A study of fluid status, BP and outcomes in 8883 hemodialysis (HD) patients found that fluid overload by bioimpedance combined with a pre-dialysis systolic BP of <110 mmHg was associated with an increased mortality risk (adjusted HR 1.50-1.65). In contrast, normovolemic patients with similarly low systolic BP (<110 mmHg) had a much better survival (adjusted HR 0.46).1

An analysis of DOPPS data found that HD patients missing one or more treatments over 4 months had a 1.68 fold increase in adjusted risk of mortality and a 2.16 fold increase in adjusted risk of sudden death compared to patients not missing any treatments. The 4 month risk of missing any treatments varied from <1% in Italy and Japan to 24% in the US.2

The presence and associations of fluid overload (by bioimpedance), inflammation (C-reactive peptide) and malnutrition (by lean tissue index) was assessed in 8883 HD patients. At least one of these risk factors was present in 88% of patients; the presence of all three (in 18%) increased adjusted mortality risk 5.9 fold. Malnutrition alone, seen in 7% of patients, did not significantly increase mortality risk (HR 1.22).3

Patients in whom intradialytic hypotension occurred in at least 30% of sessions had an increased risk of hospitalization for mesenteric ischemia (adjusted HR 1.8) according to a study of 626 HD patients with the condition and 2428 matched control patients.4

A Cox analysis of data from 5223 dialysis patients (35% on PD) in a prospective, observational cohort found that renin-angiotensin aldosterone blockers (used in 44% of patients) was associated with both a striking reduction in mortality (HR 0.45) and major cardiovascular event-free survival (HR 0.27).5

Reducing dialysate calcium levels from (3.0 to 2.75 mmol/L) in 53 HD patients with suppressed PTH levels (<150 pg/mL) for 3 months increased their mean PTH (68 to 82 pg/mL) and reduced their adjusted serum calcium (9.6 to 9.1 mg/dL).6

An analysis of U.S. Renal Data System (USRDS) data found that end-of-life care differed markedly based on race and ethnicity. The likelihood of discontinuation of dialysis or death in a non-hospital or hospice setting was 23% for whites, 10% for blacks, 11% for Asians and 13% for Hispanics. The extensively adjusted risk for this primary outcome for the combined minority groups was 0.55 compared with whites.7

A study of postoperative ultrasound measurements in 602 new AV fistulas found that fistula blood flow, vein diameter and vein depth were the major determinants of their ultimate unassisted clinical maturation. When patients with the best results for these measures were compared to those with the worst results (85th vs 15th percentile) at day 1, patients with the highest flow, widest vein diameter and least superficial depth had a 5.0, 5.4 and 0.5 odds ratio of maturation.8

The outcomes of AV fistulas and grafts were compared in 9458 elderly (≥67 years) HD patients initiating treatment with catheter access; USRDS data were used. After fistulas were successfully used, they were more likely to be functional after one year and required fewer interventions to keep them functional compared with AV grafts. However, successful use of fistulas at 6 months was less likely than with grafts, required more interventions to make them usable, and required much more interval dialysis with a catheter (median 3 vs 1 month, fistula vs graft).9

Superior vena cava stenosis was diagnosed by imaging in 11 of 45 HD patients with tunneled central vein catheters and access dysfunction. Patients with the finding were more often diabetic (82% vs 44%) and had more catheter-days (median, 1350 vs 375 days).10

Of 312 central vein HD catheters (all Tesio twin catheters), 68 were suspected of having developed a central vein thrombosis because of low flow, high pressure or arm edema. Of the 31 cases diagnosed with thrombosis, catheter tips were proximal to the intended right atrial location on CT venography in all instances. Factor V Leiden was positive in 35% of patients with thrombosis and 3% of those without.11

USRDS data indicate that the use of protein pump inhibitors increases the adjusted risk of hip fracture by 1.19 fold, according to an analysis of 4551 fracture cases and 45 510 controls. There was no relationship of drug exposure to the risk of fracture (HR 1.2 for both <20% vs ≥80% of days over a 3 year period). Histamine-2 blockers had no association with hip fractures.12

Dialysis patients undergoing hip fracture repair (N = 377) had a 3.1 fold higher adjusted risk of in-hospital mortality than matched nondialysis patients (N = 1508).13

Multi-slice CT of the pelvic area found arterial calcification (mainly in the penile arteries) of 80% of 53 HD patients with erectile dysfunction; coronary artery calcification was present in 98% of these patients.14
Ambulatory BP monitoring was done before HD in 105 patients with heart failure or atrial fibrillation and 239 without. A significant inverse linear relationship of BP with subsequent mortality was found in the heart disease group (low BP, high mortality) in contrast to the positive linear relationship to mortality in those without the evident heart problems (low BP, low mortality).15

Two year follow-up data on 22 230 HD patients who completed a smoking survey found that heavy, moderate and former smokers all had an increased adjusted mortality risk (1.4, 1.4 and 1.2, respectively) compared to non-smokers. Heavy smokers with diabetes were at further increased risk compared to non-smoking diabetes (HR 1.7).16

DOPPS data in 18 261 patients for 2009–2015 found median ferritin levels in the USA, Europe and Japan, were 718, 405 and 83 ng/mL respectively. High ferritin levels in all regions were associated with mortality but this association was largely related to inflammation and malnutrition rather than IV iron and ESA dose.17

Long term changes in peritoneal solute transport rate (dialysate to plasma creatinine ratio at 4 hours) were assessed in 366 PD patients. The average adjusted transport rate for patients with high glucose exposure increased from 0.73 to 0.81 from years 2 to 6 but did not change with low glucose exposure (0.72 to 0.71) or with icodextrin use. Use of biocompatible solutions (N = 71, mainly Baxter Physioneal) appeared to stabilize the general increases in peritoneal permeability after 2 years and avoid the increases associated with peritonitis.18

A study utilizing two French registries compared 638 polycystic kidney disease (PKD) patients on PD with PKD patients on HD as well as comparing 797 PKD patients on PD with non PKD patients on PD. PD had no negative impact on survival of PKD patients and there was no increased risk of technique failure or peritonitis.19

The adjusted risk of a new diagnosis of coronary artery disease in dialysis patients starting HD (N = 1404) was 1.47 fold higher than that of those starting PD (N = 220).20

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