

Table S1: ICD-10 codes for definition of bone fractures.

Table S2: ICD-10 codes for definition of comorbidities. § comorbidity as defined by Elixhauser et al. (see reference 23)

Table S3: ATC codes and product names for definition of medication.

Table S4: Comparison of baseline characteristics and comorbidities of the different study groups. SD: standard deviation; AIDS acquired immune deficiency syndrome; § comorbidity as defined by Elixhauser et al. (see reference 23)

Table S1

ICD-10 code	description
M 484	Fatigue fracture of vertebra
M 495	Collapsed vertebra in diseases classified elsewhere
M 80	Osteoporosis with pathological fracture
M 843	Stress fracture, not elsewhere classified
M 844	Pathological fracture, not elsewhere classified
M 907	Fracture of bone in neoplastic disease
M 966	Fracture of bone following insertion of orthopaedic implant, joint prosthesis, or bone plate
S 02	Fracture of skull and facial bones
S 12	Fracture of neck
S 22	Fracture of rib(s), sternum and thoracic spine
S 32	Fracture of lumbar spine and pelvis
S 42	Fracture of shoulder and upper arm
S 52	Fracture of forearm
S 62	Fracture at wrist and hand level
S 72	Fracture of femur
S 82	Fracture of lower leg, including ankle
S 92	Fracture of foot, except ankle
T 02	Fractures involving multiple body regions
T 08	Fracture of spine, level unspecified
T 10	Fracture of upper limb, level unspecified
T 12	Fracture of lower limb, level unspecified
T 142	Fracture of unspecified body region

Table S2

Comorbidity	ICD-10 codes
Hyperlipidemia	E78
Coronary artery disease	I20 – I25
Cystic kidney disease	Q61
Glomerular diseases	N00 – N08
Thyrotoxicosis / hyperthyroidism	E05
Bone fractures	M48.4, M49.5, M80, M84.3, M84.4, M90.7, M96.6, S02, S12, S22, S32, S42, S52, S62, S72, S82, S92, T02, T08, T10, T12, T14.2
Osteoporosis	M80 - M82
Elixhauser congestive heart failure §	I09.9, I11.0, I13.0, I13.2, I25.5, I42.0, I42.5, I42.6 - I42.9, I43, I50, P29.0
Elixhauser cardiac arrhythmias §	I44.1 - I44.3, I45.6, I45.9, I47-I49, R00.0, R00.1, R00.8, T82.1, Z45.0, Z95.0
Elixhauser valvular disease §	A52.0, I05 - I08, I09.1, I09.8, I34 - I39, Q23.0 - Q23.3, Z95.2 - Z954
Elixhauser pulmonary circulation disorders §	I26, I27, I28.0, I28.8, I28.9
Elixhauser peripheral vascular disorders §	I70, I71, I73.1, I73.8, I73.9, I77.1, I79.0, I79.2, K55.1, K55.8, K55.9, Z95.8, Z95.9
Elixhauser hypertension, uncomplicated §	I10
Elixhauser hypertension, complicated §	I11 - I13, I15
Elixhauser paralysis §	G04.1, G11.4, G80.1, G80.2, G81, G82, G83.0 - G83.4, G83.9
Elixhauser other neurologic diseases §	G10 - G13, G20 - G22, G25.4, G25.5, G31.2, G31.8, G31.9, G32, G35 - G37, G40, G41, G93.1, G93.4, R47.0, R56
Elixhauser chronic pulmonary disease §	I27.8, I27.9, J40 - J47, J60 - J67, J68.4, J70.1, J70.3
Elixhauser diabetes, uncomplicated §	E10.0, E10.1, E10.9, E11.0, E11.1, E11.9, E12.0, E12.1, E12.9, E13.0, E13.1, E13.9, E14.0, E14.1, E14.9
Elixhauser diabetes, complicated §	E10.2 - E10.8, E11.2 - E11.8, E12.2 - E12.8, E13.2 - E13.8, E14.2 - E14.8
Elixhauser hypothyroidism §	E00 - E03, E89.0
Elixhauser renal failure §	I12.0, I13.1, N18, N19, N25.0, Z49.0 - Z49.2, Z94.0, Z99.2
Elixhauser liver disease §	B18, I85, I86.4, I98.2, K70, K71.1, K71.3 - K71.5, K71.7, K72 - K74, K76.0, K76.2 - K76.9, Z94.4
Elixhauser peptic ulcer disease, excluding bleeding §	K25.7, K25.9, K26.7, K26.9, K27.7, K27.9, K28.7, K28.9
Elixhauser AIDS §	B20 - B22, B24
Elixhauser lymphoma §	C81 - C85, C88, C90.0, C90.2, C96
Elixhauser metastatic cancer §	C77 - C80
Elixhauser solid tumor without metastasis §	C00 - C26, C30 - C34, C37 – C41, C43, C45 – C58, C60 - C76, C97
Elixhauser rheumatoid arthritis / collagen vascular diseases §	L94.0, L94.1, L94.3, M05, M06, M08, M12.0, M12.3, M30, M31.0 - M31.3, M32 - M35, M45, M46.1, M46.8, M46.9
Elixhauser coagulopathies §	D65 - D68, D69.1, D69.3 - D69.6
Elixhauser obesity §	E66
Elixhauser weight loss §	E40 - E46, R63.4, R64
Elixhauser fluid and electrolyte disorders §	E22.2, E86, E87
Elixhauser blood loss anemia §	D50.0
Elixhauser deficiency anemias §	D50.8, D50.9, D51 - D53
Elixhauser alcohol abuse §	F10, E52, G62.1, I42.6, K29.2, K70.0, K70.3, K70.9, T51, Z50.2, Z71.4, Z72.1
Elixhauser drug abuse §	F11 - F16, F18, F19, Z71.5, Z72.2
Elixhauser psychoses §	F20, F22 - F25, F28, F29, F30.2, F31.2, F31.5
Elixhauser depression §	F20.4, F31.3 - F31.5, F32, F33, F34.1, F41.2, F43.2

