

## **SIGNIFICANCE STATEMENT**

Late antibody-mediated rejection (ABMR) is a major cause of graft failure, for which there is no proven effective treatment. Uncontrolled studies have suggested potential efficiency of bortezomib, a proteasome inhibitor targeting antibody-producing plasma cells. This paper describes the results of the BORTEJECT Study, a randomized, placebo-controlled trial to investigate the effect of bortezomib on the course of late ABMR. Although treatment was associated with gastrointestinal and hematologic toxicity, there was no significant effect on kidney function, donor-specific antibody levels, rejection phenotypes, or graft survival. Bortezomib as a single agent may not ameliorate the progression of late rejection. Our study results reinforce the need for rigorous trials to test new therapeutic strategies for graft failure.