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ORIGINAL RESEARCH

Real-World 1-Year Results of Tricuspid Edge-to-Edge Repair From the bRIGHT Study

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ABSTRACT

BACKGROUND Severe tricuspid regurgitation (TR) is known to be associated with poor quality of life and increased risk of death when left untreated.

OBJECTIVES We sought to report the 1-year clinical outcomes of subjects treated by tricuspid transcatheter edge-to-edge repair (TEER) with the TriClip system (Abbott Cardiovascular) in a contemporary real-world setting.

METHODS The bRIGHT (An Observational Real-World Study Evaluating Severe Tricuspid Regurgitation Patients Treated With the Abbott TriClip Device) postapproval study is a prospective, single-arm, open-label, multicenter postmarket registry conducted at 26 sites in Europe, with central event adjudication and echocardiographic core-laboratory assessment.

RESULTS Enrolled subjects (n = 511) were elderly (79 ± 7 years) with significant comorbidities. A total of 88% had baseline massive or torrential TR, and 80% of subjects were in NYHA functional class III/IV. TR was reduced to moderate or less in 81% at 1 year. Significant improvements in NYHA functional class (21% to 75% I/II, $P < 0.0001$) and Kansas City Cardiomyopathy Questionnaire (KCCQ) score (19 ± 26-point improvement, $P < 0.0001$) were observed at 1 year. One-year mortality was significantly lower in subjects who achieved moderate or lower TR at 30 days; however, there was no difference in mortality among subjects who achieved moderate, mild, or trace TR at 30 days. In addition to TR reduction at 30 days, baseline serum creatinine and baseline right ventricular tricuspid annular plane systolic excursion (RV TAPSE) were independently associated with mortality at 1 year (OR: 2.169; 95% CI: 1.494-3.147; $P < 0.0001$; OR: 0.636; 95% CI: 0.415-0.974; $P = 0.0375$). Mortality was not associated with baseline TR grade or with center volume.

CONCLUSIONS Tricuspid TEER using the TriClip system was safe and effective through 1 year for subjects with significant TR and advanced disease in a diverse real-world population. (An Observational Real-world Study Evaluating Severe Tricuspid Regurgitation Patients Treated With the Abbott TriClip Device [bRIGHT]; NCT04483089)
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ABBREVIATIONS AND ACRONYMS

KCCQ = Kansas City Cardiomyopathy Questionnaire

RAV = right atrial volume

RVEDD = right ventricular end diastolic diameter

RV TAPSE = right ventricular tricuspid annular plane systolic excursion

SLDA = single leaflet device attachment

TEE = transesophageal echocardiography

TR = tricuspid regurgitation

TTE = transthoracic echocardiography

T-TEER = tricuspid transcatheter edge-to-edge repair

Tricuspid transcatheter edge-to-edge repair (T-TEER) for tricuspid regurgitation (TR) is an emerging, nonsurgical approach available to a traditionally underserved high-risk patient population.[1] T-TEER has been shown to be safe and effective in early, global studies.[2,3] The first randomized controlled trial (RCT) in the field, TRILUMINATE Pivotal, recently demonstrated high rates of TR reduction and associated increases in quality of life.[4,5] However, questions remain on the transferability of these results to real-world practice and on how T-TEER affects mortality. Previous observational studies have identified several factors potentially linked to mortality, including baseline TR severity, T-TEER failure resulting in severe residual TR, absence of sinus rhythm, and impaired kidney function.[6,7] However, these studies are limited by their reliance on data from early experience cases, absence of central event adjudication, and—notably—the lack of echocardiographic core-laboratory analyses.

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The bRIGHT (Observational Real-World Study Evaluating Severe Tricuspid Regurgitation Patients With the Abbott TriClip Device; NCT04483089) post-approval study is the first prospective, open-label, multicenter, postmarket registry to evaluate the safety and performance of the TriClip system (Abbott Cardiovascular) in a contemporary, nonselected real-world cohort, using central assessment of events and echocardiographic characteristics.[8] In contrast to the TRILUMINATE Pivotal RCT, subjects enrolled in bRIGHT were more symptomatic, had more severe TR grades, and more complex anatomies, thus reflecting patients in real-world practice.[4,8,9] The bRIGHT study therefore is well positioned to address questions regarding the applicability of procedural results and factors associated with mortality in real-world populations following treatment of TR with T-TEER. Here we report the 1-year outcomes and variables associated with increased risk of mortality for subjects treated with the TriClip system in the bRIGHT study.

