Results: Significant differences in baseline characteristics were: the patients in HD alone group were older (p = 0.002), predominantly had diabetic kidney disease (p = 0.002), and hemoglobin of <9.5 g/dl (p = 0.0001). While most patients in HD + HP group had hypertensive nephrosclerosis (p = 0.003), with hemoglobin 9.5 to 11.5 g/dl (p = 0.001) and body mass index (BMI) >25 (p = 0.038). Notably, for patients in HD alone, there was an elevated serum phosphorous which was increased in HD + HP group (p = 0.0001). From baseline values, these variables improved after hemoperfusion: EPO dose (mean = 9448 + 3662.4 versus 10092 + 3405.6 units/week, p = 0.050, 95% CI -1286.4 to 0.95); hemoglobin (mean = 10.8 + 1.5 versus 10.5 + 1.7g/dl, p = 0.016, 95% CI 0.1 to 0.7); and albumin (mean = 3.9 + 0.5 versus 3.7 + 0.6 g/dl, p = 0.010, 95% CI 0.03 to 0.2). There was no significant difference with phosphorous (mean = 2.04 + 0.7 versus 2.08 + 0.6 mmol/L, p = 0.520, 95% CI -0.2 to 0.1) at the end of the study, although there was a significant difference in the second and third months of treatment (p = 0.0001). At the end of the study; albumin (p = 0.0001, 95% CI -0.4 to -0.03) and hemoglobin (p = 0.0004, 95% CI -1.0 to -0.3) were significantly higher in HD+HP group. The percentage of patients with hemoglobin <9.5 g/dl was significantly lower (p = 0.0001) in HD+HP group (10.9%) than in HD alone group (34.2%). Although the phosphorous in HD alone group was lower (p = 0.017, 95% CI -0.4 to -0.03) than in HD + HP group, it increased in HD alone group from baseline (mean = 1.84 + 0.70 versus 56.3 + 11.5 mmol/L). There was no significant difference in EPO dose (p = NS) and Kv (p = NS) in both groups. Hospitalization rate OR = 4.23 (p = 0.0104, 95% CI 1.93 to 9.27) and mortality rate OR = 4.07 (p = 0.0001, 95% CI 1.30 to 12.75) such that patients in HD alone group were four times more likely to be hospitalized and to die than those in HD+HP group.

Conclusions: Patients who underwent hemodialysis and hemoperfusion using HA-130 cartridge had a lower risk of hospitalization and mortality than those on hemodialysis alone. There were significant improvements in hemoglobin, erythropoietin dose, albumin, and phosphorous values from baseline in HD + HP patients.

No conflict of interest

**POS-609**

ELEVATED PULMONARY ARTERY PRESSURE AND MORTALITY IN HEMODIALYSIS PATIENTS

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**Introduction:** Heart disease is quite common in hemodialysis (HD) patients. It includes but not limited to heart valve pathology as well as heart failure with reduced or preserved ejection. Pulmonary artery pressure (PAP) is an important risk factor of cardiovascular disease mortality, but frequently overlooked in HD patients. In our study we analyzed the correlation of different stages of pulmonary artery pressure with mortality in HD patients. The effect of pulmonary pressure has not been well studied in these subgroup of patients.

**Methods:** This is a retrospective study of 261 consecutive patients who were enrolled from 2012-2019, in a single center. Pulmonary artery pressures were measured non invasively during a comprehensive transthoracic heart ultrasound. All ultrasounds were performed by a single experienced adult cardiologist. Mean PAP (mmHg) classified as follows: normal 15-24, mild (stage I) 25-34, moderate (stage II) 35-44, severe (stage III) >45 mmHg. Statistical analysis was performed using binary regression method and Spearman’s correlation test. All statistical analyses were performed using IBM SPSS 23.0

**Results:** Mean age was 51.1±15.3 years; 61% of pts were male, mean body mass index (BMI) was 24.8 ± 4.4, mean ultrafiltration rate was 3.3 ± 1.0 L, 85% of pts had preserved ejection fraction 50 % or more. Elevated pulmonary pressure was prevalent in 84 patients. Among the 261 pts, 177 or 68.7% has normal mPAP, 31 pts or 11.9% were mild (stage I), 26 pts or 10.0% were moderate (stage II) and 27 pts or 10.3% were severe (stage III). Statistically significant negative correlation was between elevated pulmonary artery pressure and ejection fraction (Spearman’s rho = -0.237; p<0.001) Binary logistic regression analysis of the data: Age OR(95%CI)1.08(1.06-1.133), <0.01; Ultrafiltration rate OR 2.888(1.791- 4.631), <0.001 and elevated PAP OR(95%CI) 1.624(1.116- 2.363), <0.001(adjusted odds ratio) were identified as statistical risk factors of mortality in our study.

