THE TWO YEARS OF HEMODIALYSIS VASCULAR ACCESS CATHETER INSERTION IN BANJARMASIN, INDONESIA

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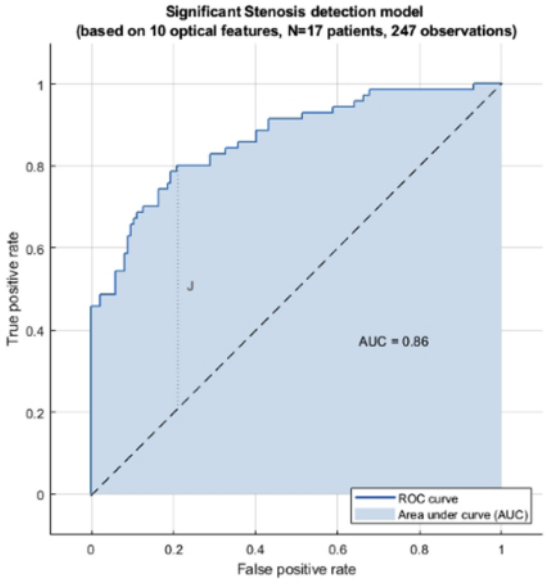
Introduction: Surveillance of AV fistula (AVF) by inspection and clinical examination is a challenging task and many times not performed adequately. As a result, early stenosis is frequently not detected in a timely manner, which lead to access loss and need for potentially harmful temporary catheters.
Methods: We used a contactless, imaging system (PatenSee LTD, Israel) for applying several optical scanning methods (free from any harmful radiation) that mimic the main elements of a nurse "look, listen & feel" physical exam: (1):3D scanning of the AV fistula (AVF) area including a quantitative evaluation of fistula shape/size and underlying arm over time (e.g. swelling, aneurisms, blood polling in various parts etc.) with a standard "Arm elevation test" including speed and level of fistula collapse; (2) Vibrometry ("Listen", "Feel") to provide data on flow changes over time (Bruit) as well as measuring pulsatility of the AVF (Pulse, thrill); (3) Superficial vascular imaging to provide data on changes in collateral vein development. The system collected the data prior to routine dialysis sessions and we used doppler ultrasound stenosis evaluation (DUS) on a scale of 0-3 (no stenosis, mild stenosis, moderate stenosis, severe stenosis) performed within 90 days of the session by an independent radiologist to retrospectively label each session and train a machine learning model. The model was then tested on new imaging data against its corresponding DUS using 5 fold cross validation.
Results: Interim results included247 sessions from 17 different patients collected in a single site that were used for training and testing the system. Imaging took approximately 2 min and was performed during waiting time prior to the dialysis sessions. Comparison to DUS showed AUC=0.86 of Receiver Operating Characteristic (ROC) curve for detection of significant stenosis (Moderate + Severe)with max Youden's index of 0.59 (at Sensitivity 78.6% and Specificity 80.6%) . See ROC in figure 1.



Conclusions: These initial feasibility results suggests that this rapid, contactless imaging device incorporated with machine learning, could serve as an effective tool for automated AVF surveillance . More research is required to evaluate the system as a predictor of fistula stenosis.

Conflict of interest

Potential conflict of interest:

Funding: Israeli innovation authority, Beilinson (Rabin) medical center, MEDX Xelerator LP

POS-654

THE TWO YEARS OF HEMODIALYSIS VASCULAR ACCESS CATHETER INSERTION IN BANJARMASIN, INDONESIA

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Introduction: After the time, Chronic Kidney Disease (CKD) is increasingly recognized as a global public health problem in the world especially in South Kalimantan, Indonesia. The CKD patients whom undergoing hemodialysis is needed a vascular access to get optimal hemodialysis action. There are two types of access, temporary and permanent. Some of the vascular access options often used are radiocephalic, internal jugular, subclavian and femoral veins.[1]Each has advantages and disadvantages. Infection and bleeding are the most common complications.[2]This is the first reported of interventional nephrology, hemodialysis vascular access in Banjarmasin, Indonesia. The aim of this study was to show a profile of hemodialysis vascular access catheter insertion in Banjarmasin, Indonesia.
Methods: This was a retrospective cohort study. The data of all patients who take hemodialysis vascular access catheter insertion about 2 years through October 2017 until September 2019 in renal center, Ulin Hospital Banjarmasin, Indonesia.
Results: The 650 catheters were inserted, mostly in 354 female patients (54.64%). The mean male patients' age was older than female (respectively, 52.49 ± 12.30 vs 50.49 ± 11.98; p = 0.037). There were 45 (6.9%) patients with tunneled and 605 (93.1%) with temporary catheter. The location mostly in right subclavian 439 (72.56%), left subclavian 10 (1.65%) and internal jugular vein 156 (25.79%). There were 15 (2.31%) infection occurred, mostly after 2 days. The infection between tunneled and temporary catheter was no significant differences, respectively 1/46 (2.22%) and 14/605 (2.31%) (p=1.000, OR=1.042), also based on location in temporary catheter. There were no complications to cause death.