METHODS

STUDY DESIGN. The bRIGHT study is a prospective, single-arm, open-label, multicenter, postmarket registry designed to assess the safety and performance of T-TEER with the TriClip system. Details on study design were published previously.[8] In brief, 511 consecutive subjects were enrolled at 26 sites in Europe from August 26, 2020, to September 6, 2022. Subject eligibility for T-TEER was determined through site-specific standard-of-care procedures and protocol-specific inclusion and exclusion criteria. Subjects will be followed through 5 years, with clinical investigation at baseline, procedure, discharge, 30 days, and annually through 5 years. The bRIGHT study was approved by local ethics committees and the respective health authorities of the participating countries. All subjects provided written informed consent.

ECHOCARDIOGRAPHIC ASSESSMENT. All echocardiograms were analyzed by an independent core laboratory per American Society of Echocardiography standards.[8] TR was assessed using standard 2-dimensional (2D) color Doppler methods and graded according to the class grading scheme of none, mild, moderate, severe, massive, and torrential.[9] Among others, parameters included were biplane vena contracta width, effective regurgitant orifice area, and regurgitant volume. Single leaflet device attachment (SLDA) and tricuspid valve gradient were also assessed by the echocardiography core laboratory. Tricuspid stenosis was defined as a mean gradient ≥5 mm Hg.

CLINICAL OUTCOMES. Acute procedural success (APS) was defined as successful implantation of the device resulting in TR reduction of at least 1 grade (as assessed by the echocardiography core laboratory) at discharge. APS was met, as previously described.[8] All major adverse events (MAEs), including cardiovascular mortality, myocardial infarction, stroke, new-onset renal failure, endocarditis requiring surgery, and nonelective cardiovascular surgery for tricuspid valve repair system-related adverse events, were adjudicated by an independent events committee. Additional safety endpoints (eg, major bleeding, new-onset liver failure) and heart failure hospitalizations

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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were site-assessed. Impaired serum creatinine was defined as >1.2 mg/dL. Clinical status was assessed using NYHA functional class and Kansas City Cardiomyopathy Questionnaire (KCCQ) overall summary score.

STATISTICAL ANALYSIS. Data are presented as mean ± SD for continuous variables and are presented as counts (%) for categorical variables. Paired Student's *t*-test was used to compare the mean of paired continuous variables, and Bowker's test was used to compare paired categorical data. TR at discharge was used for all instances of when 30-day TR grade was unavailable. TR reduction and KCCQ-OS are presented as paired changes between baseline and 1 year, among subjects who had data at baseline, 30 days, and 1 year. The Kaplan-Meier method was used to estimate survival at 1 year with 95% CIs. Subjects were censored at their last known event-free date in the study. Differences between subgroups were reported using *P* values from the log-rank test. Stepwise model selection was used to identify demographic and echocardiographic predictors of mortality at 1 year. A variable was entered if clinically relevant and significant at 0.2 level in univariate models. Associations had to be significant at 0.1 level to stay in the model. ORs were presented as per SD increase for continuous predictors. All statistical analyses were performed using the SAS version 9.4 (SAS Institute).

RESULTS

BASELINE CHARACTERISTICS AND FOLLOW-UP. Baseline characteristics of enrolled subjects were previously published[8] and are summarized in **Table 1**. In brief, 511 subjects with a mean age of 79 ± 7 years were included; 56% of patients were female. A total of 80% of subjects were in NYHA functional class III or IV, average KCCQ overall summary score was 44.5 ± 22.6, and 40% of subjects had heart failure hospitalization within 1 year before the study procedure. A total of 40% of subjects had chronic renal disease, by site characterization. Baseline TR grade was massive in 61% and torrential in 27% of subjects. Patient characteristics according to center experience (centers with ≤15 procedures vs centers with >15 procedures) were similar and are illustrated in Supplemental Table 1. At 1 year, 378 subjects had completed 1-year follow-up, and 319 had evaluable TR grade. Missing data at 1 year were caused by death (n = 79), withdrawal (n = 42), visit not completed (n = 12), and TR not measurable (n = 59).

