

**TITLE OF THE ABSTRACT : A prospective observational cohort study of complications and outcomes of haemodialysis vascular accesses.**

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**Background:**

Vascular access for haemodialysis has been considered to lifeline of haemodialysis therapy. The vascular access dysfunctions are associated with increased morbidity and mortality. Prospective observational studies from India in this regard are limited.

**Aim:**

To prospectively study the vascular access related complications in maintenance haemodialysis patients in a South Indian tertiary care hospital.

**Materials and methodology:**

All adult (age > 18yrs) patients undergoing maintenance haemodialysis in our centre from 1st Aug 2013 to 31st Oct 2013 who consented for the study were enrolled. Patients who were dialysed < 3 months were excluded. Consecutive patients who were newly enrolled in the above duration were followed up as incident patients and those who completed 3 months of maintenance haemodialysis as of 1<sup>st</sup> Aug 2013 as prevalent patients.

Various clinical, laboratory, socioeconomic and haemodialysis parameters were collected and analysed. Standard statistical tests were used for analysis.

## Results:

52 incident patients (29.9%) and 122 prevalent patients (70.1%) were enrolled. The incident patients were younger ( $44.5 \pm 12.6$  vs.  $53.5 \pm 14.7$  years) than the prevalent patients. Both subsets had more males than females. All the patients were on either twice or thrice weekly MHD.

AVF (n=47) OUTCOMES IN INCIDENT PATIENTS: Only 15.3% of patients initiated on MHD had pre-emptive AVFs. No significant difference in access complications between pre-emptive and non pre-emptive AVF groups. Distal AVFs had better survival than proximal AVF ( $307 \pm 25.9$  days vs.  $301.5 \pm 24.9$  days; p value <0.001). AVF thrombosis rate is much higher among incident patients compared to western standards (2.10 vs. 0.68 per 1000 AVF days).

AVF (n = 117) OUTCOMES IN PREVALENT PATIENTS: 91% of prevalent patients had AVF as the permanent vascular access (as against recommended 50% by KDOQI). Diabetics had a low mean survival of fistulas than non-diabetics, however this was not statistically significant ( $344.8 \pm 8.7$  days vs.  $358.7 \pm 5.9$  days; p value = 0.189).

TUNNELLED DIALYSIS CATHETER (n=8) OUTCOMES: The incidence of complications were breakage (0.80 per 1000 TDC days), thrombus formation, CRBSI, central venous stenosis and requirement of fibrin sheath stripping (all others 0.40 per 1000 TDC days).

NON-TUNNELLED DIALYSIS CATHETER (n=86) OUTCOMES: The incidence of complications were CRBSI (3.2 per 1000 NTDC days), thrombus formation (1.83 per 1000 NTDC days), catheter fracture, catheter kinking and insertion related complications (2.4, 1.2 and 1.2 per 1000 NTDC days respectively for the last 3 complications). Median (IQR) survival for NTDCs= 102.8 (72-211) days.

## Conclusions:

Vascular access complications remain a major morbidity among Haemodialysis patients. The patterns of complications in our patients are more or less comparable to the published literature. The higher incidence of thrombosis in incident patients requires further research.

**Key words** : *Vascular access, haemodialysis, thrombosis*