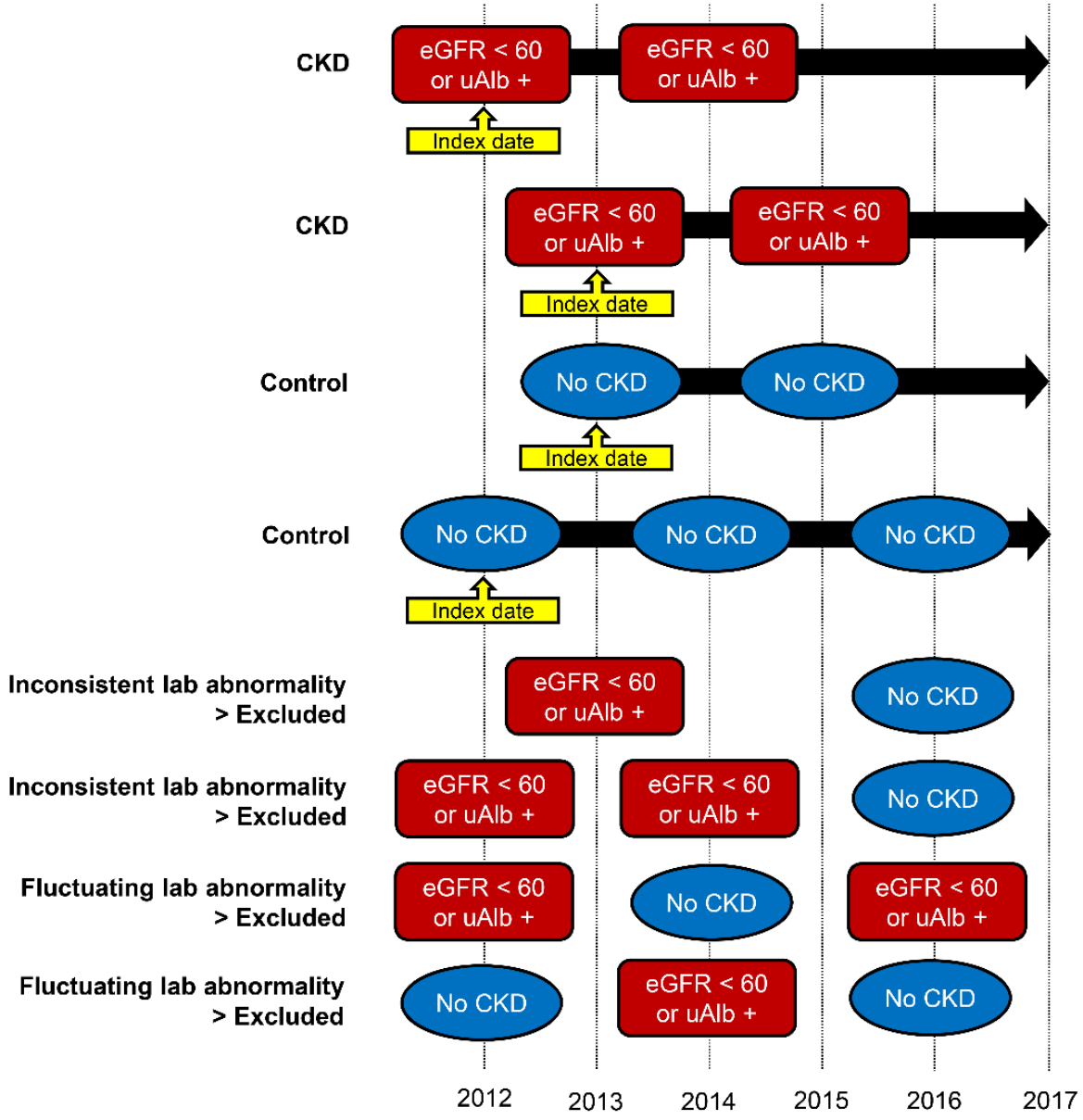
Supplemental Figure 1. Examples of the study groups and excluded cases.



The examples of the study population and the excluded cases. The first examination date during the study period was the index date in which baseline information was collected and follow-up was initiated. Additional lab results indicative of CKD or control group were necessary for inclusion, as we intended to analyze those with "chronic" kidney dysfunction in compared to those who were consistently free from CKD indicative lab findings. Those with inconsistent or fluctuating lab abnormalities were excluded. CKD indicative lab findings were eGFR < 60 mL/min/1.73 m^2 or presence of dipstick albuminuria ≥ 1+. The example visits with CKD indicative lab findings were shown as red rounded squares, and those without CKD indicative lab findings were shown as blue ellipses.

CKD = chronic kidney disease, eGFR = estimated glomerular filtration rate (mL/min/1.73 m^2), uAlb = dipstick albuminuria.