TR REDUCTION, QUALITY OF LIFE, AND FUNCTIONAL CLASS IMPROVEMENTS. Paired analysis (n = 317) showed that TR grade was moderate or less in 85% of subjects at 30 days and in 81% of subjects at 1 year. TR grade was significantly different between baseline and 1 year ($P < 0.0001$) and not significantly different between 30 days and 1 year ($P = 0.69$) (**Central Illustration**, left). TR grade at 30 days and 1 year was not different between sites that completed ≤15 procedures compared with sites that completed >15 procedures in bRIGHT (Supplemental Figure 1).

Significant improvements in functional capacity and quality of life were also observed through 1 year. Paired analysis (n = 335) of KCCQ overall summary score showed a mean improvement of 19 ± 26 points from baseline to 1 year ($P < 0.0001$) and no significant difference between 30 days and 1 year ($P = 0.20$) (**Central Illustration**, right). Most subjects had large KCCQ improvements at 1 year, with 56.2% of subjects experiencing ≥15-point improvement over baseline. Average KCCQ grade at 1 year was not different between sites that completed ≤15 procedures compared with sites that completed >15 procedures in the bRIGHT study ($P = 0.1$) (Supplemental Figure 2). The percentage of paired subjects (n = 365) categorized as

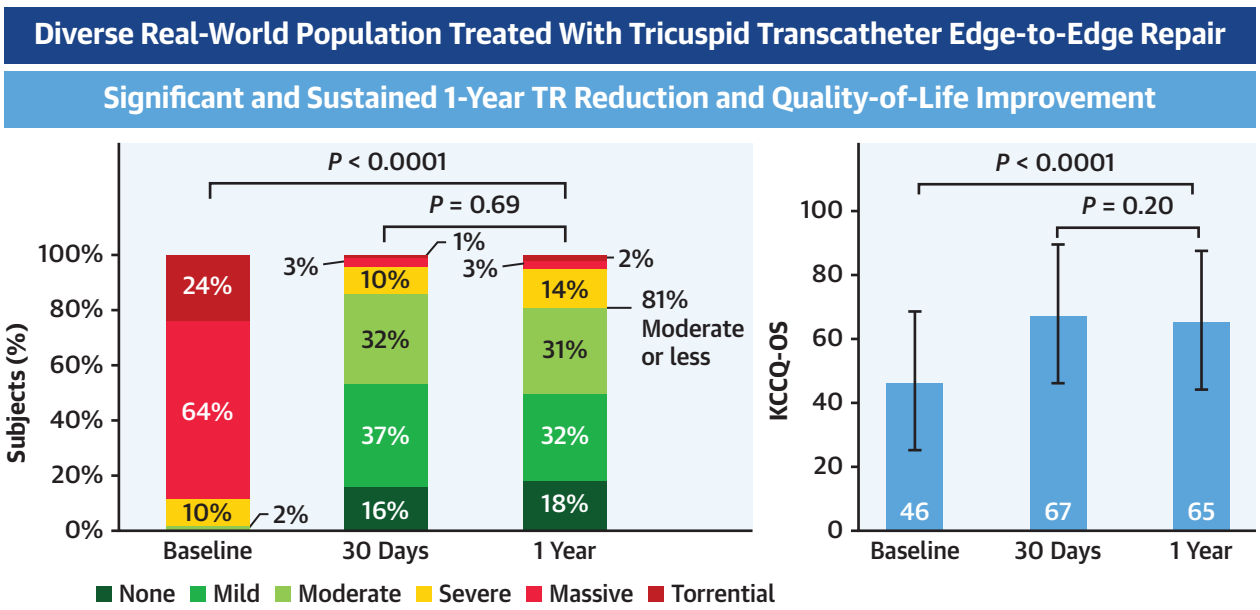
TABLE 1 Baseline Characteristics of Subjects Enrolled in bRIGHT (N = 511)

