

ARTERIOVENOUS FISTULA CREATION AND A SLOWING GLOMERULAR FILTRATION RATE DECLINE. A MYTH OR REALITY?

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INTRODUCTION

In our clinical practice, it was curious to note a delay in the decline of the estimated glomerular filtration rate (eGFR) after a creation of an arteriovenous fistula (AVF) in pre-dialysis patients.

It is unclear whether this observation is a result of physiological changes in the systemic circulation related to a mature AVF or simply attributed to confounding factors.

AIM

Evaluate if a successfully vascular access can improve the eGFR trajectory – Retrospective observational analysis.

METHODS

- Identified 84 patients that created an AVF between 2012 and 2015;
- Calculated their eGFR in three different moments:
 - 1 year before AVF creation
 - at the time of AVF creation
 - 1 year after AVF creation
- Calculated their mean eGFR values at these three different moments;
- Patients served as their own control for the pre and post eGFR determinations;
- Exclusion criteria: absence of AVF maturation, starting dialysis in the first year after AVF creation, transplantation or death

RESULTS

Characterization of the sample	
N	84
Mean age	71,8 ± 12,8
Male	52 (61,9%)
Diabetes	52 (61,9%)
Arterial hypertension	79 (94%)
Congestive heart failure	21 (25%)
Ischemic cardiopathy	16 (19%)
Peripheral vascular disease	32 (38,1%)

	Mean eGFR (mL/min/1,73m ²)	eGFR decline (mL/min/1,73m ²)
1 year before AVF creation	22,3 ± 6,6	-5,5 ± 6,1
At the time of AVF creation	16,9 ± 4,4	-
1 year after AVF creation	13,6 ± 5,2	-3,3 ± 3,9

Wilcoxon Test – there was a statistically significant difference between the mean eGFR before and after AVF placement ($p < 0,001$)

CONCLUSIONS

- Our results support the idea that a functioning AVF may slow eGFR decline and consequently, delay the onset of hemodialysis;
- However, there are some confounding factors that remain unclear, such as patients compliance and changes in hydration state;

FUTURE – PROSPECTIVE STUDIES