Conclusions: Preliminary data in healthy rats suggests that a single HD session results in a relative increase from the vasculature indicating acute HD-associated endothelial injury. Limiting exposure to intradialytic Na+ may reduce MD under the stress of HD, despite equivalent systemic hemodynamic response.

SA-PO448
Microbacterium Sepsis due to an Insufficiently Sterilized Dialyzer
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Introduction: Water treatment systems and dialysis machines are susceptible to growth of microorganisms if not sufficiently disinfected. We present a case of Microbacterium sepsis related to insufficient sterilization of a hemodialysis machine when brought back into circulation.

Case Description: A 45-year-old man with ESKD presented to the emergency department after chills and vomiting during hemodialysis. Earlier in the day, a patient using the same hemodialysis machine, which had just been returned to use, developed similar symptoms and was admitted to the ICU. In the ED, our patient was tachycardic and tachypneic with a leukocyte count of 7.0x10^9/L. Blood cultures were collected in the dialysis unit and ED and he was started on vancomycin and piperacillin-tazobactam empirically. On hospital day 3, cultures grew gram positive rods which later speculated to Microbacterium. Repeat cultures yielded no growth and our patient’s tunneled dialysis catheter was replaced. He was treated with intravenous vancomycin for a 14-day course. Blood cultures in the patient dialyzed before our patient were also positive for Microbacterium. Cultures obtained from the dialysis machine yielded no growth.

Discussion: This rare case of hemodialysis-associated Microbacterium bacteremia demonstrates the importance of proper hemodialysis machine sterilization. Microbacterium are gram positive rods that rarely cause human infection [1]. Given our patient’s history and the prior patient’s similar history on the same machine, the origin of our patient’s bacteremia is presumably the hemodialysis machine, likely either the tubing or dialyzer. These two sources are the most common sites of microbial contamination [2]. Microbacterium bacteremia is also associated with catheter and port access and has been cultured from direct catheter sampling in an infected patient [1]. Although dialysis facilities have varying sterilization procedures, they adhere to strict contamination and monitoring standards for patient benefit. In our case, it is not known if there was a lapse in cleaning protocol or inadvertent material contamination, but thankfully our patient improved with prompt administration of empiric antibiotics and permcath replacement.

[A] Chorost M, et al. 2018. [B] Pontiero G, et al. 2003.

SA-PO449
The World Prevalence, Associated Risk Factors, and Mortality of Hepatitis C Virus Infection in Hemodialysis Patients: A Meta-Analysis
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Background: Hemodialysis patients constitute high-risk population for HCV infection. There is a need to know the world burden of HCV infection among hemodialysis patients has not been systematically examined.

Methods: A systematic literature search was conducted in MEDLINE and Scopus to determine the world prevalence of HCV infection, risk factors, and outcomes among hemodialysis patients. Random-effect models and meta-regressions were used to generate pooled estimates and assess heterogeneity.

Results: Four hundred and seven studies with 1,302,167 participants were analyzed. The pooled prevalence of HCV infection was 21%. The highest prevalence was observed in Africa (28%) and low-income countries (48.5%). A significant prevalence was declined following the publication year and was also inversely related to GDP spent on total health expenditure and total population of each country. The most common HCV genotype was genotype 1b (33.5%), followed by genotype 1a (22.8%), 3 (8.2%), 2 (6%), 4 (5%), and 6 (2.4%). Factors associated with HCV positivity included younger age, longer dialysis duration, more blood transfusions, and dialyzer reuse. The pooled unadjusted HR for all-cause mortality was 1.12 (95%CI 1.03 to 1.22), and the adjusted HR was 1.21 (95%CI 1.12 to 1.30) in HCV-infected relative to non-HCV infected patients. There was significantly higher HCV-associated mortality from infection and malignancy.

Conclusions: HCV infection among hemodialysis patients is a shared burden worldwide and is associated with a higher risk of death.

SA-PO450
Favorable Prognosis in Patients Undergoing Hemodialysis Who Received a 23-Valent Pneumococcal Polysaccharide Vaccine Compared With Those Who Received a 13-Valent Pneumococcal Protein-Conjugate Vaccine
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Background: Infectious diseases are one of the main causes of death in patients undergoing hemodialysis (HD). Routine pneumococcal vaccination for the older population began in 2014 in Japan. Currently, the 23-valent pneumococcal polysaccharide vaccine (PPSV23), alone or in combination with a 13-valent pneumococcal protein conjugate vaccine (PCV13), is recommended for older patients. However, the efficacy of these two vaccines in patients undergoing HD remains unknown. We aimed to evaluate the prognosis of patients undergoing HD who were vaccinated with only PPSV23 compared with those vaccinated with PCV13.

Methods: Patients undergoing HD who were vaccinated with PPSV23 alone (PPSV23 group) or PCV13 (PCV13 group) between 2014 and 2016 were included, and the observation period was three years from the first injection. Patients who underwent between 2011 and 2012 were included as controls and observed for three years. The patients did not receive any pneumococcal vaccines during this period. After propensity score matching using age, sex, dialysis vintage, diabetes history, pneumonia history, and serum albumin and creatinine levels, survival analysis was performed.

Results: The study included 89 patients in the PPSV23 group (70.0±10.7 years old; 65.2% male; median dialysis vintage, 3.6 years), 98 patients in the PCV13 group (76.6±8.0 years old; 48.0% male; median dialysis vintage, 3.1 years), and 339 patients as controls (67.4±13.3 years old; 57.2% male; median dialysis vintage, 4.6 years). After propensity score matching, the PPSV23 and control groups (81 patients each), and the PCV13 and control groups (76 patients each) were evaluated. Significant differences in the survival rate between the PPSV23 group and controls were observed (P=0.04), but no significant difference was observed between the PCV13 group and controls. The incidence of pneumonia in the PPSV23, PCV13, and control groups did not differ significantly during the observation period.

Conclusions: The patients vaccinated with PPSV23 had favorable outcomes; however, the efficacy of PCV13 was limited in older patients who were undergoing HD. Further studies are needed to clarify the mechanisms affecting the prognostic relevance of pneumococcal vaccines and the differences between them.

SA-PO451
Observations of Infection Prevention and Control Practices in US Outpatient Hemodialysis Clinics, 2015-2018
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Background: Pandemics have highlighted the need for robust infection prevention and control (IPC) in dialysis clinics to prevent spread of infections. In 2015, public health departments were funded to assess and improve IPC in hemodialysis clinics. We present results of observations performed during these assessments.

Key: TH - Thursday; FR - Friday; SA - Saturday; OR - Oral; PO - Poster; PUB - Publication Only