# AV accessen efter njurtransplantation

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VAS 2025 PADOVA

14th Congress of the Vascular Access Society
April 3–5, 2025, Padova, Italy

# Vascular access management after kidney transplantation

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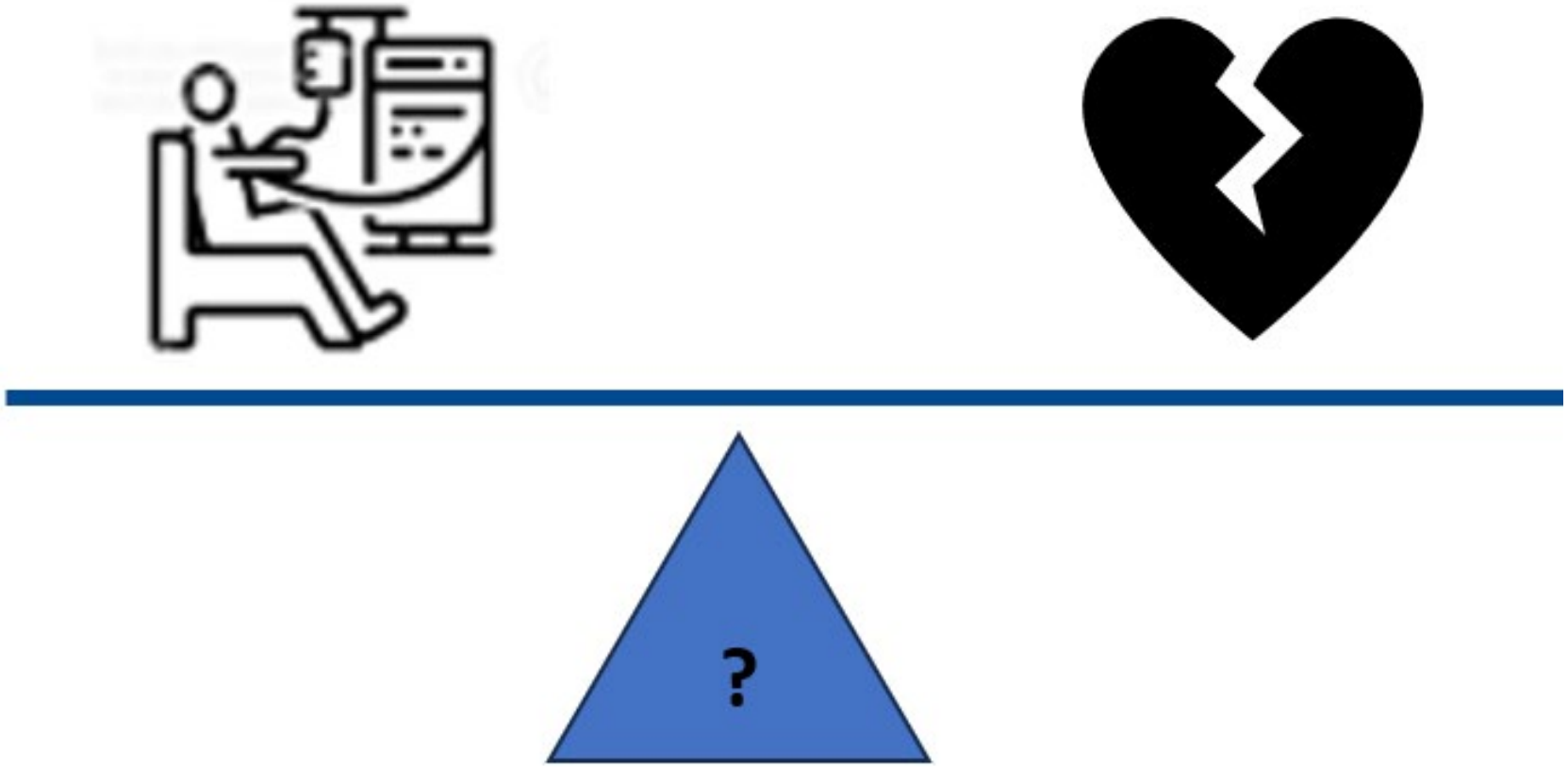
**Position paper on behalf of the Vascular Access Society and the European Kidney Transplant Association.**
Barış Akin, Tamara Jemcov, David Cucchiari, Jan Malik, David Shemesh, Gavin Pettigrew, Ulrika Hahn Lundström, Gianluigi Zaza, Joris I. Rotmans