Age, y	79 ± 7
Female	56
NYHA functional class III or IV	80
KCCQ overall summary score	45 ± 23
Previous CRT/CRT-D/ICD/pacemaker	23
HFH 1 y before study procedure	40
TR etiology	
Functional/mixed	10
Secondary	90
Baseline TR severity	
Severe	10
Massive	61
Torrential	27
EuroSCORE, %	7.6 ± 8.0
Coaptation gap, mm	6.49 ± 2.7
LVEF, %	56 ± 10
RV TAPSE, cm	1.7 ± 0.4
RVEDD, cm	4.6 ± 0.9
Right atrial volume, mL	151.6 ± 70.1
Systolic pulmonary artery pressure, mm Hg	40 ± 12
Chronic renal disease	40
ALT, U/L	21 ± 12
AST, U/L	31 ± 14
Serum creatinine, mg/dL	1.3 ± 0.7

Values are mean ± SD or %.

ALT = alanine transaminase; AST = aspartate transaminase; CABG = coronary artery bypass graft; CRT = cardiac resynchronization therapy; CRT-D = cardiac resynchronization therapy defibrillation; HFH = heart failure hospitalization; ICD = implantable cardioverter-defibrillator; KCCQ = Kansas City Cardiomyopathy Questionnaire; LVEF = left ventricular ejection fraction; PCI = percutaneous coronary intervention; RVEDD = right ventricular end diastolic diameter; RV TAPSE = right ventricular tricuspid annular plane systolic excursion; TR = tricuspid regurgitation.

CENTRAL ILLUSTRATION **1-Year Tricuspid Regurgitation Reduction and Quality-of-Life Improvement With Tricuspid Transcatheter Edge-to-Edge Repair**



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(Left) Paired analysis of tricuspid regurgitation (TR) severity for 317 subjects at baseline, 30 days, and 1 year, in which a significant reduction in TR severity was observed at 30 days and sustained through 1 year. When 30-day TR severity was unavailable, discharge TR grade was used. (Right) Paired (n = 335) Kansas City Cardiomyopathy Questionnaire overall summary (KCCQ-OS) score significantly increased from baseline to 1 year, and 1-year scores were not significantly different from 30-day scores. Data represented as mean ± SD; numbers in bar represent mean.

NYHA functional class I or II increased from 21% at baseline to 75% at 1 year ($P < 0.0001$) (Supplemental Figure 3).

SAFETY PROFILE AND ASSOCIATIONS WITH MORTALITY. Procedural and early adverse events were previously described in detail.[8] At 1 year, adverse event rates remained low, with 8.8% of subjects experiencing cardiovascular mortality, 15.3% with heart failure hospitalization (and a significant reduction in rate between 1-year predevice and 1-year postdevice [Supplemental Figure 4]), 5.5% with new onset renal failure, 0.8% with new pacemaker implantation, and 3.5% with tricuspid valve reintervention (**Table 2**). Most major bleeding events and single leaflet device attachments occurred within 30 days, and there were no instances of device embolization. Event rates at 1 year did not differ between sites that completed ≤15 procedures compared with sites that completed >15 procedures in bRIGHT (Supplemental Table 2).

All-cause mortality per Kaplan-Meier analysis was 15.1% at 1 year for the full bRIGHT cohort. When assessing survival by baseline TR grade (**Figure 1**), there were no significant differences at 1 year among subjects with severe, massive, or torrential at baseline (log rank, $P = 0.66$). However, separation by 30-day residual TR grade showed significant differences in survival (log rank, $P < 0.0001$) (**Figure 1**). Survival was significantly lower at 1 year in subjects with TR severe or higher at 30 days (70.6%; $P < 0.0001$ overall) compared with subjects with moderate (91.9%; $P < 0.0001$), mild (88.2%, $P = 0.0003$), or trace TR (84.8%, $P = 0.03$). Subjects with moderate, mild, or trace TR did not have significantly different survival at 1 year ($P = 0.40$).

