

Surviving Immediate Breast Reconstruction: A Multi-institutional Propensity Score Matched Analysis of Implants and Flaps after Mastectomy

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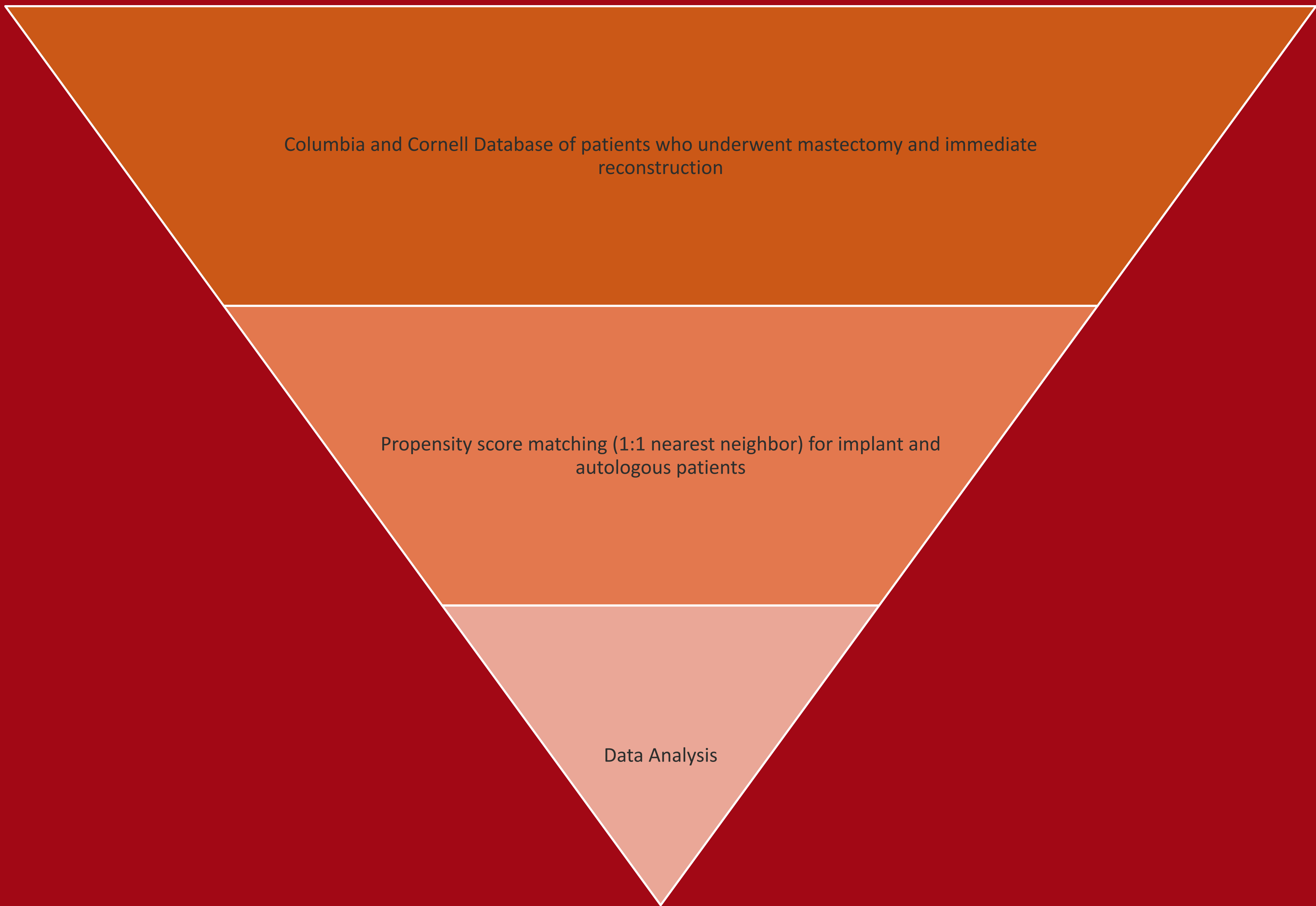
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Background

The long-term safety of immediate breast reconstruction has been previously demonstrated. However, the lack of randomized controlled trials has resulted in very few direct comparisons of the long-term outcomes of implant and flap-based reconstruction. We seek to evaluate survival and recurrence outcomes of implant and flap reconstruction in a more heterogenous population from a multi-institutional database.

