

BACKGROUND

- Vascularized Composite Allotransplantation (VCA) donor identification requires both:
 - Phenotypic compatibility & immunologic compatibility
- Calculated panel reactive antibody (cPRA) scores estimate the percentage of potential donors expected to be immunologically incompatible with a recipient
- Phenotypic matching in VCA depends on multiple factors, including: Size, sex, skin tone, aesthetic features
- The relationship between race, cPRA, and access to transplantation remains poorly defined in VCA.
- Study Aim:**
 - Evaluate racial differences in cPRA and waitlist time among skin-containing VCA recipients

METHODS

- Queried the Organ Procurement and Transplantation Network (OPTN) database in September 2025 for recipients of skin-containing VCA
- Variables collected included:
 - VCA graft type
 - Age
 - Race/ethnicity
 - cPRA score
 - Waitlist time
- Statistical comparisons evaluated associations between:
 - Race and cPRA
 - Race and waitlist time
- Comparisons were made using Kruskal-Wallis test

RESULTS

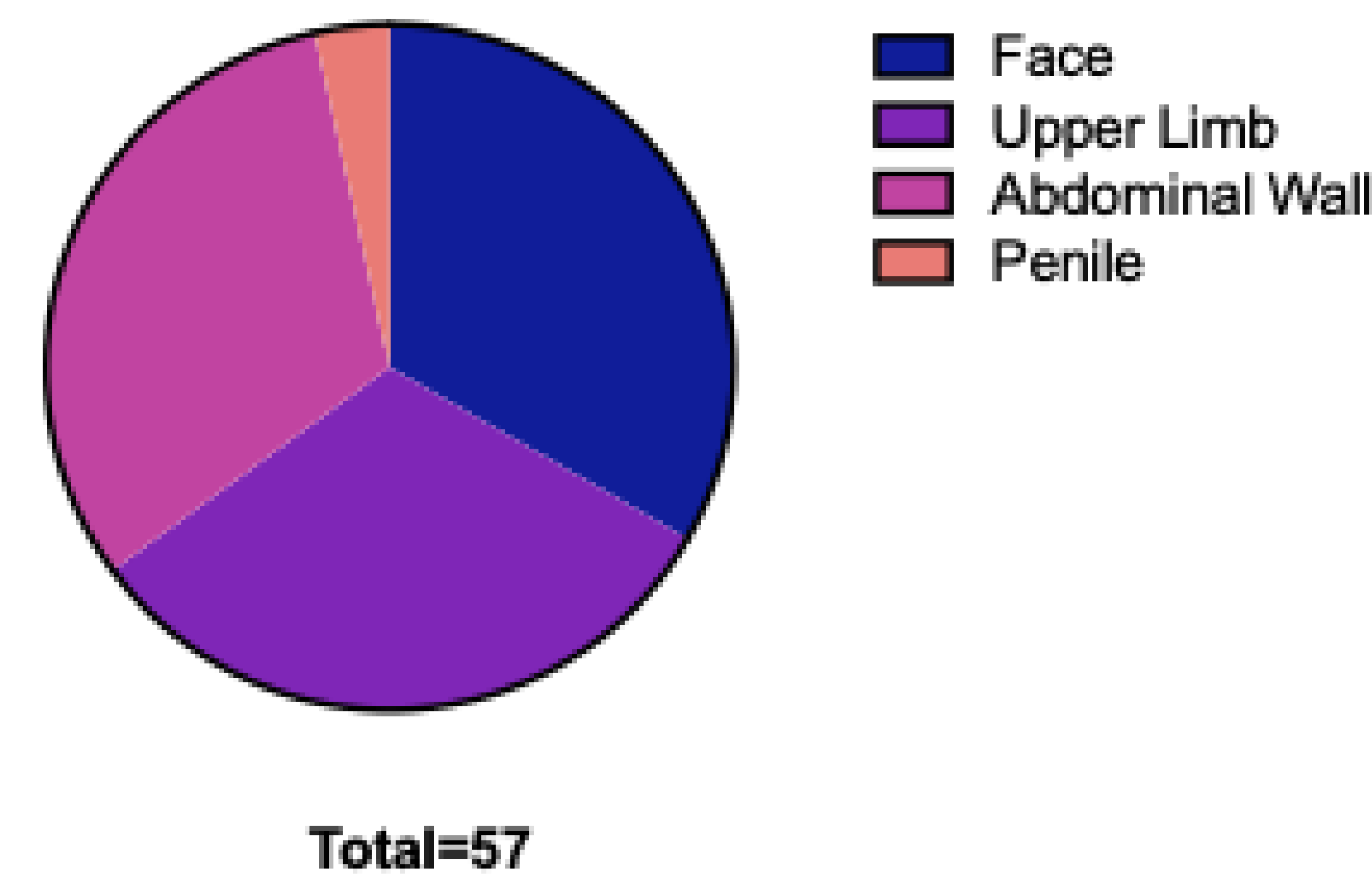


Figure 1: Distribution of VCA types in overall cohort

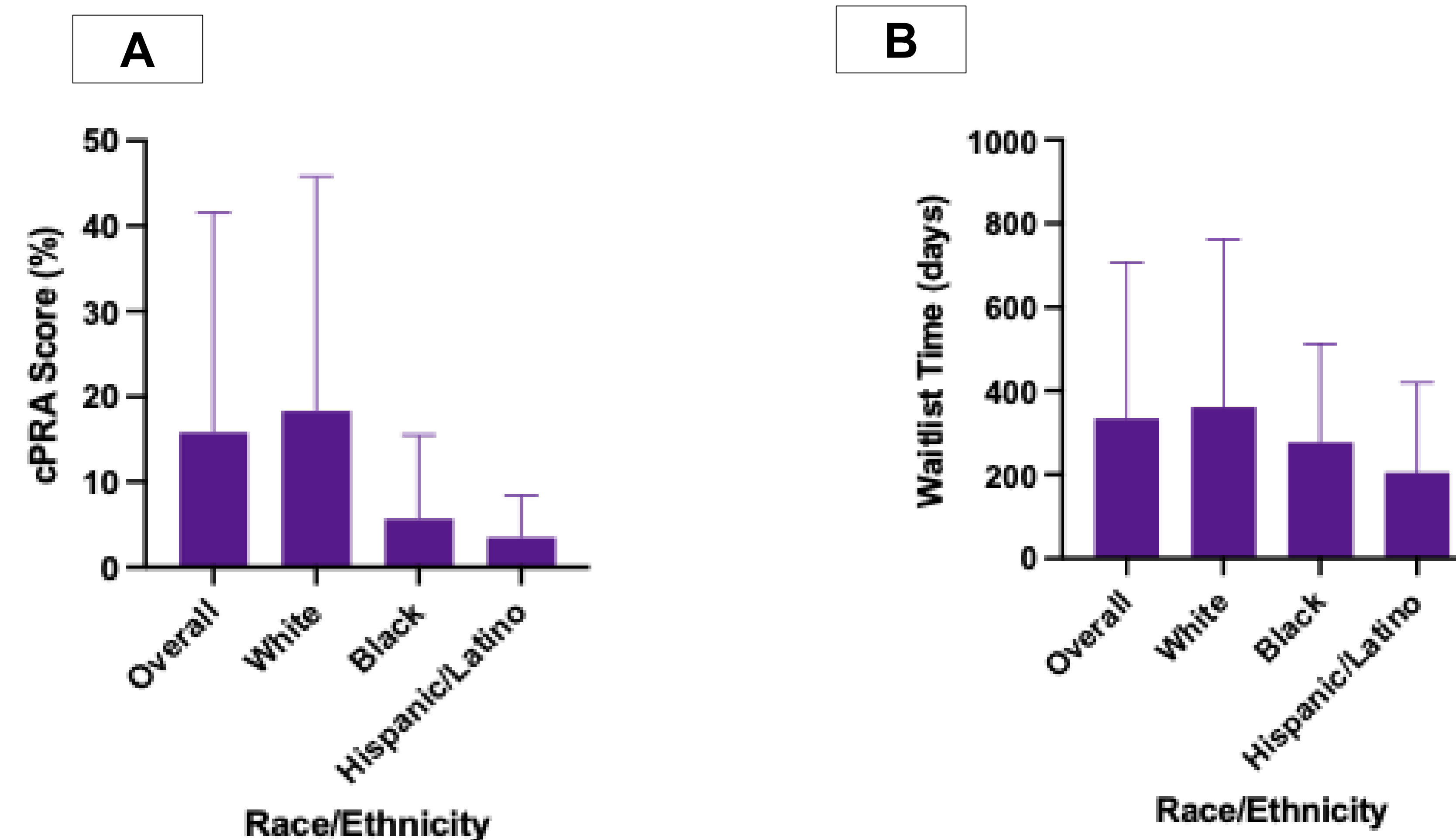


