

**Introduction:** Cardiovascular disease is one of the major cause of death in hemodialysis patients. Little is known about the change of echocardiographic findings in incident hemodialysis patients during a short term follow-up as most of the previous studies were done on prevalent hemodialysis patients and the follow-up was long. Many centres in developing countries are still providing twice a week or once a week hemodialysis only as compared to standard thrice a week dialysis because of financial constraints. So we aimed to evaluate the change in left ventricle structure and functions with the help of echocardiography in the incident hemodialysis patients after three months of regular biweekly maintenance hemodialysis(MHDL).

**Methods:** This was a prospective observational study including 30 patients. All patients underwent hemodialysis twice a week. Blood pressure, interdialytic weight gain and echocardiographic parameters were recorded twice, one at the beginning of the study and other at the end of three months. Left ventricular hypertrophy(LVH) was graded into mild, moderate and severe as per American Society of Echocardiography (table 1). Systolic dysfunction was defined by left ventricular Ejection fraction and graded as mild, moderate and severe(table1).

LVH SEVERITY	NORMAL	MILD	MODERATE	SEVERE
WOMEN (LV mass in grams)	66-150	151-171	172-182	≥183
MEN (LV mass in gm)	96-200	201-227	228-254	≥255
SYSTOLIC DYSFUNCTION	NORMAL	MILD	MODERATE	SEVERE
EJECTION FRACTION	≥46%	41-45%	36-40%	≤35%

TABLE 1

**Results:** Mean (SD) inter dialytic weight gain of our study subjects before the initiation of hemodialysis was 3.44 kg (SD 0.66) which increased to 3.53 kg (SD 0.77) after 3 months (p=0.29). Blood pressure was poorly controlled throughout the study. Posterior wall thickness increased from 1.18cm to 1.30cm after 3 months of MHDL (p<0.01). Mean (SD) Left ventricular (LV) mass also increased from 224.93(66.43) gm at baseline to 227.77 (56.62) gm after 3 months of MHDL (p=0.57). Among 30 study subjects, 18 (60%) were in moderate to severe LVH category before the initiation of hemodialysis and their number rose to 24 (80%) after three months of MHDL (p=0.02). Prevalence of systolic dysfunction rose from 16.67% to 30 % after 3 months of MHDL, (p value=0.13). At the beginning of our study, 5 subjects had no diastolic dysfunction (DD), 11 subjects had type 1 DD, 11 subjects had type 2 DD and 3 subjects had type 3 DD. After 3 months of MHDL, the number of subjects with no, type 1DD, type 2DD and type 3DD became 2, 13, 12 and 3 respectively. We also found that systolic blood pressure(SBP) and LV mass were positively correlated (p<0.01). It was also noticed that haemoglobin value and LV mass were negatively correlated, but statistical significance was lacking (p=0.17).

**Conclusions:** Progressive LVH continues in patients on biweekly hemodialysis, most probably due to poorly controlled blood pressure and excessive extracellular fluid volume. There was also worsening of systolic dysfunction, diastolic dysfunction in our study subjects but due to small sample size and study design, we failed to detect significant association between them. We recommend to conduct a similar study as multi-centric with a large sample size. Our study provides an important novel insight in planning future researches with an aim to retard cardiac structure and functional alterations and improve cardiovascular outcomes in advanced chronic kidney disease patients.

No conflict of interest

POS-577

**DETERMINING THE THRESHOLD OF SYMPTOM BURDEN IN HEMODIALYSIS PATIENTS: THE UTILIZATION OF THE LONDON EVALUATION OF ILLNESS**

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**Introduction:** Patients receiving maintenance hemodialysis (HD) suffer from the burden of symptoms, which leads to a lower quality of life (QoL). Unfortunately, we can't wave a magic wand to make symptoms disappear, but we can learn to improve our understanding of symptom burden. The study aimed to define the threshold for "high" and "low" perceived quality of life and to identify the hierarchy of negative symptoms from HD patients' perceptions.

**Methods:** Patients were recruited from the prevalent HD population from the London Health Sciences Centre Renal Program. Each patient participated in face-to-face interviews with the guidance of a self-developed survey. The scoring system and symptoms of interest were taken directly from the London Evaluation of Illness (LEVIL) questionnaire, an application-based platform familiar to this patient population in which patients self-report their symptoms with each HD treatment. Six symptom domains were prioritized based on patients' expectations of acceptable and unacceptable scores in each of the domains on a scale from 0 (very poor) to 100 (excellent). Scores were then averaged to reflect an overall acceptable, and unacceptable QoL scores. The midpoint between these two averages defined the threshold for "high" and "low" perceived quality of life.