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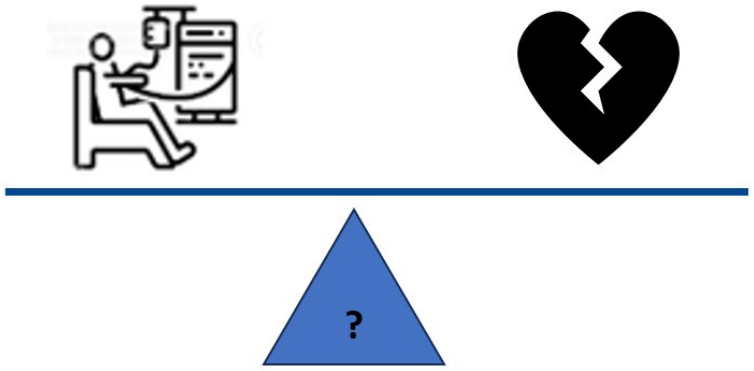
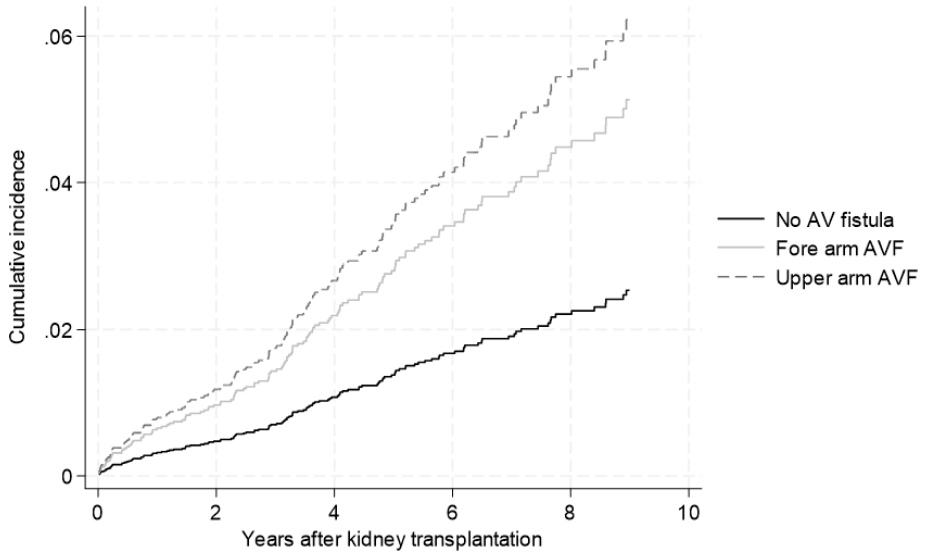