**Conclusions:** Our study showed that there is a strong correlation between elevated pulmonary artery pressure and mortality in hemodialysis patients. It is an indicator of cardiovascular burden and severity of cardiovascular disease in these patients. Future studies will be needed to adress the treatment options in this specific subgroup of cardiovascular patients, in the introduction of the concept of cardiovascular bundle of care in hemodialysis patients will help improve their survival rate. The inclusion of elevated pulmonary pressure as a therapy target in this bundle of care has the potential to make it more accurate and effective.

No conflict of interest

**POS-610**

PREDICTORS OF ERYTHROPOIETIN HYPORESPONSIVENESS IN PREVALENT PATIENTS ON HEMODIALYSIS: A CROSS-SECTIONAL STUDY

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**Introduction:** Anemia resistant to erythropoietin stimulating agents (ESA’s) is a risk factor for mortality in hemodialysis (HD). Determining the causes of hyporesponsiveness may help overcome the resistance. The aim of this study was to investigate the risk factors of erythropoietin (EPO) hyporesponsiveness in a prevalent population of patients on HD.

**Methods:** This is a cross-sectional study of 59 prevalent HD patients attending our HD unit between 01 January 2019 and 31 March 2019. To evaluate the dose–response effect of EPO therapy, we used the erythropoietin resistance index (ERI), calculated as the average weekly weight-adjusted dose of EPO (U/Kg per week) divided by the average hemoglobin level (g/dL) over a 3-month period. Patients were classified in two groups according to ERI: ERI ≤ and ERI > 10. We compared clinical, analytical and demographic data among groups. Logist regression analysis was performed to identify the predictors of EPO hyporesponsiveness. Statistical analysis was executed using SPSS (Version 23 for Mac OSX).

**Results:** The mean age of 59 prevalent HD patients was 76.02 ± 12.48 years, 37 (62.7%) were male and 23 (39%) were diabetic. Mean ERI for the entire group was 10.5 ± 8.51. Twenty-four patients (40.7%) had hyporesponsiveness to EPO (ERI > 10). There was no age, gender, cause of chronic kidney disease, HD vintage or efficiency (measured by Kv/T) difference within the groups. The proportion of patients with a permanent catheter for HD was significantly higher in the hyporesponsive group (p<0.004). Predialysis fluid overload, defined as overhydration/extracellular water > 15%, measured by bioimpedance, was also superior in this group (p=0.048). Hyporesponsive patients had lower body weight (p=0.002), body mass index (BMI) (p=0.012) and serum albumin (p=0.003). C-reactive protein (CRP) was significantly higher (p=0.027) in this group. Transferrin saturation index (TSI) (p=0.002) and serum iron (p=0.001), but not serum ferritin, were inversely related with ERI. In a logist regression analysis, BMI [(OR) 0.86 (CI: 0.76-0.99)], TSI [(OR) 0.94 (CI: 0.89-0.99)] and the use of central venous catheter [(OR) 7.59 (CI: 1.60-36.03)] were predictors of hyporesponsiveness to EPO therapy.

**Conclusions:** Lower BMI and lower TSI were predictors of resistance to EPO therapy in our study. Use of central venous catheter was also associated with a 7.59-fold increase risk of hyporesponsiveness, possibly by acting as a source of chronic inflammation. In our population malnutrition, inflammation and iron status were the main factors contributing to EPO hyporesponsiveness. ERI is easy to calculate and appear to be useful in the evaluation of the patient’s clinical status.

No conflict of interest

**POS-611**

FERRITIN: ONE BIOMARKER, MULTIPLE INTERPRETATIONS

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**Introduction:** Use of erythropoiesis-stimulating agents (ESAs) has improved the management of anemia in patients on hemodialysis (HD). Iron deficiency and inflammation are causes of ESAs resistance and are
both common among HD patients. Ferritin has been used as a marker of iron status, but it is simultaneously an acute-phase reactant that increases during inflammation. This study aimed to explore the relationship between ferritin, iron status, inflammation and ESA responsiveness in prevalent patients on HD.