**Results:** Eleven patients participated in our evaluation. Fifty-five percent were male and the mean age was 70.8±8.6 years of age. Symptom domains included general well-being, bodily pain, energy, sleep quality, appetite, and shortness of breath were scored by each participant. When asked, "What would be an **acceptable** score for you in regard to [each symptom domain]," patients reported the following: energy (75.9±11.4), sleep quality (76.8±16.9), general well-being (81.4±8.7), appetite (82.3±9.3), pain (82.7±10.1), and shortness of breath (85±16). Alternatively, when patients were asked, "What would be an **unacceptable** score for you in regard to [each symptom domain]," patients reported: energy (52.7±15.6) sleep quality (55±14.3), general well-being, (59.1±12.8), appetite (60.5±13.5), pain (65±15), and shortness of breath (64.5±15.9). Symptom specific domains were consequently averaged to provide us with an overall **acceptable** QoL score of 80.7±3.5 and an overall **unacceptable** QoL score of 59.5±1.2. The mid-point and threshold to define groups was determined to be 70.

**Conclusions:** Our findings indicate that HD patients have a "high" QoL if LEVIL scores at baseline are 70 or above. Alternatively, patients have a "low" QoL if LEVIL scores are <70. QoL is predominantly affected by energy, sleep quality, and well-being, determined by the lower "acceptable"/ "unacceptable" scores reported for these domains. Conversely, appetite, pain, and shortness of breath are perceived as being the least bothersome symptoms. This information, together with LEVIL has the potential to provide insight into the intensity of symptoms patients feel they are able to "live" with and to identify the criteria needed to improve QoL. Therefore, integrating LEVIL into routine clinical practice may serve as a guide for introducing novel interventions aiming to alleviate the burden of symptoms. Ultimately, LEVIL allows us to listen closely to the specific needs of each patient to provide clinicians with information in the search for the interventional "magic wand" needed to improve patient care.

No conflict of interest

POS-578

**SHORT TERM OUTCOMES OF TUNNELED CUFFED CATHETERS- A SINGLE CENTER EXPERIENCE**



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**Introduction:** Tunneled cuffed catheters (TCC) for hemodialysis (HD) play an important role in the patients who require HD for a short time till renal recovery or in patients who are on maintenance HD and lack a functioning arterio-venous fistula (AVF).

**Methods:** A retrospective analysis of clinical parameters of all the patients who were put TCC from October 2017 to September 2020 (3 years) was done with follow up from, minimum of 1 month to 3 years. All tunneled catheters were inserted under ultrasound guidance by a trained Nephrologist. A post-insertion chest radiograph was done to confirm the catheter position. All complications and catheter survival were recorded.

**Results:** A total of 128 TCC were put, out of which 3 were repeat, 1 femoral and 1 left sided internal jugular vein (IJV) and rest all were right sided tunneled IJV catheters. Prolonged exit site bleeding was most common procedure related complication (9.6%), and beside this

there was no procedure related mortality or significant morbidity. Chronic kidney disease (CKD) of undetermined etiology (44.8%), Diabetes mellitus (40.8%) and IgA Nephropathy (5.6%) were the leading causes of ESRD. Most common indication for inserting TCC was initiation of HD (81.6%), followed by failed AVF (15.2%) and failed peritoneal dialysis (PD) (3.2%). Among 125 TCC, 5 blocked {3 required removal (mean 55.6 days) and 2 were opened with instillation of streptokinase}, 3 had catheter-related blood stream infection (CABSI) (mean 48 days) and required removal and 2 catheters slipped spontaneously (mean 68 days). Overall percentage of functioning catheter was (93.6%). Average catheter survival i.e. including death with functioning catheter, elective catheter removal after AVF creation, kidney transplant and renal recovery beyond one month of catheter insertion (7 patients died with functional catheter in less than a month of insertion) was 142.8 days.

**Conclusions:** Need of the HD initiation was the most common indication for insertion of TCC. Exit site bleeding (9.6%) was the most common procedure related complication and overall percentage of functioning TCC was 93.6%. Although AVF is best mode of vascular access for HD, TCC insertion is safe, immediate and effective mode of vascular access. TCC plays a successful role in patients who require unplanned HD initiation and those with failed AVF.

No conflict of interest

## POS-579

### CIRCULATING PROPROTEIN CONVERTASE SUBTILISIN/KEXIN TYPE 9 INDEPENDENTLY PREDICT RISK OF CARDIOVASCULAR EVENTS IN HEMODIALYSED BLACK AFRICAN PATIENTS: A CASE-CONTROL STUDY USING THE FRAMINGHAM PREDICTIVE INSTRUMENT



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**Introduction:** Proprotein Convertase Subtilisin/Kexin type 9 (PCSK-9), the new biomarker interfering in lipid homeostasis, has not been explored among sub-Saharan African receiving maintenance hemodialysis. The aim of this study was to investigate the association between PCSK-9, dyslipidemia and risk of cardiovascular events in a population of black Africans.

**Methods:** A case-control observational study was conducted between August 2016 and July 2020 in six hemodialysis centers in the city of Kinshasa, the Democratic Republic of Congo. We measured serum PCSK-9 by Elisa and lipid levels in 286 CKD-HD patients and compared them to 296 non-CKD subjects. The gender-specific models of the Framingham predictive instrument were used for predicting cardiac events.