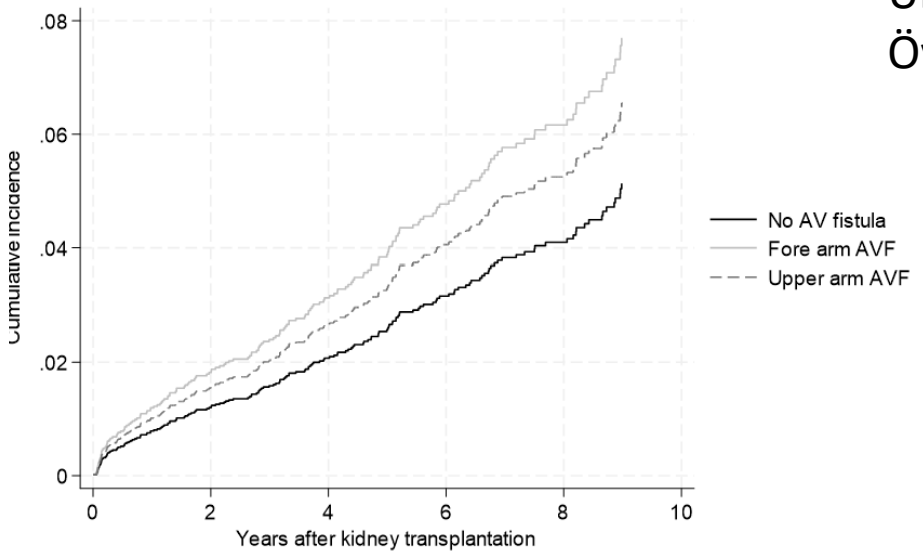

1,5 liters/min=
1,5x60x24x365x3,17=2500000=
**Olympic Pool på 3,17 år**

# Kidney transplantation with a functional AV fistula is associated with Long-term risk of *de novo* heart failure and atrial fibrillation