Supplemental Method 1. Collected data and variable definition.

Baseline information, including age, sex, low-income status, history of smoking, body mass index, and systolic/diastolic blood pressure, were collected. A low-income status was defined as when one's income is less than the 20th percentile in the nation. The place of residence was stratified into urban and rural areas, and government-designated metropolitan cities and capital area were included in the urban region. We used the MDRD equation to calculate the eGFR values. History of immunosuppressant usage was considered present when prescription of immunosuppressive medication, including systemic corticosteroids, cyclophosphamides, tacrolimus, cyclosporine, everolimus, sirolimus, mycophenolic acid, azathioprine, rituximab, and anti-TNF alpha blockades, was present for more than total 30 days within 3 years before inclusion. The underlying comorbidity of hypertension and diabetes mellitus was identified with the corresponding ICD-10 diagnostic codes and usage of relevant medications (1). Other comorbidities, including congestive heart failure, dementia, peripheral vascular disease, dementia, liver disease, cancer, and chronic obstructive pulmonary disease were identified with the applied ICD-10 diagnostic codes. In the CKD group, presence of applied ICD-10 diagnosis codes for "clinical diagnosis for glomerular or tubulointerstitial disease" was identified to define the variable, as nephrotic syndrome or primary glomerular or tubulointerstitial diseases may present differently according to CKD stages. The following was the used ICD-10 diagnostic codes to determine the variables, and we considered a comorbidity was present when the diagnostic codes were present for ≥ 2 times within 3 years before inclusion (1).

- Kidney disease codes which were used to exclude people with underlying possible chronic kidney disease before constructing the matched control group: N03, N052, N053, N054, N055, N056, N072, N073, N074, N01, N18, N19, N25.
- Peripheral vascular disease: I71, I790, I739, R02, Z958, Z959
- Congestive heart failure: I50
- Dementia: F00, F01, F02, F051
- Liver disease: K702, K703, K73, K717, K740, K742, K746, K743, K744, K745
- Cancer: C0, C1, C2, C3, C40, C41, C43, C45, C46, C47, C48, C49, C5, C6, C70, C71, C72, C74, C75, C76, C80, C81, C82, C83, C84, C85, C883, C887, C889, C900, C901, C91, C92, C93, C940, C941, C942, C943, C9451, C947, C95, C96
- Chronic obstructive pulmonary disease: J41, J42, J43, J44
- Glomerular or tubulointerstitial disease: N00, N01, N02, N03, N04, N05, N06, N07, N08, N09, N10, N11, N12, N13, N14, N15, N16

(1) Reference: Sundararajan V, Henderson T, Perry C, Muggivan A, Quan H, Ghali WA. New ICD-10 version of the Charlson comorbidity index predicted in-hospital mortality. *J Clin Epidemiol* 57:1288-1294, 2004

Supplemental Table 1. Baseline characteristics of people with pre-dialysis chronic kidney disease according to their stages of chronic kidney disease.

	Stage 1 (N=35,088)	Stage 2 (N=55,456)	Stage 3 (N=306,127)	Stage 4/5 without dialysis (N=12,202)	P
Age (years)	48 [39-58]	54 [44-64]	68 [61-74]	66 [56-74]	<0.001
Male Sex	11,666 (33)	16,813 (30)	165,931 (54)	6,282 (52)	<0.001
Low income	6,946 (20)	11,241 (20)	68,446 (22)	2,908 (24)	<0.001
Smoking history					<0.001
Never	16,750 (48)	27,183 (49)	213,969 (70)	8,311 (68)	
Previous	6,633 (19)	12,901 (23)	56,509 (19)	2,395 (20)	
Current	11,705 (33)	15,372 (28)	35,649 (12)	1,496 (12)	
Body mass index (kg/m^2)	25.1 [22.5-28.0]	25.1 [22.9-27.5]	24.5 [22.5-26.6]	24 (21.9-26.3)	<0.001
Place of residence					< 0.001
Urban	16,552 (47)	26,267 (47)	134,614 (44)	5,209 (43)	
Rural	18,536 (53)	29,189 (53)	171,513 (56)	6,993 (57)	
Immunosuppressant usage	4,661(13)	8,011(14)	63,453(21)	2,450(20)	< 0.001
Hypertension	17,706 (51)	34,072 (61)	214,480 (70.1)	10,774 (88)	<0.001
Diabetes mellitus	12,994 (37)	21,184 (38.2)	95,862 (31.3)	5,265 (43)	<0.001
Creatinine (mg/dL)	0.8 [0.7-0.9]	1.0 [0.9-1.1]	1.3 [1.1-1.4]	2.5 [2.1-3.2]	<0.001
eGFR (mL/min/1.73 m^2)	103 [94-114]	75 [68-81]	53 [47-57]	24 [18-27]	<0.001
Dipstick albuminuria					<0.001
None or trace	0 (0)	0 (0)	270,958 (89)	6,586 (54)	
1+	20,436 (58)	29,700 (54)	17,599 (6)	2,082 (17)	
≥ 2+	14,652 (42)	25,756 (46)	17,570 (6)	3,534 (29)	
Congestive heart failure	487 (1)	1,279 (2)	16,878 (6)	1,115 (9)	<0.001
Dementia	237 (1)	681 (1)	13,816 (5)	612 (5)	<0.001
Peripheral vascular disease	2,466 (7)	5,549 (10)	49,708 (16)	2,240 (18)	<0.001
Cancer	1,006 (3)	2,320 (4)	20,594 (7)	875 (7)	<0.001
Liver disease	705 (2)	1,167 (2)	6,281 (2)	278 (2)	<0.001
Chronic obstructive pulmonary disease	4,180 (12)	8,168 (15)	72,135 (24)	2,944 (24)	<0.001
Clinical diagnosis for glomerular or tubulointerstitial disease	3,871 (11)	7,570 (14)	40,368 (13)	3,834 (31)	<0.001

