A propensity score analysis found that HD patients using protein pump inhibitors (N = 410) had a 1.4-fold higher mortality rate and a 1.7-fold higher cardiovascular mortality rate than matched HD patients not on such therapy (N = 410). Protein pump inhibitors also were associated with hypomagnesemia (OR: 2.7).1

A comparison of 19 original meat and poultry products and their 19 reduced sodium counterparts found that the latter contained 44% more potassium than the original products—as much as 1500 mg/100 g.2

A study of postprandial mineral handling in 12 HD patients and 12 healthy controls found a notable difference in their phosphate disposition. Surprisingly, serum phosphate declined significantly in the HD patients at 60 and 120 minutes after the meal (with 600 mg of phosphate) but not in the controls. Binders were not given for 24 hours before the study.3

Data from 3224 HD patients in France for 1994 found that only 16% achieved KDIGO recommended target values for serum phosphate, calcium, and PTH.4

Hypermagnesemia was present in 69% of a group of 118 HD patients based on total magnesium levels but only 13% when based on ionized magnesium values. The ionized fraction of serum magnesium was significantly lower in these patients than in 112 nondialysis patients used as controls (mean, 51% v 63%).5

A study of 1102 new HD patients found that those with a resting heart rate >100 beats/min before their initial dialysis (N = 69) had an adjusted all-cause mortality rate 2.3-fold higher than those with a heart rate of 80-100 beats/min. Patients with heart failure, atrial fibrillation, beta blocker use, and other confounders were excluded from the study.6

Continuous cardiac rhythm monitoring using implant loop recorders was performed in 66 HD patients for up to 1 year. Clinically significant arrhythmias were detected 1678 times in 44 patients (most often bradycardia, <40 beats/min; N = 1461). Arrhythmias were far more frequent during the first HD of the week than during subsequent treatments; they also occurred more frequently in the 12 hours before each HD.7

Patients in the highest quintile of ESA use (> 8127 IU/wk) had an increase in adjusted mortality risk (HR 1.6) compared with patients in the lowest quintile of ESA dose; demographics, inflammatory profile, hemoglobin level, and HD parameters did not explain the finding. Patients in the second quintile (2838-4263 IU/wk) had a significantly lower mortality risk (HR 0.7).8

In a retrospective case-control study, lupus anticoagulant was found in 12 of 23 CKD 5 patients with calciphylaxis compared with 0 of 9 matched control patients.9

Bone scintigraphy showed diffuse heterogeneous soft tissue uptake in 16 of 18 calciphylaxis cases compared with 1 of 31 ESRD patients without the disorder according to a retrospective case study.10

Benefits from hemodiafiltration (>20 L/treatment) over HD were not apparent (adjusted HR 1.08 for all-cause mortality) in a study of European DOPPS data for 8567 patients; 1010 on high-volume hemodiafiltration.11

A study of employment among dialysis patients aged 18-54 years from 1996 to 2013 found that only 23%-24% had jobs and that among those employed 6 months before starting dialysis, 34%-45% stopped working with dialysis initiation.12

Early cannulation (<4 weeks) did not increase the risk of AV fistula failure in a study of 1167 fistulas (57% radiocephalic). Predictors of better access survival included six consecutive successful initial cannulations and use of lower blood flows for the first week of access.13

A study of 491 HD patients with new AV fistulas found that a fistula infiltration before successful cannulation reduced the likelihood for the ultimate success of that fistula by 56%.14

Data from 77 607 living donor transplants to patients on dialysis found that the adjusted risk of transplant failure was 1.16- and 1.60-fold higher for patients with pretransplant dialysis times of 6.1-9.0 months and >60 months, respectively, compared to patients on dialysis for <3 months before transplantation.15

A retrospective review of 100 pregnancies (in 84 women) from 1985 to 2015 in France found a 78% fetal survival and high rates of preeclampsia (19%), hydramnios (42%), and low birth weight (45%). Mean weekly dialysis time in the third trimester was 20.5 ± 3.0 hours.16

Patients with scleroderma on dialysis (N = 2385) had an increased risk of death (HR 1.4), a greater chance of renal recovery (HR 2.7), and a lesser chance of transplantation (HR 0.5) than did age, race,
and sex-matched patients without scleroderma according to an analysis of the USRDS database.\textsuperscript{17}

Dialysis patients who are both HIV and hepatitis C positive are at increased risk of death (HR 1.5 and 1.7 for Caucasians and non-Caucasians, respectively) compared to a matched control group. However, HIV-positive Caucasian patients who are not coinfected with hepatitis C have no increase in mortality risk (HR 1.0) while non-Caucasians do (HR 1.4). The study covered 5348 HIV positive and 1863 coinfected patients from a large dialysis organizations for 2004-2014.\textsuperscript{18}

A retrospective study of 13,315 dialysis patients found a 2.8-fold higher adjusted risk of deep vein thrombosis and a 4.0-fold higher adjusted risk of pulmonary embolism compared with a general population control group.\textsuperscript{19}

Fifty consecutive patients admitted to an ICU for acute kidney injury related to multiple myeloma who required dialysis were studied. Sixty days after initiating dialysis, 23 patients (46%) were alive without dialysis and 10 (20%) were still receiving it; 17 (32%) had died.\textsuperscript{20}

