



Does the time of first cannulation influence the occurrence of early complications?

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Introduction

A “mature” Vascular Access (VA) should be ready for cannulation when its status presents minimal risk of infiltration and by providing the required and prescribed blood flow throughout the HD session.

The VA’s maturation time is usually defined as 6 weeks for the Arteriovenous Fistulae (AVF) and 4 weeks for the Arteriovenous Grafts (AVG).

In some cases, these periods may not be kept due to an increasing longevity of haemodialysis patients and comorbidities like cardiovascular disease and diabetes.

Objectives

- **To assess how the timing of first cannulations influences the VA's patency and the occurrence of complications during the first 3 months.**

Methods (1/2)

- A single-centre, retrospective, quantitative, descriptive observational study;
- VA incidents were recorded over 3 years (10/2012 to 09/2015);
- VA maturation period was defined as the period from the creation until first cannulations (6 weeks for the AVF and 4 weeks for AVG).

Methods (2/2)

- An early cannulation was defined as a cannulation conducted before the recommended maturation period.
- Data concerning primary VA failure were removed.
- We considered two moments of analysis:
 - at the end of the first 3 months, complications of the first cannulation were analysed;
 - and after 1 year, we verified the influence on the patency of the VA.

Results (1/4)

- We analysed 81 VAs, 55 AVF (68%) and 26 AVG (32%).
- Of the total VA analysed, 19 (23.5%) showed no complications during the first 3 months after the first cannulation.

Results (2/4)

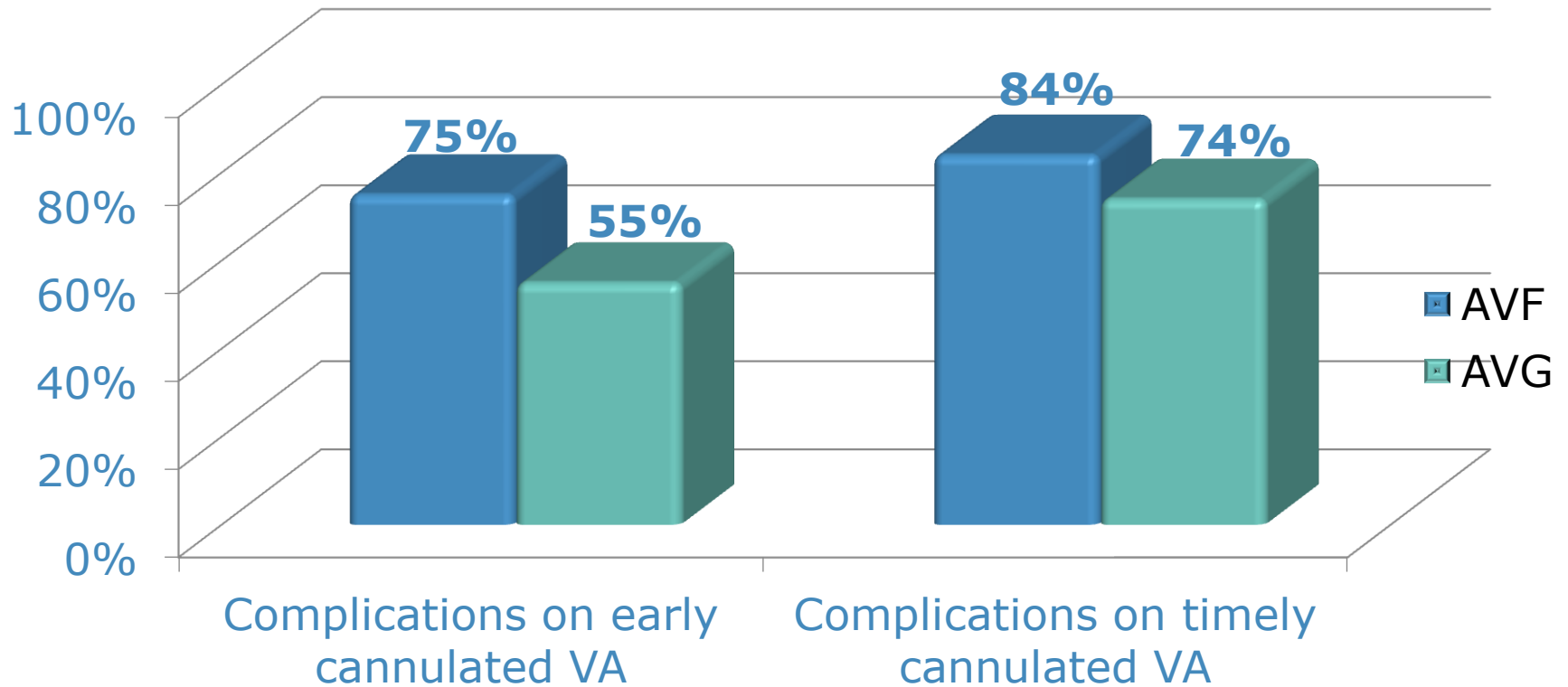


Figure 1: VA complications during the first 3 months after first cannulation

Results (3/4)

AVF	1 st month	2 nd month	3 rd month	AVG	1 st month	2 nd month	3 rd month
Thrombosis	7.2%	1.8%	3.6%	Thrombosis	15.3%	0%	11.5%
Additional cannulation	52.7%	63.6%	30.9%	Additional cannulation	42.3%	34.6%	15.3%
Haematoma	32.7%	32.7%	16.3%	Haematoma	7.0%	15.3%	7.6%
Infection	10.9%	1.8%	3.6%	Infection	11.5%	0%	3.8%

Table 1 and 2: Most frequent VA complications during the first 3 months after first cannulation

On average, during the first 3 months after the first cannulation, 1.1 complications were observed in the AVF group versus 0.7 complications in the AVG group.

Results (4/4)

- Of the 81 VAs analysed, after 1 year 12 (14.8%) of them thrombosed, i. e. 7 (12.7%) VAFs and 5 (19.2%) AVGs.
- Of all thrombosis cases, 4 AVFs had an initial Qa <400 ml/min and 1 AVG had Qa <600ml/min.

Conclusions

- In our study, early VA cannulation (short maturation period) did not lead to a higher early complication rate.
- Haematoma and additional cannulations are the most frequent complications in AVF; thrombosis is more frequent in AVG, while infection is similar in both VA groups.

**Thank You Very Much
for Your Attention!**

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