**Methods:** This was a cross-sectional study of 59 prevalent HD patients attending our HD unit between 01 January 2019 and 31 March 2019. Patients were classified in two groups according to responsiveness to erythropoietin (EPO), measured by the erythropoietin resistance index (ERI); ERI ≤ 10 and ERI > 10. ERI was calculated as the average weekly weight-adjusted dose of EPO (U/kg per week) divided by the average hemoglobin (Hb) level (g/dL), over a 3-month period. We compared clinical and analytical data among groups and assessed the relationship between ferritin and serum iron, transferrin saturation index (TSI) and C-reactive protein (CRP). Statistical analysis was performed using SPSS (Version 23 for Mac OSX).

**Results:** The mean age of 59 prevalent HD patients was 76.02 ± 12.48 years, 37 (62.7%) were male and 23 (39%) were diabetic. Mean ERI was 10.5 ± 8.51 and mean Hb 10.8 ± 0.88g/dL. Twenty-four patients (40.7%) had hyporesponsiveness to EPO (ERI > 10). There was no age, gender, cause of chronic kidney disease or HD vintage difference within the groups. No difference was noted regarding HD modality or efficiency (measured by Kt/V). Hyporesponsive patients had lower TSI (26.4 ± 8.3% vs 16 ± 13.3%, p<0.009), lower serum iron (111.03 ± 24.96mg/dL vs 35.32 ± 4.23mg/dL) and higher CRP (1.07 ± 1.05mg/dL vs 2.05 ± 2.11mg/dL, p=0.027). No statistically significant difference was found in ferritin among groups. Using Spearman’s correlation, we found a positive correlation between ferritin and CRP (R=0.54, p=0.006) but not with TSI or serum iron in the group of patients with ERI > 10. On the other hand, in the group of patients with ERI ≤ 10, a positive correlation between ferritin and TSI (R=0.35, p=0.04) and ferritin and serum iron (R=0.36, p=0.034) was noted, but not with CRP.

**Conclusions:** Despite the absence of a significant difference in the ferritin level among groups, our results suggest that ferritin may have different interpretations according to patient’s clinical response to EPO therapy. Ferritin appear to be a marker of inflammation rather than iron status in hyporesponsive patients. Therefore, a higher ferritin level secondary to inflammation may mask an underlying iron deficiency. Our study supports the need for a complete profile of iron studies and, eventually, new biomarkers, to confidently exclude iron deficiency and guide iron therapy in this group of patients.

No conflict of interest

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**POS-613**

**DIALYSIS INITIATION IN MOROCCO: IS IT ALWAYS UNPLANNED?**

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**Introduction:** In Morocco, chronic kidney disease is a major public health issue. In fact, nearly 30 000 patients receive maintenance dialysis for end-stage renal disease (ESRD), and the average annual cost per patient is estimated at around 100 690 Moroccan Dirhams (11069.70 USD). The timing of renal replacement therapy initiation has always been subject to considerable variation in most clinical guidelines, although the correlation between acute dialysis initiation and higher rates of morbidity and mortality is currently a fact. In our country, very few studies have investigated dialysis initiation modalities. Our objective was to evaluate the clinical and biological features of the incident renal replacement therapy (RRT) patients and to explore the reasons behind unplanned dialysis initiation in the Moroccan population.

**Methods:** We conducted a multicenter prospective observational study of a random sample of patients who initiated dialysis between June 2019 and February 2020 in Casablanca, Morocco. We analyzed the clinical and biological presentation at dialysis initiation, along with the timing of nephrologist referral, type of vascular access, and criteria of initiation.

**Results:** One hundred seventy-two incident RRT patients were studied. The mean age was 61.2 years old. Diabetic nephropathy was the cause of the ESRD in 44% of the cases. Acute dialysis initiation was noted in 69.6% of the patients. The most common types of signs and/or symptoms at initiation were cardiopulmonary (55.3%) and gastrointestinal (21.2%). Nephrologist referral was late in 39.3% of the patients; 63.2% started hemodialysis with a central venous catheter. The mean hemoglobin level was 8.3g/dl while the mean GFR at the initiation was estimated at 5.4ml/min.

**Conclusions:** Our study reveals that dialysis initiation in Morocco is unplanned in most cases. This shows the importance of patient education and early referral to the nephrologist in order to avoid complications and improve the circumstances of renal replacement therapy initiation.

No conflict of interest

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**POS-614**

**PATIENT SAFETY ON HEMODIALYSIS: A RETROSPECTIVE VIEW OF CARDIAC ARRESTS IN A LARGE DIALYSIS NETWORK IN INDIA**

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**Introduction:** Patient safety is a core part of health care delivery and dialysis sessions are especially challenging for dialysis session. Numerous factors including patient knowledge, attitude and behaviour, technology used, health care worker competency, oversight and health status of dialysis patient influence safety. This aspect of HD has not been studied in India.