**Results:** Serum PCSK-9, TC, LDL c and TG were significantly higher in CKD-HD group compared to the control group. By contrast, the HDL c level was significantly lower in CKD-HD patients compared to non-CKD group. The TC, LDL-c and TG increase significantly at tertile 3 (P <0.001) while HDL-c decreases significantly at the same tertile (P <0.001). In multivariate logistic regression analysis, CKD-HD status and PCSK-9 remained as independent determinants of risk for cardiovascular events. Compared to non CKD subjects, the likelihood of having a cardiovascular event in CKD-HD group is 37 times higher [37.25 (11.33-122.44); P <0.001]. Being in PCSK-9 tertile 2 [P <0.001; 5.58 (2.19-14.22)] and PCSK-9 tertile 3 [P <0.001; 16.96 (6.51-44.18)] is associated with 6 and 17 OR, respectively.

**Conclusions:** The level of PCSK-9 is associated with increased risk of cardiovascular events in haemodialyzed patients, independently of traditional potential confounders.

No conflict of interest

## POS-580

### CLINICAL PROFILE AND OUTCOME OF ARTERIO-VEIN FISTULAE IN CHILDREN ON MAINTENANCE HEMODIALYSIS - A SINGLE CENTRE STUDY FROM A LOW RESOURCE COUNTRY



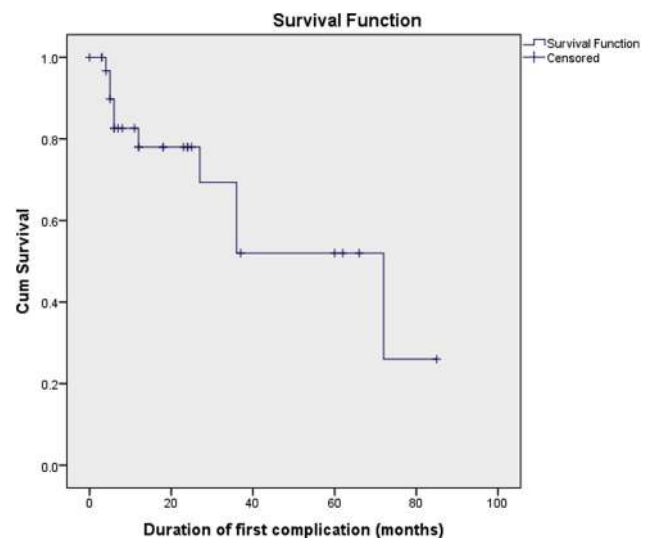
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**Introduction:** Arteriovenous fistula (AVF) is the recommended vascular access for children and adolescents needing maintenance hemodialysis (MH). The International Pediatric Hemodialysis Network, found that only a quarter of children undergo MH through an AVF with wide variability across countries. In low resource countries, the need to maintain a functional vascular access becomes critical given the long waiting time to transplantation. We studied the clinical profile and outcomes of arteriovenous fistulae in children on MH.

**Methods:** A retrospective analysis was undertaken of children who had an AVF created for MH between 2005 and 2020 at a tertiary care hospital. All children had mapping of the artery and vein of the non-dominant hand prior to creation of the AVF. Complication occurring in the first 6 weeks of fistula creation were considered "early complications". Primary patency was defined as the duration from the time of maturation to the first complication requiring intervention. The time to loss of primary patency and the risk factors for the same were analysed. The outcome of the fistula was classified as primary fistula failure (failure of fistula to mature) and secondary fistula failure (failure of fistula after maturation). Ethical approval from the Institutional Ethics Committee was obtained.

**Results:** Thirty-six children with 38 AVFs (28 boys [77%]) with median age of 11(8,13) years and median body weight 26 (24, 31.2) kgs were included. Thirteen (36%) had glomerular disease; 29 (80%) children were on maintenance hemodialysis for a median duration of 4(2, 6) months via a central venous catheter prior to AVF creation. Majority of children had a brachiocephalic fistula (27 (75%), the remaining had radiocephalic (7(19.4%) and brachio-basilic fistula (2(5.5%). The median follow-up time was 20.8 (7.3, 46.8) months. Median dimension of artery and vein were 2.1(1.9, 2.4) mm and 2.6(2.4, 2.8) mm respectively. Four children (11%) had early complications within a median duration of 2 (1,3) days. Of these, two had thrombosis and two had poor flow and absent thrill. The two AVFs with thrombosis could be salvaged with thrombectomy resulting in a primary failure rate of 2/36 (5.5%). Among the rest (n=34), the median time to maturation of the fistula was 7 (6.5, 9) weeks. Of these, 3 lost their fistula after a median duration 85 (79, 120) months with a secondary failure rate of 8.8%. Ten patients (27.7%) had thrombosis requiring intervention with median time to loss of primary patency of 72 (27, 134) months (Figure 1). The loss of primary patency was not associated with age, type of kidney disease, site of fistula or hemodialysis vintage. At last follow up, 16 (47%) patients continued hemodialysis with the same AVF, 2 required a new AVF (from radiocephalic to brachiocephalic fistula), 9 underwent transplantation within a median duration of 29 (12, 35) months, 1 switched to peritoneal dialysis and six were lost to follow up with a functioning AVF.



**Conclusions:** For children on MH from low resource settings, where early transplantation remains a challenge, early AVF creation is a feasible option for vascular access. AVF is associated with few early complications, appreciable primary patency and low failure rates.

No conflict of interest