The results of the univariate analysis of associations with mortality are shown in **Figure 2**. At a significance level of 0.2, baseline KCCQ, baseline right ventricular tricuspid annular plane systolic excursion (RV TAPSE), baseline aspartate transaminase (AST), TR grade at 30 days, sex, baseline serum creatinine and baseline left ventricular ejection fraction (LVEF) were all significant. Site experience, baseline alanine transaminase (ALT), and baseline systolic pulmonary artery pressure were all nonsignificant. A stepwise model selection including variables that were significant at the 0.2 level was then performed to identify

TABLE 2 Safety Profile Through 1 Year (N = 511)

	30 Days	1 Year
Major bleeding[a]	7.0 (36)	10.8 (55)
Device embolization	0.0 (0)	0.0 (0)
Single leaflet device attachment	3.5 (18)	3.9 (20)
Nonelective cardiovascular surgery for device-related adverse event	0.2 (1)	0.2 (1)
TV reintervention	0.2 (1)	3.5 (18)
TV reoperation	0.4 (2)	1.2 (6)
New pacemaker implantation	0.0 (0)	0.8 (4)
New-onset renal failure	1.4 (7)	5.5 (28)
All-cause mortality[b]	1.0 (5)	15.1 (72)
Cardiovascular mortality	0.8 (4)	8.8 (45)

Values are % (n). [a]Major bleeding defined as bleeding Bleeding Academic Research Consortium (BARC) Type 3A. [b]By Kaplan-Meier.
TV = tricuspid valve.

independent associations with all-cause mortality at 1 year. The resulting multivariate logistic regression identified moderate or less TR at 30 days (OR: 0.364; 95% CI: 0.161-0.824; $P = 0.0154$), lower baseline serum creatinine (OR: 2.169; 95% CI: 1.494-3.147; $P < 0.0001$), and larger RV TAPSE at baseline (OR: 0.636; 95% CI: 0.415-0.974; $P = 0.0375$) as independent associations with lower all-cause mortality at 1 year.

In both subjects with normal and impaired serum creatinine at baseline, TR reduction to moderate or less at 30 days improved rates of survival (**Figure 3**). Subjects with impaired serum creatinine at baseline with successful reduction of TR at 30 days had an 85.1% survival estimate compared with only 64.5% for those without successful TR reduction ($P = 0.0004$). In subjects with normal serum creatinine at baseline, TR reduction to moderate or less also improved survival (93.2% vs 79.9%, $P = 0.0067$). Interestingly, subjects with normal baseline serum creatinine who did not have successful TR reduction to moderate or less were equally as likely to survive as subjects with impaired serum creatinine who did have successful TR reduction (79.9% vs 85.1%, $P = 0.401$).

