

# Prognostic value of anti-vimentin antibodies in pre-sensitized heart transplant patients

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# Disclosures

- **The authors have nothing to disclose.**

# Background

- Having antibodies to donor specific human leukocyte antigens (HLA) is a well-known risk factor associated with poor outcome in solid organ transplantation.
- Recently, the importance of non-HLA Abs have also been suggested to be associated with outcomes in heart transplantation (HTx).  
However, results have not been consistent.

# Background

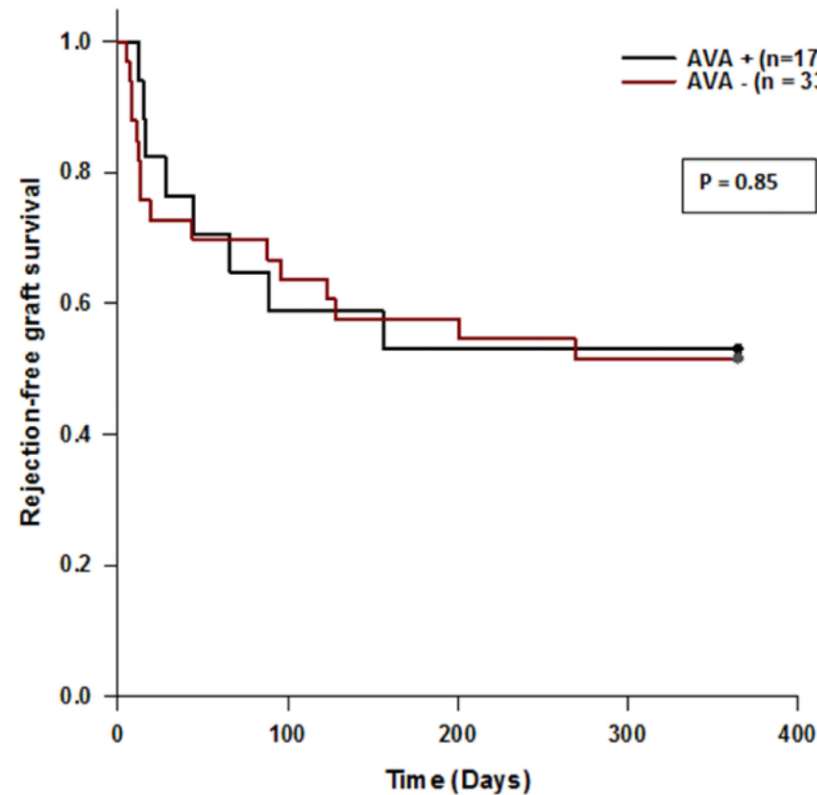
- Post-transplant anti-vimentin Ab was an independent predictor of transplant-associated CAD

**TABLE 2. Antivimentin titres in patients at 1 yr and combined 1 and 2 yr after transplantation**

	Year 1 titre mean (SE)	Year 1 and 2 titre mean (SE)
TxCAD (n=38)	188 (30)	202 (23)
Non-CAD (n=71)	101 (16)	105 (14)
<i>P</i> value Mann-Whitney	0.0038	<0.0001

# Background

- However, pre-transplant anti-vimentin Abs did not correlate with early rejection or graft survival.



# Study Aim

- We sought to assess the ***combined effect*** of donor specific HLA antibodies and non-HLA, anti-vimentin antibodies on graft outcome in Korean HTx patients.