Table S3

Medication	ATC codes / product names
mTOR inhibitors (everolimus, sirolimus)	ATC L04AA10, L04AA18
Calcineurin inhibitors (ciclosporine, tacrolimus)	ATC L04AD
Belatacept	ATC L04AA28
Glucocorticoids	ATC H02
Mycophenolate	ATC L04AA06
Azathioprine	ATC L04AX01
Bicarbonate (Na-HCO ₃ ⁻)	product name "BICANORM", "ACETOLYT", "NEPHROTRANS"
Phosphate binders	ATC V03AE
Cotrimoxazol	ATC J01EE01', J01EE51
Valganciclovir	ATC J05AB14
Calcium antagonist	ATC C08
Beta blocker	ATC C07
RAAS inhibitors	ATC C09
Thiazide diuretic	ATC C03A
Loop diuretic	ATC C03C
Diuretic	ATC C03
Other antihypertensives	ATC C02
Osteoporosis medication	ATC M05B
Hypnotics and anxiolytics	ATC N05B, N05C
CNS active drugs	ATC N02A, N03, N05A N06C, N06A
Urinary incontinence drugs	ATC G04BD

Table S4

Baseline characteristics and comorbidities	control group	acidosis group	p-value	bicarbonate treatment group	p-value
First kidney transplantation (n, %)	2946 (81.8%)	309 (83.5%)	n.s.	606 (78.8%)	n.s.
number of hospital days within 4 quarters after transplant (+/- SD)	42.4 (+/- 33.2)	43.6 (+/- 35.6)	n.s.	48.7 (+/-30.9)	< 0.001
number of ICD3 diagnoses within 4 quarters after transplant +/- SD)	42.1 (+/- 16.3)	48.7 (+/- 17.1)	< 0.001	44.4 (+/- 16.1)	< 0.001
number of ATC5 medication within 4 quarters after transplant (+/- SD)	18.5 (+/- 7.3)	19.1 (+/-7.1)	n.s.	21.4 (+/-6.8)	< 0.001
Cystic kidney disease	541 (15.0%)	72 (19.5%)	< 0.05	116 (15.1%)	n.s.
Glomerular diseases	1603 (44.5%)	191 (51.6%)	< 0.05	365 (47.5%)	n.s.
Thyrotoxicosis	178 (4.9%)	17 (4.6%)	n.s.	39 (5.1%)	n.s.
Cardiac arrhythmias [§]	661 (18.4%)	76 (20.5%)	n.s.	146 (19.0%)	n.s.
Valvular disease [§]	709 (19.7%)	71 (19.2%)	n.s.	163 (21.2%)	n.s.
Pulmonary circulation disorders [§]	147 (4.1%)	13 (3.5%)	n.s.	27 (3.5%)	n.s.
Peripheral vascular disorders [§]	892 (24.8%)	119 (32.2%)	< 0.01	251 (32.6%)	n.s.
Paralysis [§]	93 (2.6%)	12 (3.2%)	n.s.	20 (2.6%)	n.s.
Other neurologic disease [§]	212 (5.9%)	19 (5.1%)	n.s.	36 (4.7%)	n.s.
Diabetes, uncomplicated [§]	1187 (33.0%)	136 (36.8%)	n.s.	292 (38.0%)	n.s.
Peptic ulcer disease excluding bleeding [§]	94 (2.6%)	15 (4.1%)	n.s.	22 (2.9%)	n.s.
AIDS [§]	14 (.4%)	1 (.3%)	n.s.	1 (.1%)	n.s.
Lymphoma [§]	22 (.6%)	0 (.0%)	n.s.	2 (.3%)	n.s.
Metastatic Cancer [§]	34 (.9%)	0 (.0%)	n.s.	3 (.4%)	n.s.
Solid tumor without metastasis [§]	270 (7.5%)	31 (8.4%)	n.s.	60 (7.8%)	n.s.
Rheumatoid arthritis / collagen diseases [§]	310 (8.6%)	34 (9.2%)	n.s.	51 (6.6%)	n.s.
Coagulopathy [§]	426 (11.8%)	45 (12.2%)	n.s.	116 (15.1%)	n.s.
Obesity [§]	549 (15.2%)	77 (20.8%)	< 0.01	144 (18.7%)	n.s.
Fluid and electrolyte disorders [§]	1142 (31.7%)	370 (100.0%)	< 0.001	492 (64.0%)	< 0.001
Blood loss anaemia [§]	53 (1.5%)	8 (2.2%)	n.s.	9 (1.2%)	n.s.
Drug abuse [§]	39 (1.1%)	6 (1.6%)	n.s.	7 (.9%)	n.s.
Psychoses [§]	36 (1.0%)	1 (.3%)	n.s.	4 (.5%)	n.s.