Fig 1. TIME UNTIL INCIDENT HEART FAILURE




2. TIME UNTIL INCIDENT ATRIAL FIBRILLATION




SRR; 2009-20
N= 3,361
No AVF; n= 2236
Underarm AVF; n=829
Överarm AVF; n=296

U Hahn Lundstrom, M Evans

# AVF ligering associerar till en significant reduktion av Vänster hjärt hypertrofi

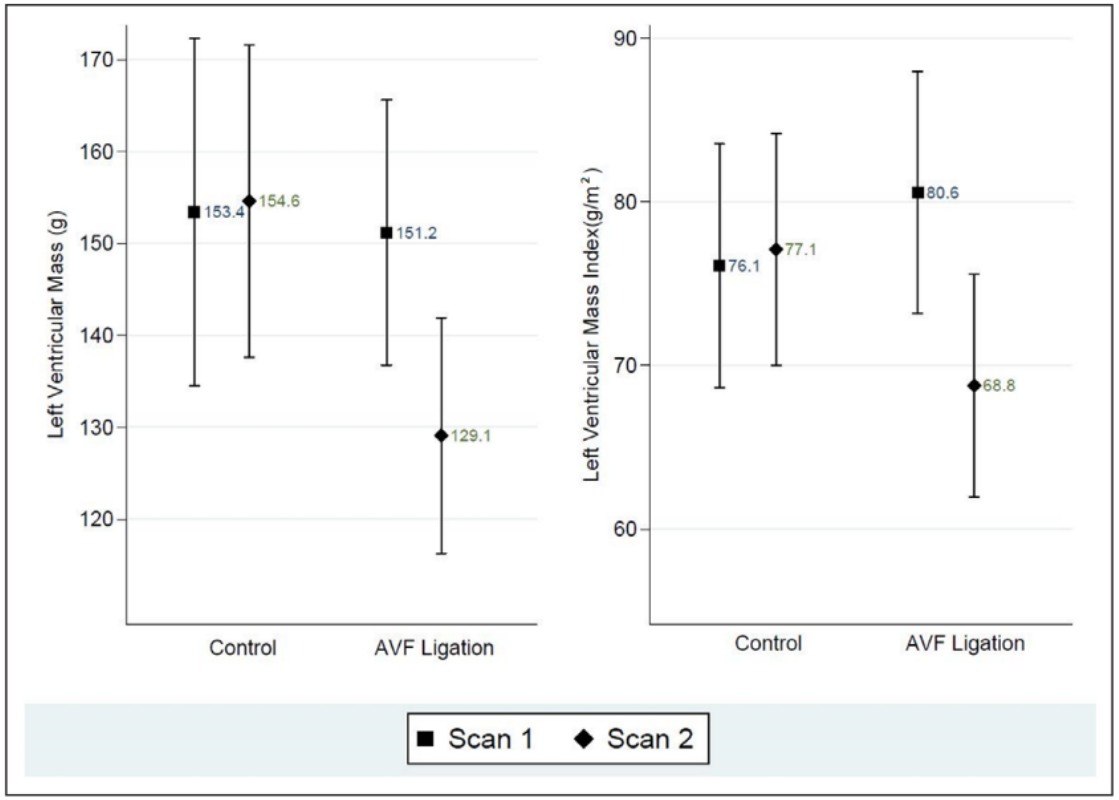



**Figure 2. Difference in the means of left ventricular (LV) mass (left) and LV mass index (right) between the 2 scans in the ligation and control groups (*P*<0.001).**
This figure shows the means in 54 subjects who completed the second cardiac magnetic resonance scan, 27 in the arteriovenous fistula (AVF) ligation group and 27 in the control group. Change in means and the 95% CI show a significant statistical difference between groups (*P*<0.001) with an independent *t* test.

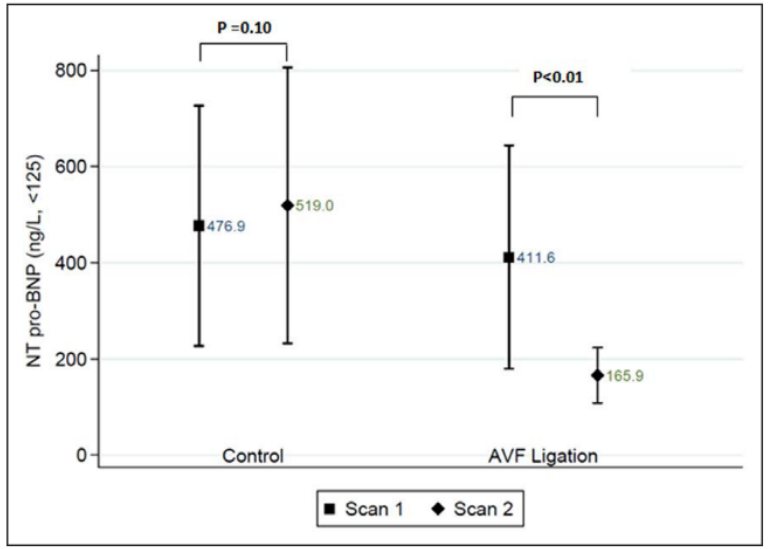



**Figure 3. Effect of intervention on NT-proBNP (N-terminal pro-B-type natriuretic peptide) levels.**
Changes in the blood NT-proBNP levels (nanograms per liter) performed at the time of cardiac magnetic resonance scans in the control and arteriovenous fistula (AVF) ligation groups, showing a significant drop in the AVF ligation group compared with the control group (*P*<0.01).

Rao NN, et al. Effects of Arteriovenous Fistula Ligation on Cardiac Structure and Function in Kidney Transplant Recipients. *Circulation.* 2019;139(25):2809-2818.

# Patency är inte det samma som att den kommer till användning

**Table 3** Reasons for AVF use after kidney transplantation. The categories are not mutually exclusive, i.e. there could be more than one reason for AVF use in a single patient

| Extracorporeal procedure | N of patients (%) |
|---|---|
| Hemodialysis | |
| for delayed graft function | 150 (23.9%) |
| for graft failure | 53 (8.4%) |
| Therapeutic plasma exchange | |
| for antibody-mediated rejection | 27 (4.3%) |
| for recurrent focal segmental glomerulosclerosis | 6 (0.9%) |

Vajdic Trampuz B, et al. A national cohort study on hemodialysis arteriovenous fistulas after kidney transplantation- long-term patency, use and complications. *BMC nephrology.* 2021;22(1):344.