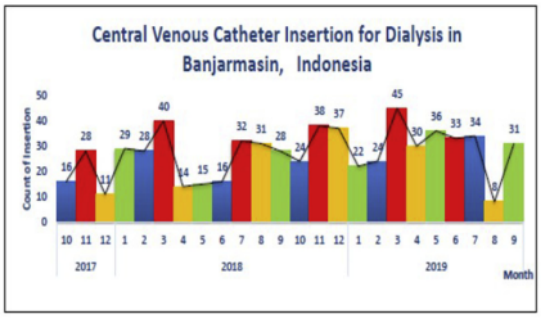

Figure 1. The profile of central venous catheter insertion for dialysis for two years in Banjarmasin, Indonesia

Table 1. The profile of central venous catheter insertion for dialysis for two years in Banjarmasin, Indonesia

Variable	N (%)	Mean± SD
Sex		
Male	296 (53.3)	
Female	354 (46.7)	
Age (years)		51.40 ± 11.73
Catheter type	45 (6.92)	
Tunneled	605 (93.08)	
Temporary		
Indication of Hemodialysis		
Acute Kidney Injury	9 (1.38)	
Chronic Kidney Disease	641 (98.62)	
Infection		
Yes	15 (2.31)	
No	635 (97.69)	

The infection no related to any other infection the patient might have when the patient was admitted to the facility.[2]Central line-associated bloodstream infections (CLABSIs) lead to prolonged hospital stays and increase health care costs and mortality. In the USA, CLABSI rate in intensive care units is estimated to be 0.8/1000 central line days.[2,3] Our study is only 2.31% of infection and no differences between temporary, tunneled, and among temporary with different location. CLABSI is a major cause for longer hospital stay, increased costs, and the high mortality rate. The CLABSI is reported to cause up to 70% of all hospital-acquired infection. In comparison, 2012, Cipto Mangunkusumo Hospital Jakarta, Indonesia reported a BSI rate of 12.88/1000 catheter days, and then a slight decrease in 2013 to 10.53 BSIs/1000 catheter days.[3]

Conclusions: The insertion hemodialysis vascular access catheter was newly reported about 2 years in Banjarmasin, Indonesia. There were no differences of infection between tunneled, temporary, and different location in temporary catheter insertion. There were very low incidences of acute complications during catheter insertion, such as bleeding and malposition, and no mortality was caused by catheter insertion.

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No conflict of interest

POS-655

CLINICAL PROFILE AND OUTCOMES OF PATIENT ON MAINTENANCE HAEMODIALYSIS HOSPITALIZED WITH COVID 19 AT A TERTIARY CARE CENTRE

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Introduction: Coronavirus disease (COVID 19) caused by an enveloped RNA betacoronavirus ,first identified in Wuhan has had devastating effects worldwide which rapidly turned into a pandemic.Patient with kidney disease specially those are on maintenance haemodialysis have abnormalities in innate and adaptive immune response.Hence the objectives of this study is to study the clinical profile and outcomes among these patients.

Methods: 100 patients after screening medical records who are known case of chronic kidney disease on maintenance haemodialysis with COVID 19 who fulfill the inclusion criteria hospitalized at a tertiary care centre in south India was included. Diagnosis of COVID 19 was confirmed by Rapid antigen test or COVID 19 Reverse Transcriptase Polymerase chain reaction (RT PCR).At the time of admission after noting the baseline characteristicsincluding all the comorbidities,clinical condition was categorized based on the ICMR COVID 19 national task force guidelines as mild, moderate and severe disease.

Inflammatory markers like ferritin ,lactate dehydrogenase,C reactive protein ,Procalcitonin,Interleukin 6 levels was done in relevant cases.Outcomes like whether the patient condition improved or worsened or discharged with Covid negative status or death at the end of 2 weeks was assessed.