Figure 2: Calculated panel reactive antibody scores of overall cohort and each racial/ethnicity group (A) waitlist time in days for the overall cohort and each racial/ethnicity group (B)

RESULTS

- A total of 57 recipients of skin-containing VCA were identified in the OPTN database.
- Mean recipient age: 40.0 ± 15 years
- Racial/ethnic distribution of the total cohort:
 - White: 45 (78.9%)
 - Black: 6 (10.5%)
 - Hispanic/Latino: 3 (5.3%)
 - Other: 3 (5.3%)
- Overall mean cPRA was $16.2\% \pm 24.5\%$.
- Mean cPRA did not differ significantly by race/ethnicity ($p = 0.78$)
- Median total waitlist time was 224 days (IQR 4–1,740).
- Waitlist time did not differ significantly by race/ethnicity ($p = 0.461$)

CONCLUSION

- This national cohort of skin-containing VCA recipients demonstrated relatively low cPRA scores across all racial and ethnic groups
- Unlike SOT, where cPRA is strongly associated with prolonged waiting time, cPRA was not significantly associated with race or waitlist duration in VCA
- These findings suggest that cPRA alone may be insufficient to predict donor match success
- In VCA, donor selection reflects a dual-matching process requiring both:
 - Immunologic compatibility
 - Phenotypic compatibility