eGFR = estimated glomerular filtration rate

Stages of CKD were determined as stage 1 (eGFR ≥ 90 mL/min/1.73 m^2 with consecutive albuminuria), stage 2 (eGFR ≥ 60 and < 90 mL/min/1.73 m^2 with consecutive albuminuria), stage 3 (eGFR ≥ 30 and < 60 mL/min/1.73 m^2), and stage 4/5 without dialysis (eGFR < 30 mL/min/1.73 m^2 but not on dialysis).

Supplemental Table 2. Incidence and risk of tuberculosis in subgroups divided according to place of residence.

	N of TB/total	Incidence rate (/100,000PY)	Univariable		Model 1[a]		Model 2[b]	
			HR (95% CI)	P	Adjusted HR (95% CI)	P	Adjusted HR (95% CI)	P
Rural area								
Matched control	943/233,428	131.8	Reference		Reference		Reference	
Pre-dialysis CKD[c]	1,026/226,231	148.5	1.13 (1.03-1.23)	0.007	1.13 (1.04-1.24)	0.006	1.25 (1.14-1.37)	< 0.001
Stage 1	58/18,536	114.7	0.88 (0.68-1.15)	0.36	1.48 (1.13-1.93)	0.005	1.74 (1.32-2.29)	< 0.001
Stage 2	75/29,189	89.1	0.68 (0.54-0.86)	0.001	0.91 (0.72-1.15)	0.43	1.07 (0.84-1.36)	0.60
Stage 3	839/171,513	157.2	1.19 (1.09-1.31)	< 0.001	1.11 (1.01-1.22)	0.03	1.22 (1.11-1.34)	< 0.001
Stage 4/5 without dialysis	54/6,993	241.9	1.83 (1.39-2.41)	< 0.001	1.82 (1.39-2.40)	< 0.001	1.76 (1.34-2.32)	< 0.001
Urban area								
Matched control	575/175,445	108.4	Reference		Reference		Reference	
Pre-dialysis CKD[c]	678/182.642	123.7	1.14 (1.02-1.28)	0.02	1.13 (1.01-1.26)	0.03	1.17 (1.04-1.31)	0.009
Stage 1	59/16,552	131.8	1.21 (0.93-1.59)	0.16	1.80 (1.37-2.36)	< 0.001	1.86 (1.41-2.46)	< 0.001
Stage 2	82/26,267	109.4	1.01 (0.80-1.27)	0.94	1.23 (0.97-1.55)	0.09	1.31 (1.03-1.66)	0.03
Stage 3	497/134,614	120.7	1.11 (0.99-1.26)	0.08	1.03 (0.92-1.17)	0.60	1.07 (0.95-1.21)	0.28
Stage 4/5 without dialysis	40/5,209	241.2	2.23 (1.62-3.07)	< 0.001	2.20 (1.60-3.03)	< 0.001	1.97 (1.43-2.72)	< 0.001

TB = tuberculosis, PY = person-years, HR = hazard ratio, CI = confidence interval, CKD = chronic kidney disease

[a]Model 1 was adjusted for age, sex, low-income states, and smoking histories

[b]Model 2 was adjusted for age, sex, low-income status, smoking histories, place of residence (urban or rural), history of diabetes mellitus, hypertension, cancer, chronic obstructive pulmonary disease, immunosuppressants usage history, and baseline body mass index.