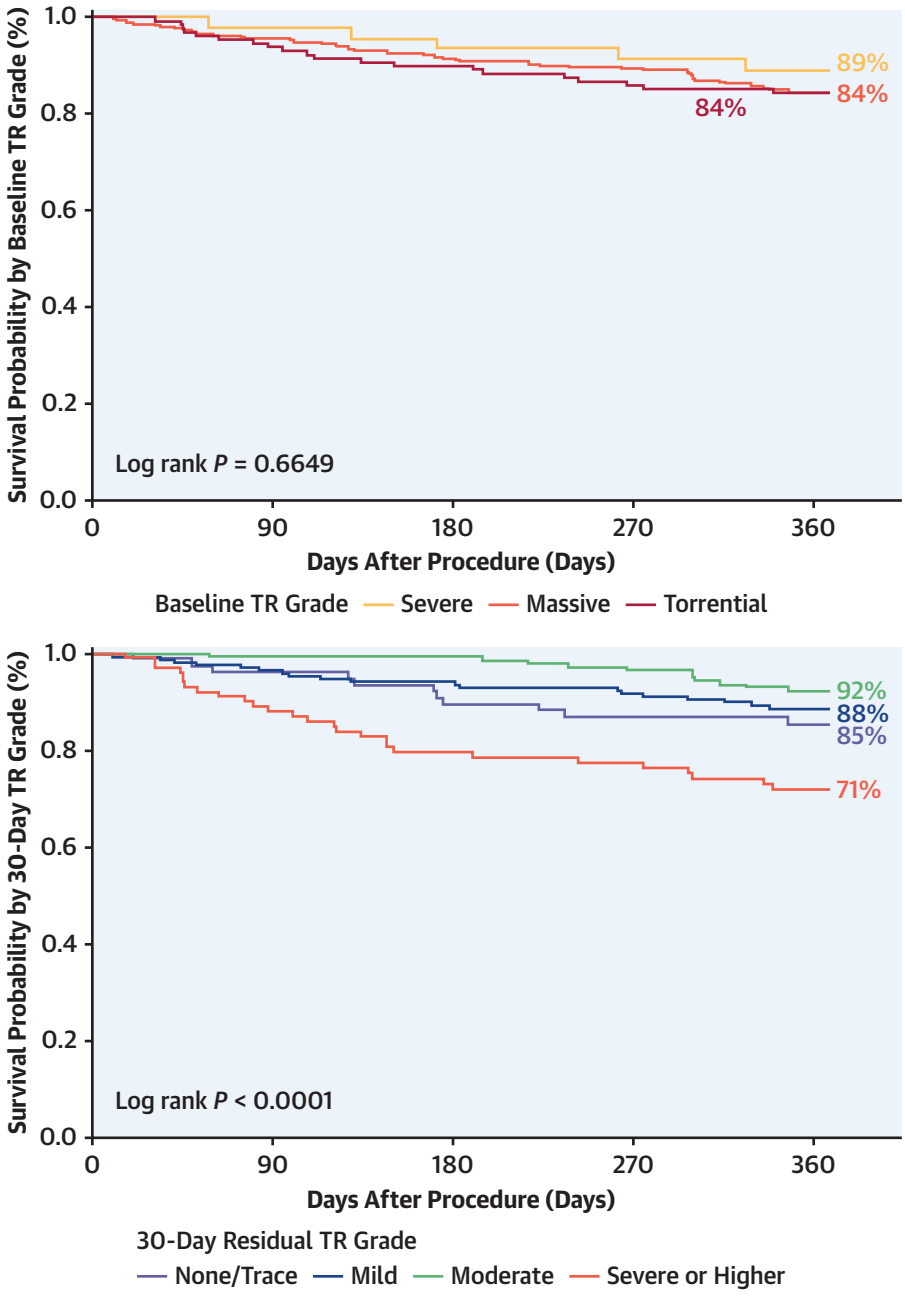
DISCUSSION

One-year results from the bRIGHT postapproval study continue to demonstrate the safety and sustained effectiveness of the TriClip system for reducing severity of TR in a real-world cohort of patients with symptomatic TR. We report significant and sustained TR reduction through 1 year, continued low rates of adverse events, and sustained clinical improvements in quality of life demonstrated through KCCQ score in a broad real-world population and across centers with variable procedure volumes. For the first time, we also show evidence that successful reduction of TR following T-TEER removes the mortality association with baseline TR severity. Instead, more than moderate residual TR was associated with mortality, supporting a beneficial impact of T-TEER on survival.

Since the early adoption of T-TEER in Europe, observational data have suggested symptomatic and functional improvement with effective reduction of TR, sparking hope for establishing an effective therapy to address the significant morbidity and mortality in patients with severe TR. Recently, findings from the TRILUMINATE Pivotal RCT revealed very high rates of effective TR reduction with T-TEER, along with significant improvements in quality of life. However, 1-year mortality was not significantly different between subjects receiving T-TEER vs medical therapy.[4] Compared with registry patients, the subjects in the TRILUMINATE Pivotal RCT demonstrated less complex TR anatomies and experienced much lower 1-year mortality, even when considering only registry patients fulfilling TRILUMINATE Pivotal RCT inclusion criteria.[9] In addition, outcomes varied in low-volume centers, raising questions about the generalizability of the TRILUMINATE Pivotal RCT findings to real-world scenarios, a crucial aspect following regulatory approval of the device in the United States. As previously demonstrated,[8] the subjects enrolled in the bRIGHT real-world study were more symptomatic patients than enrolled in several other trials,[4,10] especially with respect to the very high percentage of subjects with NYHA functional class II/IV (80%) and previous heart failure hospitalization (42%), more severe TR as evidenced by massive or torrential TR at baseline in 88% of patients, and more complex TR anatomies with large coaptation gaps and a high proportion with pacemakers upon enrollment (23%). The overall rate of moderate or less residual TR at 1 year was lower in bRIGHT (81%) compared with TRILUMIANTE Pivotal (89%), and the 1-year mortality was 5% higher. Comparison with other registry data, indeed, indicates that the baseline characteristics and mortality data in the bRIGHT study more closely resemble real-world practice.[6,9,10] Intriguingly, these findings also align with observations from the TRILUMINATE nonrandomized single-arm study.[11] Despite the more symptomatic patients and complex TR anatomies enrolled in this real-world cohort, effective TR reduction was achieved in most patients and adverse event rates—and, in particular, SLDAs—remained low at 1 year, and reduction of TR was sustained from 30 days.