# KFRE in KTx patients

Original Clinical Research

Canadian Journal of Kidney Health and Disease
Volume 7: 1–9
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DOI: 10.1177/2054358120922627
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## Validation of the Kidney Failure Risk Equation in Kidney Transplant Recipients

Navdeep Tangri[1,2], Thomas W. Ferguson[1,2], Chris Wiebe[1], Frederick Eng[1,2], Michelle Nash[3], Brad C. Astor[4], Ngan N. Lam[5], Feng Ye[5], Jung-Im Shin[6], Reid Whitlock[1,2], and Darren A. Yuen[3]

**Results:** A total of 3659 patients were included. Pooled C-statistics were good in the entire population, at 0.81 (95% confidence interval: 0.72-0.91) for the 2-year KFRE and 0.73 (0.67-0.80) for the 5-year KFRE. Discrimination improved among patients with poorer kidney function (eGFR $<$ 45 mL/min/1.73 $m^2$), with a C-statistic of 0.88 (0.78-0.98) for the 2-year KFRE and 0.83 (0.74-0.91) for the 5-year KFRE.

**Limitations:** The KFRE does not predict episodes of acute rejection and there was heterogeneity between cohorts.
**Conclusions:** The KFRE accurately predicts kidney failure in kidney transplant recipients at 1-year posttransplantation. Further validation in larger cohorts with longer follow-up times can strengthen the case for clinical implementation.

# Vascular access management after kidney transplantation

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AV accessen inverkan på hjärta och cirkulation

AV access inverkan på transplantatfunktionen

Transplantatets prognos

Immunosuppression och access-relaterade aneurysm

Chans till fungerande AVF vid Tx- svikt

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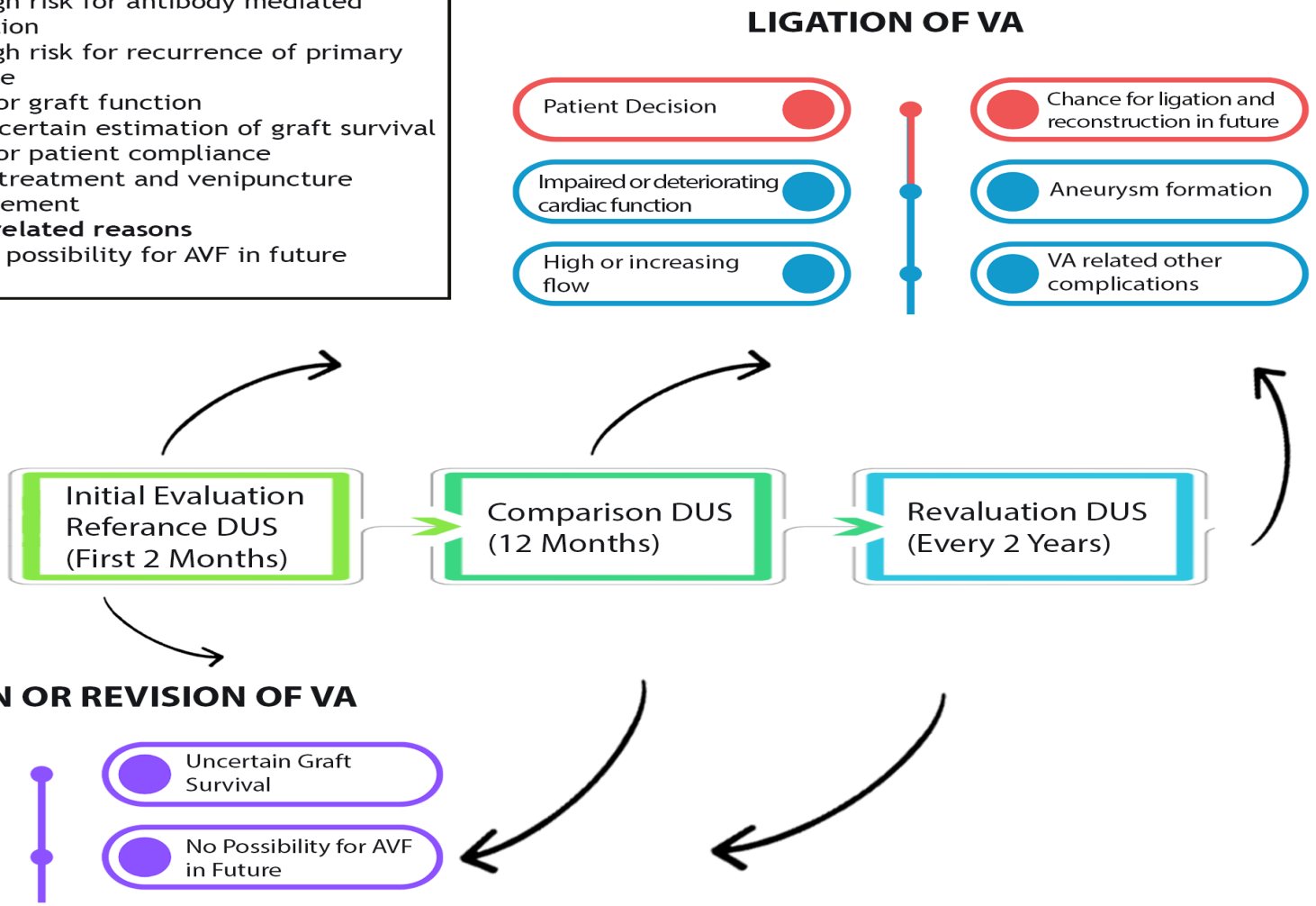
- Fördelar att bibehålla en fungerande AV access efter KTx
- Fördelar att ligera en fungerande AV access efter KTx
- Kirurgisk teknik för interventioner av AV fistlar och graft
- Ligering av AV access och rekonstruktion i framtiden för HD: switch off and on
- Patientens perspektiv