[c]Stages of CKD were determined as stage 1 (eGFR $\geq$ 90 mL/min/1.73 m^2 with consecutive albuminuria), stage 2 (eGFR $\geq$ 60 and < 90 mL/min/1.73 m^2 with consecutive albuminuria), stage 3 (eGFR $\geq$ 30 and < 60 mL/min/1.73 m^2), and stage 4/5 without dialysis (eGFR < 30 mL/min/1.73 m^2 but not on dialysis).

Supplemental Table 3. Incidences and risks of pulmonary, non-pulmonary and military tuberculosis.

	N of according TB/total	Incidence rate (/100,000 PY)	Univariable		Model 1[a]		Model 2[b]	
			HR (95% CI)	P	Adjusted HR (95% CI)	P	Adjusted HR (95% CI)	P
Pulmonary TB								
Matched control	1,376/408,873	110.5	Reference		Reference		Reference	
Pre-dialysis CKD[c]	1,522/408,873	122.9	1.11 (1.04-1.20)	0.004	1.12 (1.04-1.20)	0.003	1.25 (1.14-1.37)	< 0.001
Stage 1	108/35,088	113.3	1.04 (0.85-1.26)	0.73	1.68 (1.37-2.05)	< 0.001	1.74 (1.32-2.29)	< 0.001
Stage 2	138/55,456	86.7	0.79 (0.66-0.94)	0.008	1.02 (0.86-1.22)	0.81	1.07 (0.84-1.36)	0.60
Stage 3	1,202/306,127	127.1	1.15 (1.07-1.24)	< 0.001	1.07 (0.99-1.16)	0.08	1.22 (1.11-1.36)	< 0.001
Stage 4/5 without dialysis	74/12,202	190.2	1.72 (1.36-2.18)	< 0.001	1.71 (1.35-2.16)	< 0.001	1.77 (1.34-2.33)	< 0.001
Non-pulmonary TB								
Matched control	187/408,873	15.0	Reference		Reference		Reference	
Pre-dialysis CKD[c]	238/408,873	19.2	1.28 (1.06-1.55)	0.01	1.28 (1.06-1.55)	0.01	1.38(1.13-1.68)	0.001
Stage 1	13/35,088	13.6	0.91 (0.52-1.59)	0.73	1.09 (0.61-1.94)	0.77	1.13 (0.63-2.10)	0.62
Stage 2	27/55,456	17.0	1.13 (0.75-1.69)	0.56	1.30 (0.86-1.96)	0.22	1.44 (0.95-2.19)	0.09
Stage 3	176/306,127	18.6	1.24 (1.01-1.52)	0.04	1.20 (0.97-1.47)	0.09	1.29 (1.04-1.60)	0.02
Stage 4/5 without dialysis	22/12,202	56.5	3.77 (2.43-5.87)	< 0.001	3.74 (2.41-5.82)	< 0.001	3.84 (2.44-6.04)	< 0.001
Miliary TB								
Matched control	16/408,873	1.28	Reference		Reference		Reference	
Pre-dialysis CKD[c]	34/408,873	2.74	2.14 (1.18-3.87)	0.01	2.14 (1.18-3.88)	0.01	2.20 (1.16-4.11)	0.01
Stage 1	2/35,088	2.10	1.65 (0.38-7.17)	0.51	3.02 (0.68-13.45)	0.15	3.40 (0.80-15.08)	0.10
Stage 2	4/55,456	2.51	1.97 (0.66-5.88)	0.23	2.71 (0.89-8.22)	0.08	2.96 (0.96-9.20)	0.06
Stage 3	24/306,127	2.54	1.98 (1.05-3.72)	0.04	1.82 (0.97-3.42)	0.07	1.90 (0.99-3.65)	0.06
Stage 4/5 without dialysis	4/12,202	10.3	7.97 (2.66-23.82)	< 0.001	7.84 (2.62-23.46)	< 0.001	7.02 (2.29-21.64)	< 0.001

TB = tuberculosis, PY = person-years, HR = hazard ratio, CI = confidence interval, CKD = chronic kidney disease

[a]Model 1 was adjusted for age, sex, low income, and smoking histories

[b]Model 2 was adjusted for age, sex, low-income status, smoking histories, place of residence (urban or rural), history of diabetes mellitus, hypertension, cancer, chronic obstructive pulmonary disease, immunosuppressants usage history, and baseline body mass index.

[c]Stages of CKD was determined as stage 1 (eGFR ≥ 90 mL/min/1.73 m^2 with consecutive albuminuria), stage 2 (eGFR ≥ 60 and < 90 mL/min/1.73 m^2 with consecutive albuminuria), stage 3 (eGFR ≥ 30 and < 60 mL/min/1.73 m^2), and stage 4/5 without dialysis (eGFR < 30 mL/min/1.73 m^2 but not on dialysis).