

When to refer for autologous vascular access creation in pre-dialysis patients? - a retrospective study

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INTRODUCTION

- Current guidelines promote an **early referral for arteriovenous fistula (AVF) creation**, with the rationale of **preventing complications related with central venous catheters for haemodialysis (HD)**.^{1,2,3}
- The **optimal timing for referral** is not established. It should increase the number of patients starting HD with a functioning AVF while avoiding the creation of unnecessary autologous accesses, which have also inherent morbidity.^{1,2,3}

OBJECTIVES: To establish the lower safe estimated glomerular filtration rate (eGFR) at referral to our Vascular Access Clinic that allows patients to start HD with a functioning AVF.

METHODS

- Retrospective study; inclusion of patients referred to the Vascular Access Clinic in our department from August 2013 to August 2014; follow-up period until the 31st of December of 2014.

RESULTS

Characteristics of patients

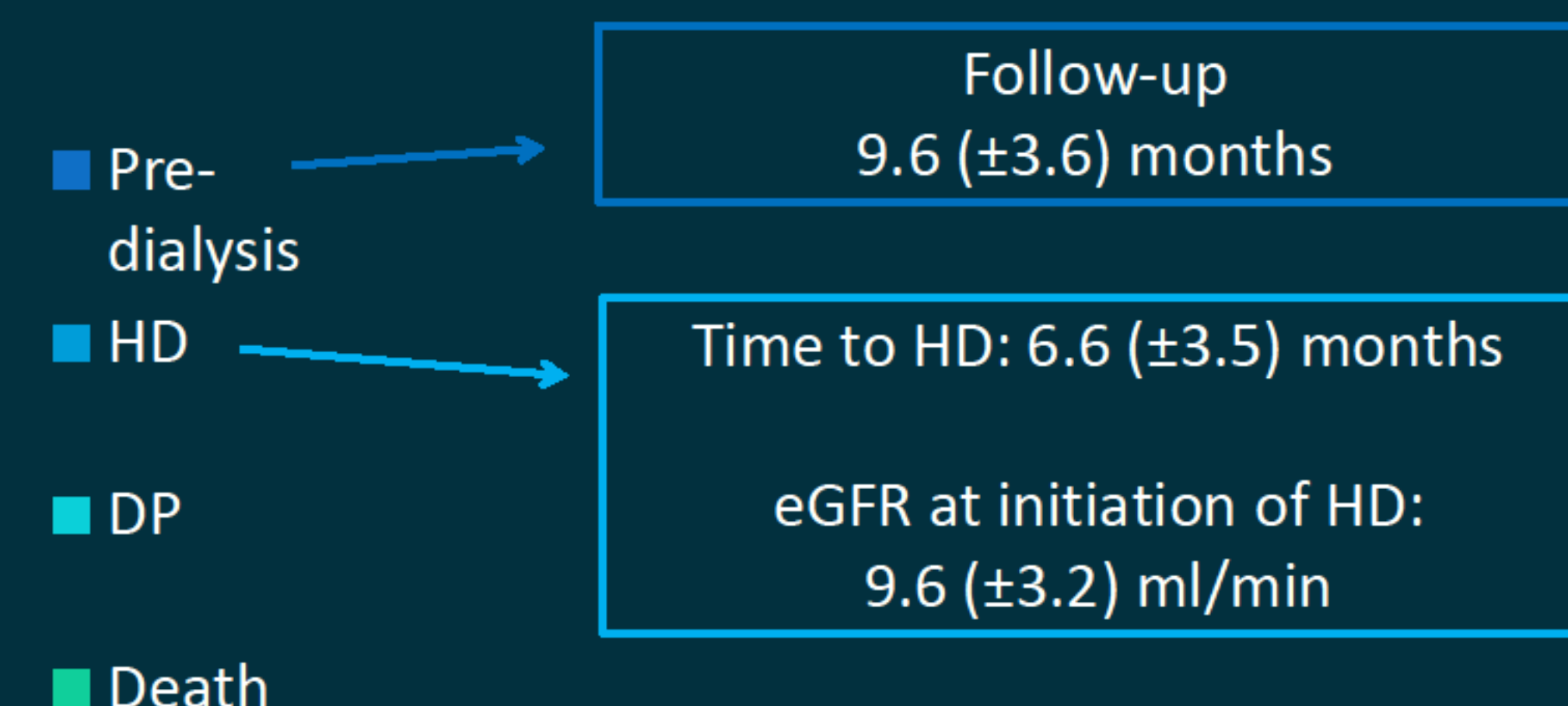
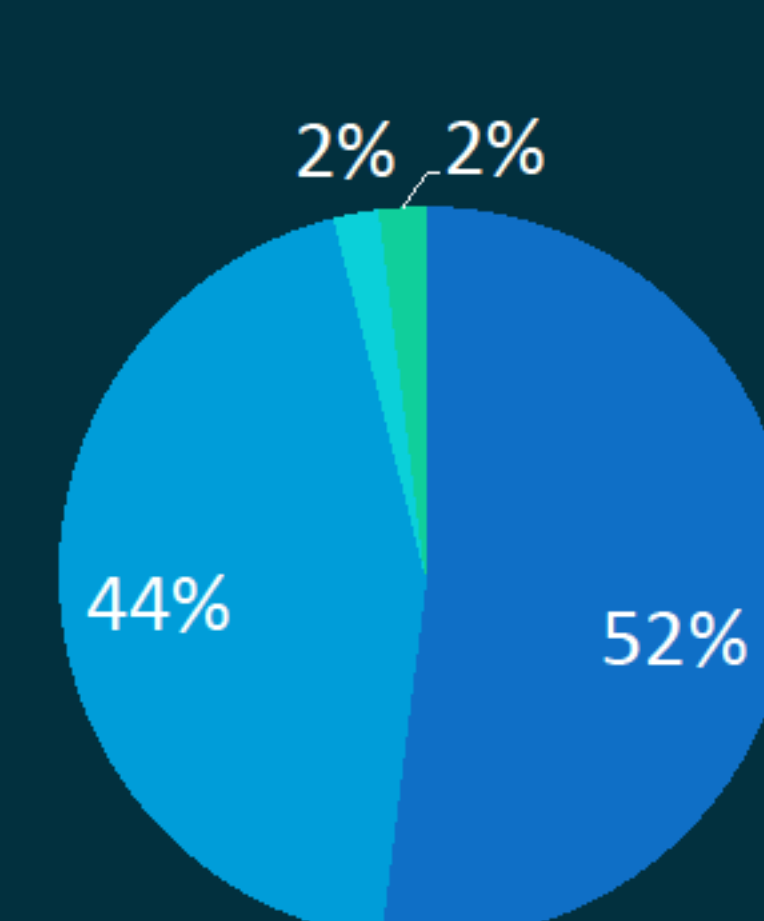
Number of patients	55
Age	68 (±11.8) years
Sex	31 (56%) ♂
Diabetes	47%
Peripheral artery disease	11%
Cardiac failure	5%
Pacemaker	0%
On antiplatelet agents	33%