| Factors for Ligation of VA | Factors for Preservation of VA |
|---|---|
| **I. Impaired or deteriorating cardiac function**<br>**II. High or increasing blood flow (1500 m/min)**<br>**III. Aneurysm formation**<br>• Increasing brachial artery dilatation<br>• Increasing venous aneurysmal dilatation<br>**IV. VA related complications**<br>• Extremity edema<br>• Distal Hypoperfusion<br>• Thrombosis<br>• Pain<br>• Cosmetic/psychologic concern | **I. Requirement to use**<br>• High risk for antibody mediated rejection<br>• High risk for recurrence of primary disease<br>• Poor graft function<br>• Uncertain estimation of graft survival<br>• Poor patient compliance<br>• IV treatment and venipuncture requirement<br>**II. VA related reasons**<br>• No possibility for AVF in future |

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# För eller mot AV access ligering

| Factors for Ligation of VA | Factors for Preservation of VA |
|---|---|
| **I.Impaired or deteriorating cardiac function**<br>**II.High or increasing blood flow (1500 m/min)**<br>**III.Aneurysm formation**<br>•Increasing brachial artery dilatation<br>•Increasing venous aneurysmal dilatation<br>**IV.VA related complications**<br>•Extremity edema<br>•Distal Hypoperfusion<br>•Thrombosis<br>•Pain<br>•Cosmetic/psychologic concern | **I. Requirement to use**<br>•High risk for antibody mediated rejection<br>•High risk for recurrence of primary disease<br>•Poor graft function<br>•Uncertain estimation of graft survival<br>•Poor patient compliance<br>•IV treatment and venipuncture requirement<br>**II.VA related reasons**<br>•No possibility for AVF in future |