Methods

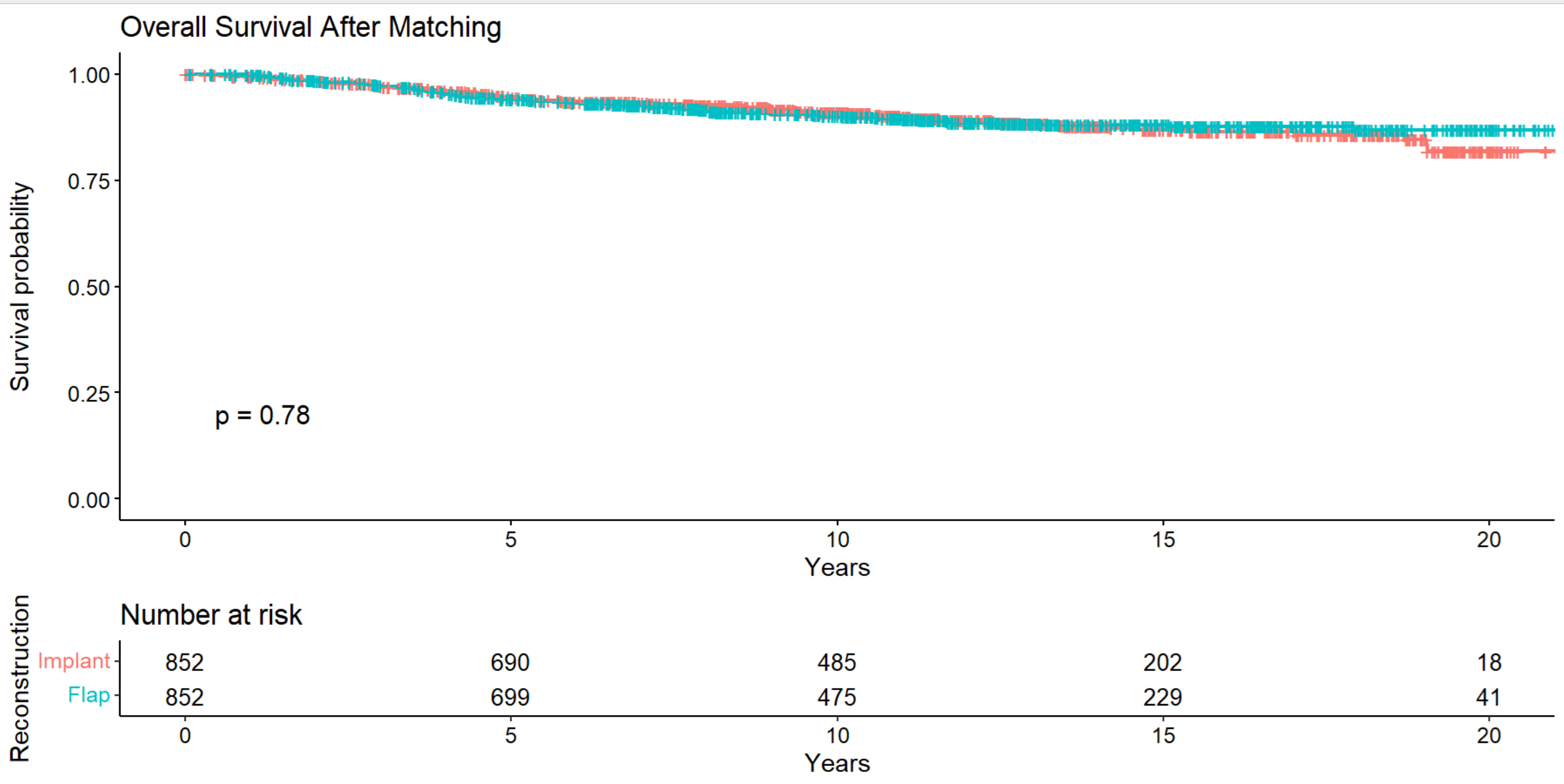
Retrospective review identified mastectomy patients with immediate reconstruction from Cornell and Columbia between 1979-2019. Patients were matched using propensity scores (1:1 nearest neighbor with 0.1 calipers) based on known characteristics. Kaplan-Meier estimates for time-to-event endpoints and hazard ratios (HR) from Cox-regression models were used.



Results

After propensity score matching, 852 implant and 852 flaps patients were used for analysis. Median patient age was 49 both groups. There was no difference in survival probability between the groups based on Kaplan-Meier analysis (p=0.78). Reconstruction type was not associated with survival (p=0.8). There was no significant difference in locoregional or distant recurrence rate, or the restricted mean recurrence time at 10 years (Flap 9.72 vs. Implant 9.82 years; p=0.12). Subset Kaplan-Meier analysis of high tumor grade patients failed to demonstrate a difference in overall survival between groups (p=0.38)

Figure 1: Overall Survival for Implant and Flap Reconstruction



Conclusion

- To our knowledge, this is the first study using PSM to compare outcomes in implant and flap-based reconstruction using a large heterogenous population from a multi-institutional database.
- We found no difference in overall survival, even for high tumor grade patients
- The results may suggest equivalence in long-term outcomes regardless of reconstruction type.