Results: Out of 100 patients,70 were male,30 were female.Mean age of patients was 47.7± 14.58.Hypertension was seen in 92,38 had diabetes.22 had IHD.33 had other comorbidities.42 had fever,52 had cough,70 had dyspnea,anosmia in 6,sore throat in 6 patients,diarrhoea in 13patients,31 had vomiting and myalgia in 23. 5,31,29and 35 patietns had Asymptomatic,mild,moderate,severe disease respectively.Median values of Hemoglobin-8.6, total count- 6900, platelet count-1.91, RBS-156,urea 126, creatinine – 8.1,CRP – 120,D dimer–0.96,LDH–427.5,ferritin-1230, fibrinogen-446,PT –11.7seconds,INR-1.1,APTT-31.0.At the end of 2 weeks 16 patients expired and rest 84 were discharged in stable condition.Patients with severe disease had higher inflammatory markers and multiple comorbidities .All 16 patients who expired had severe disease requiring mechanical ventilation.During the above study period total number of COVID cases other than study subjects was 4891,deaths were 1133 among them i.e 25 %,which is higher than the study subjects.

Conclusions: Patients with kidney disease on maintainence hemodialysis had higher inflammatory markers and higher comorbidity burden ,they had higher odds of in hospital mortality.But when compared to other population, mortality among study subjects was less.

No conflict of interest

POS-656

THROMBO-ELASTOGRAPHY GUIDED CORRECTION OF COAGULOPATHY PRIOR TO TUNNELED HEMODIALYSIS CATHETER PLACEMENT IN PATIENTS WITH LIVER DISEASE

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Introduction: There is limited evidence about the role of routine correction of coagulopathy in patients with liver disease prior to tunneled hemodialysis catheter (TDC) insertion. Traditional tests for hemostasis have not been shown to successfully predict bleeding risk in liver disease. Thrombo-elastography (TEG) provides a more comprehensive assessment of coagulation dynamics. We hypothesize that using a TEG-guided transfusion strategy will lead to judicious use of blood products compared to conventional transfusion therapy in the peri-procedural period of TDC insertion by accurately identifying those patients at higher risk for bleeding.

Methods: We reviewed all patients with liver disease between January 2015-August 2021 who had their coagulopathy addressed prior to TDC insertion either by a TEG-guided or a conventional transfusion strategy (using INR, fibrinogen and platelet count). Patients with reaction (R) time of >15 minutes, α-angle of <45 degrees and maximum amplitude (MA) of <30 mm received fresh frozen plasma (FFP), cryoprecipitate and platelet transfusions respectively. The transfusion protocol for low-bleeding-risk procedures as outlined by the Society of Interventional Radiology was the 'conventional' transfusion strategy employed. Outcomes such as the volume, units and cost of blood products were compared when using a TEG-guided or conventional approach to blood transfusions. Each FFP, cryoprecipitate and platelet unit was considered to cost $57, $54 and $522 respectively as reported by the 2017 National Blood Collection and Utilization Survey.

Results: We collected data on 108 patients who underwent TDC insertion after utilizing either a TEG-guided (n=56) or conventional (n=52) transfusion strategy for correction of coagulopathy. Baseline patient characteristics and median values for TEG parameters and conventional coagulation parameters are illustrated in Table 1. The mean volumes (standard deviation: [SD]) of FFP, cryoprecipitate and platelets transfused per patient in the TEG-guided transfusion group were significantly lower than the corresponding mean volumes of blood products transfused in the conventional transfusion group {FFP [26.8 (SD:140.4) ml vs. 221.2 (SD:327.1) ml, (p=0.001)]; cryoprecipitate [17.9 (SD:65.0) ml vs. 62.5 (SD:109.3) ml, (p=0.011)]; platelets [16.1 (SD:68.2) ml vs. 63.5 (SD:123.7) ml, (p=0.014)]}. Consequently, the average cost of blood product transfusions per patient in the TEG guided transfusion group was also significantly less than in the conventional transfusion group {FFP [$6.11 (SD:32.02) vs. $50.42 (SD:74.58), (p=0.001)]; cryoprecipitate [$38.57 (SD:140.33) vs. $135.00 (SD:236.11), (p=0.011)]; platelets [$27.96 (SD:118.60) vs. $110.42 (SD:215.26), (p=0.014)]}. No significant differences in catheter related complications, including bleeding (p=0.658) or thrombosis, were observed between the two groups.

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