At referral:

Average eGFR
13,9 (±3.3)
ml/min/1.73m²
(8.4 ↔ 22.4)

73%
eGFR < 15

At last follow-up.



24 patients (44%) initiated HD: 23 – functioning AVF;

- Only one patient – central venous catheter
 - Diabetic nephropathy
 - eGFR at referral: 12.2 ml/min.

Pre-dialysis and dialysis groups at last follow-up were comparable in relation to the number of diabetics, type of AVF and age.

Characteristics	Pre-dialysis at last follow-up	HD at last follow-up	p
Age (years)	66 ± 10	71 ± 13	0.09
Gender - Male	55%	54%	0.40
AVF RC	76%	63%	0.29
Diabetes	45%	50%	0.70

Differences in eGFR at referral?

There was no significant statistical difference in eGFR at referral between the HD and the pre-dialysis groups at last follow-up.

Groups	N (%)	eGFR 1st clinic	Time to last follow-up/HD
HD*	24 (44%)	13.8 (±3.8) ml/min	6.6 (±3.5) months
Pre-dialysis	29 (53%)	14.0 (±3.0) ml/min	9.6 (±3.6) months
p		0,8	

• Average time to HD when eGFR ≤ 15 at referral was **6.1 months**.

• Average time to HD was similar for patients referred to clinic when eGFR > 15 compared to those referred when eGFR ≤ 15 (p=0.46).

eGFR at Referral	N	N.º HD (%)	Time to HD
≤15 ml/min	40	17 (42.5%)	6.1 (±2.8) months
>15 ml/min	14	7 (50.0%)	7.7 (±4.9) months
p			0.46

***eGFR ≤12 versus > 12:**
Average time to HD of 6.1 (±3.0) and 6.7 (±3.7) months, respectively (p=0.49).

Diabetics versus Non Diabetics

Patients who started HD	N	eGFR at referral	eGFR at initiation of HD	Time to HD
Diabetes	12	14.3 (±4.2) ml/min	10.9 (±2.9) ml/min	5.9 (±4.0) months
Non diabetics	12	13.3 (±3.5) ml/min	8.3 (±3.1) ml/min	7.3 (±2.9) months
p		0.53	0.1	0.3

• Diabetic patients (compared to non diabetics) showed:

- higher eGFR at referral (14.3 ml/min);
- higher eGFR at initiation of HD (10.9 ml/min);
- shorter time to HD since referral (5.9 months).

CONCLUSION

- The majority of cases were **stage 5 (eGFR < 15ml/min)** when referred to our Vascular Access Clinic.
- Our results support that the referral for autologous vascular access creation when eGFR is lower than 15ml/min is a sufficient referral timing for most of our patients in pre-dialysis, even in diabetics.
- The results also suggest that the referral only when eGFR ≤ 12 ml/min may be equally safe for non-diabetic patients.

References:

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