# Methods

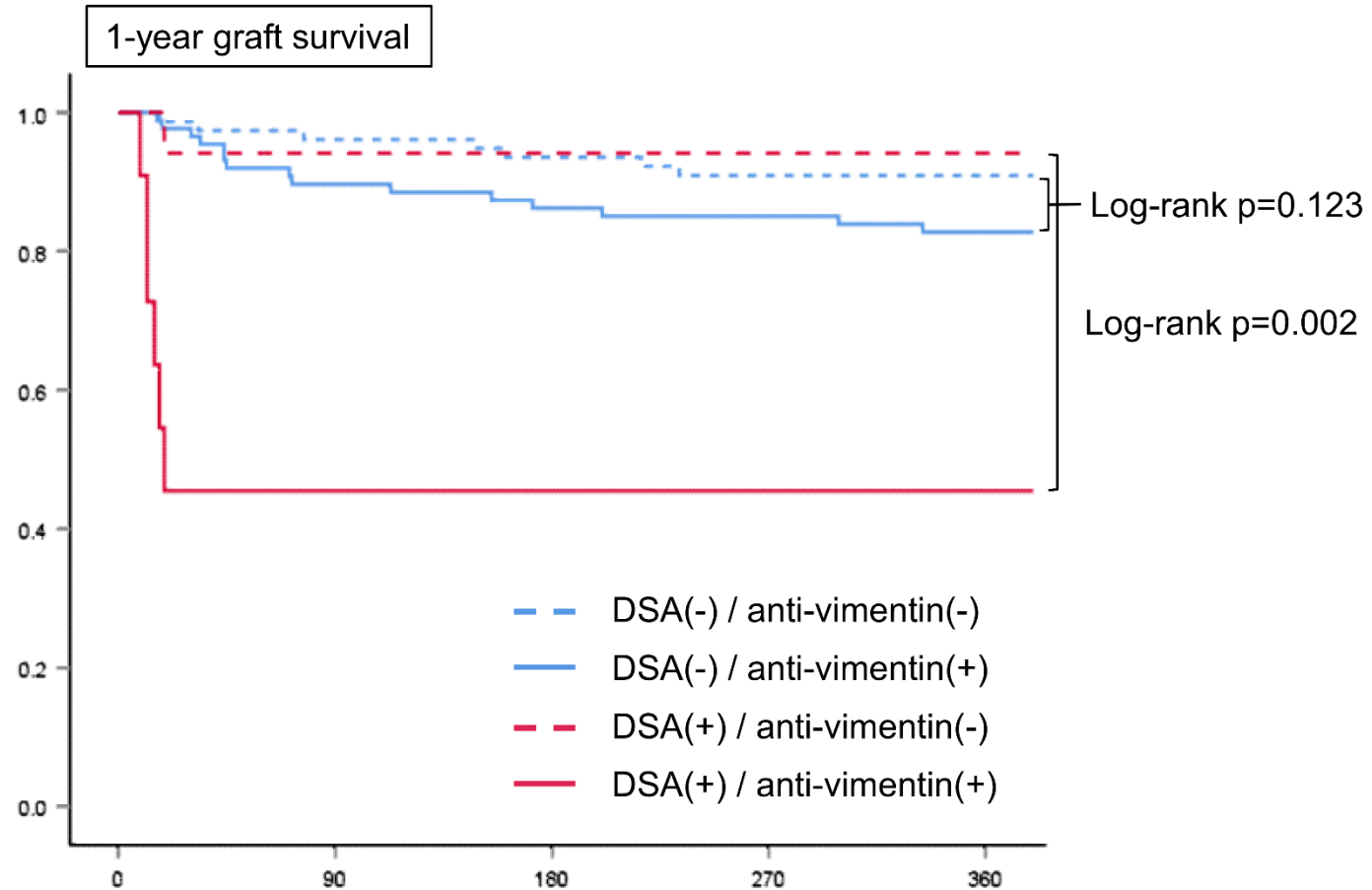
- Pre-transplant serum was analyzed in 192 adult patients who underwent HTx from January 2014 to December 2016 in four large transplant centers in Korea.
  - Single Ag bead technology / Flow cytometry
- Demographic and outcome data were obtained from the Korean Organ Transplantation Registry (KOTRY), an organization established in 2014 to collect data on transplant patients.

# Demographics

	DSA(-) / anti-VM(-) (n=77)	DSA (-) / anti-VM (+) (n=87)	DSA (+) / anti-VM (-) (n=17)	DSA (+) / anti-VM (+) (n=11)	p-value
Sex, male	51 (66.2)	67 (77.0)	4 (23.5)	5 (45.5)	<0.001
Age, years	51.6 ± 13.4	49.0 ± 13.7	48.1 ± 13.6	53.7 ± 11.3	0.439
BMI, kg/m <sup>2</sup>	22.6 ± 3.5	22.6 ± 3.7	22.2 ± 3.3	22.6 ± 3.2	0.975
Hypertension	24 (31.2)	25 (28.7)	6 (35.3)	5 (54.5)	0.375
Diabetes	22 (28.6)	22 (25.3)	1 (5.9)	2 (18.2)	0.246
CKD	12 (15.6)	9 (10.3)	1 (5.9)	2 (18.2)	0.563
Smoking	10 (13.0)	11 (12.6)	2 (11.8)	0 (0)	0.041



# K-M curve for 1-year graft outcome



# Conclusion

- In our analysis of Korean heart transplant patients, Donor specific ABs (DSA) and anti-vimentin Abs were both associated with increased risk of 1-year graft failure.
- The presence of pre-transplant anti-vimentin Ab further discriminated graft survival, especially in DSA(+) recipients.
- Assessing presence of pre-transplant anti-vimentin Ab could help predict graft outcome and aid in tailoring immunotherapy for specific patients.

# Limitations

- Short duration (1 year) of follow-up period
  - Too short to investigate cardiac allograft vasculopathy
- Low rates of Ab-mediated rejections in the study population
  - Possibility of under-reporting