**ARTERIOVENOUS FISTULA OUTCOMES AND ROLE OF DUPLEX ULTRASONOGRAPHY: A SOUTHERN INDIA STUDY**

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**Introduction:** Arteriovenous fistula (AVF) is the preferred vascular access for hemodialysis with a primary failure rate of 20–60%.

**Objectives:** We studied factors affecting AVF outcomes and the role of duplex ultrasound (DUS) in preoperative and postoperative AVF assessment.

**Methods:** A single-center, prospective observational study in pre-dialysis patients who underwent AVF creation between January 2020 and December 2021 were included. AVF outcomes, associated clinical and vascular factors using DUS were analyzed.

**Results:** Of 171 patients, 83.6% were male, and the commonest etiology for chronic kidney disease was diabetic nephropathy (42.7%). 109 (63.7%) had unassisted mature AVF, 29 (16.9%) had AVF failure, and predominant (17;9.94%) had early dialysis suitability failure. The only risk factor associated with AVF failure was smoking**(p=0.04).** On DUS, AVF failure was related to the absence of vein distensibility and immediate post-operative vein diameter **(p=<0.001).** On DUS, both univariate (OR 0.98, 95% CI: 0.35-3.99; **p<0.001**) and multivariate analysis (OR 0.313, 95% CI: 0.148-0.663; **p<0.001**) corroborated that 1mm increase in outflow vein diameter in the immediate postoperative period was found to be an independent predictor of AVF outcome.

C**onclusion:** The majority of patients had unassisted AVF fistulas, and we also found a correlation between smoking and AVF failure. The factors determining the success of AVF were the cephalic vein diameter, its distensibility, and an increase in the diameter and flow volume of the draining vein at six weeks. To enhance AVF results, this study emphasizes using DUS in conjunction with traditional assessment throughout the pre-and post-operative periods.

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