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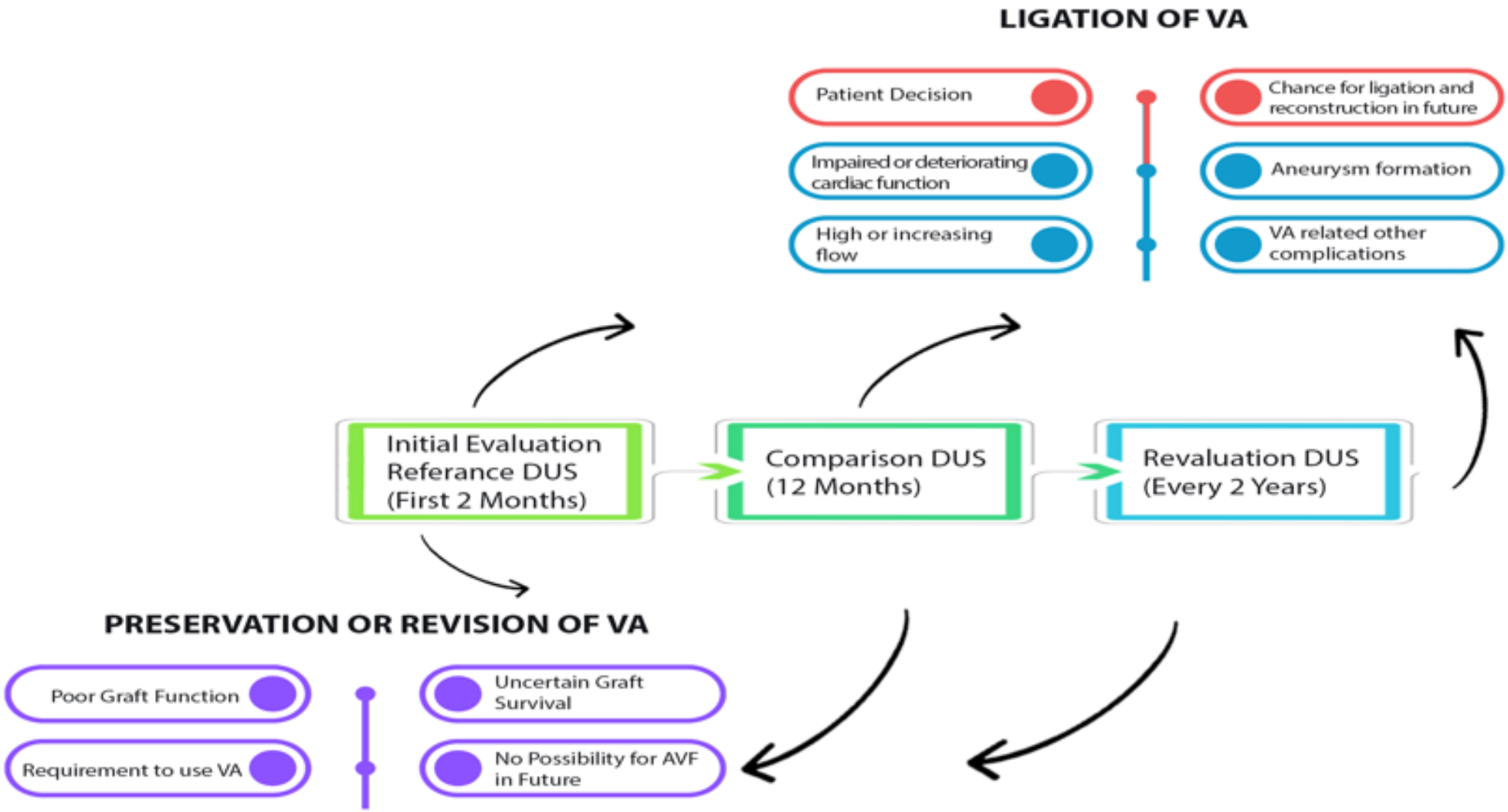


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# AV access handläggning efter KTx- sammanfattning

- AV access hos KTx recipienter är en modifierbar faktor som significant påverkar hjärtfunktionen
- AV ligering minskar hjärthypertrofi
- Implementing av AV övervakningsprogram för att förbättra KTx vård
- Gynnsam prognos för KTx- AV ligering liberalt- när välfungerande KTx graft
- Beslut om AV ligering i multi-disciplinärt team med aktiv patientmedverkan

ESOT | Transplant International

CONSENSUS REPORT
published: 13 November 2025
doi: 10.3389/ti.2025.14712

# Vascular Access Management After Kidney Transplantation Position Paper on Behalf of the Vascular Access Society and the European Kidney Transplant Association

*Barış Akin*[1,2]*, *Tamara K. Jemcov*[3,4,5], *David Cucchiari*[2,6], *Jan Malik*[5,7], *Gavin J. Pettigrew*[8], *Ulrika Hahn Lundström*[5,9], *Gianluigi Zaza*[2,10] *and Joris I. Rotmans*[5,11]

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