Hemoglobin level was not a risk factor for ischemic stroke in a 4-year study of 3436 HD patients. However, low hemoglobin levels did substantially increase the risk of hemorrhagic stroke. Compared to the quartile of patients with the highest hemoglobin levels (Q4: \(\geq11.2 \text{ g/dL}\)), the adjusted hemorrhagic stroke risk was increased 1.2-, 1.6-, and 2.3-fold for patients in Q3 (hemoglobin 10.6-11.1 g/dL), Q2 (9.8-10.5 g/dL), and Q1 (\(\leq9.7 \text{ g/dL}\)), respectively.\textsuperscript{21}

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REFERENCES

1. de Francisco ALM, Varas J, Ramos R, et al. Proton pump inhibitor usage and the risk of mortality in hemodialysis patients. Kidney Int Rep. 2018;3:374-384.
2. Parpia AS, Goldstein MB, Arcand J, Cho F, L’Abbe MR, Darling PB. Sodium-reduced meat and poultry products contain a significant amount of potassium from food additives. J Acad Nutr Diet. 2018;118:878-885.
3. Reinhard M, Frystyk J, Randers E, Bibby BM, Ivarsen P. Postprandial mineral handling in patients on maintenance hemodialysis. J Ren Nutr. 2018;28:175-182.
4. Fouque D, Roth H, Darne B, et al. Achievement of kidney disease: improving global outcomes mineral and bone targets between 2010 and 2014 in incident dialysis patients in France: the Photo-Graphe3 study. Clin Kidney J. 2018;11:73-79.
5. Sakaguchi Y, Hamano T, Kubota K, et al. Anion gap as a determinant of ionized fraction of divergent cations in hemodialysis patients. Clin J Am Soc Nephrol. 2018;13:274-281.
6. Inaguma D, Koide S, Takahashi K, Hayashi H, Hasegawa M, Yuzawa Y. Association between resting heart rate just before starting the first dialysis session and mortality: a multicentre prospective cohort study. Nephrology. 2018;23:461-468.
7. Roy-Chaudhury P, Tumlin JA, Koplan BA, et al. Primary outcomes of the Monitoring in Dialysis Study indicate that clinically significant arrhythmias are common in hemodialysis patients and related to dialytic cycle. Kidney Int. 2018;93:941-951.
8. Perez-Garcia R, Varas J, Cives A, et al. Increased mortality in haemodialysis patients administered high doses of erythropoiesis-stimulating agents: a propensity score-matched analysis. Nephrol Dial Transplant. 2018;33:690-699.
9. Dobry AS, Ko LN, St John J, Sloan JM, Ngwekar S, Kroshinsky D. Association between hypercoagulable conditions and calciaphylaxis in patients with renal disease: a case-control study. JAMA Dermatol. 2018;154:182-187.
10. Paul S, Rabito CA, Vedak P, Ngwekar SU, Kroshinsky D. The role of bone scintigraphy in the diagnosis of calciaphylaxis. JAMA Dermatol. 2017;153:101-103.
11. Locatelli F, Karaboyas A, Pisoni RL, et al. Mortality risk in patients on hemodiafiltration versus hemodialysis: a ‘real-world’ comparison from the DOPPS. Nephrol Dial Transplant. 2018;33:683-689.
12. Erickson KF, Zhao B, Ho V, Winkelmayer WC. Employment among patients starting dialysis in the United States. Clin J Am Soc Nephrol. 2018;13:265-273.
13. Wilmink T, Powers S, Hollingworth L, Stevenson T. Effect of first cannulation time and dialysis machine blood flows on survival of arteriovenous fistulas. Nephrol Dial Transplant. 2018;33:841-846.
14. Allon M, Imrey PB, Cheung AK, et al. Relationships between clinical processes and arteriovenous fistula cannulation and maturation: a multicenter prospective cohort study. Am J Kidney Dis. 2018;71:677-689.
15. Gill JS, Rose C, Joffres Y, Landsberg D, Gill J. Variation in dialysis exposure prior to preemptive living donor kidney transplantation in the United States and its association with allograft outcomes. Am J Kidney Dis. 2018;71:636-647.
16. Normand G, Xu X, Panaye M, et al. Pregnancy outcomes in French hemodialysis patients. Am J Nephrol. 2018;47:219-227.
17. Sexton DJ, Reule S, Foley RN. End-stage kidney disease from scleroderma in the United States, 1996 to 2012. Kidney Int Rep. 2018;3:148-154.
18. Sawinski D, Forde KA, Locke JE, et al. Race but not hepatitis C co-infection affects survival of HIV+ individuals on dialysis in contemporary practice. Kidney Int. 2018;93:706-715.
19. Molnar AO, Bota SE, McArthur E, et al. Risk and complications of venous thromboembolism in dialysis patients. Nephrol Dial Transplant. 2018;33:874-880.
20. Joseph A, Harel S, Venot M, et al. Renal recovery after severe acute kidney injury in critically ill myeloma patients: a retrospective study. Clin Kidney J. 2018;11:20-25.
21. Yotsue R, Tanaka S, Taniguchi M, et al. Hemoglobin concentration and the risk of hemorrhagic and ischemic stroke in patients undergoing hemodialysis: the Q-cohort study. Nephrol Dial Transplant. 2018;33:856-864.