The 1-year results presented support a sustained safety profile of treatment of TR with T-TEER in a

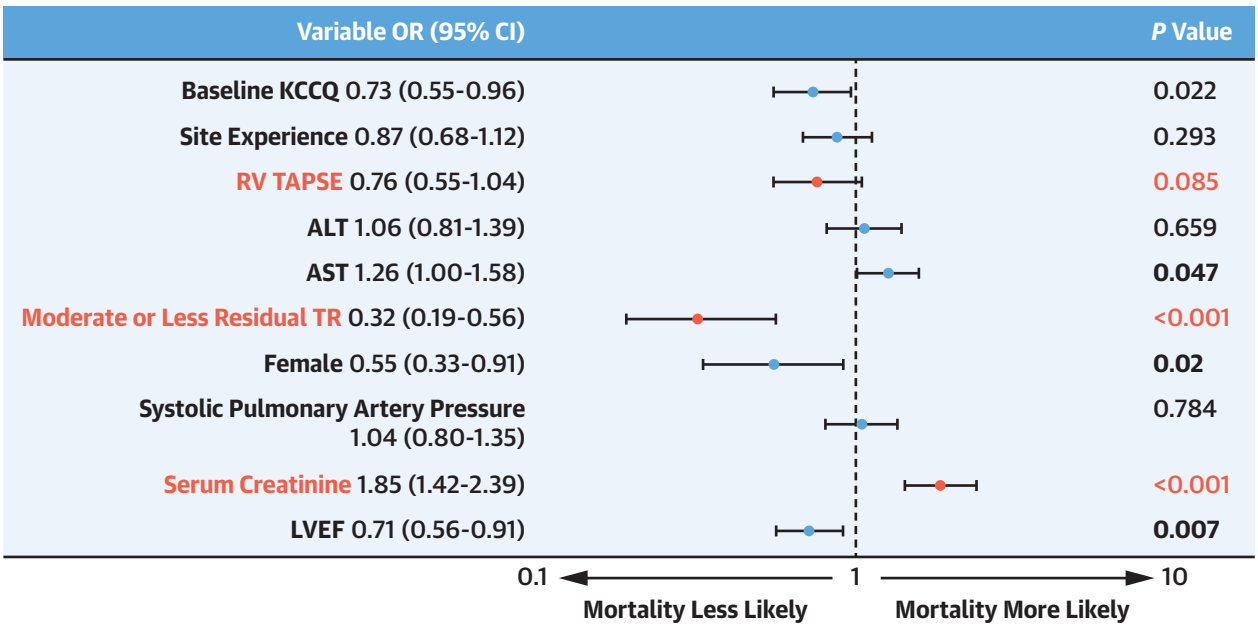
FIGURE 1 Kaplan-Meier Analysis of Freedom From All-Cause Mortality



Freedom from all-cause mortality by baseline tricuspid regurgitation (TR) was not significantly different among different baseline TR severities (top). However, freedom from all-cause mortality differed based on 30-day residual TR grade (bottom). Because few events occurred before 30 days, a landmark analysis was also conducted from day 30 to day 365, which similarly yielded a log-rank test, $P < 0.0001$. Data represent estimated rate over time.

more general setting. Adverse events—outside of all-cause mortality and heart failure hospitalization—were few after the initial 30 days and similar to the event rates seen in the selected subject cohort of the TRILUMINATE Pivotal RCT.[4] Low rates of major bleeding (10.8%), reintervention (3.5%), and new pacemaker implantation (0.8%) continued through 1 year, further supporting the innocuous nature of

FIGURE 2 Associations With Mortality From Univariate and Multivariate Analysis



Variables identified by univariate analysis for association with mortality were assessed in a multivariate model in which variables significant in the multivariate model are shown in red. Moderate or less residual tricuspid regurgitation (TR) represents vs severe or greater TR. ORs and *P* values reflect univariate analysis.

T-TEER, which is a key advantage of the therapy, especially in the new era of commercial availability of tricuspid valve replacement.

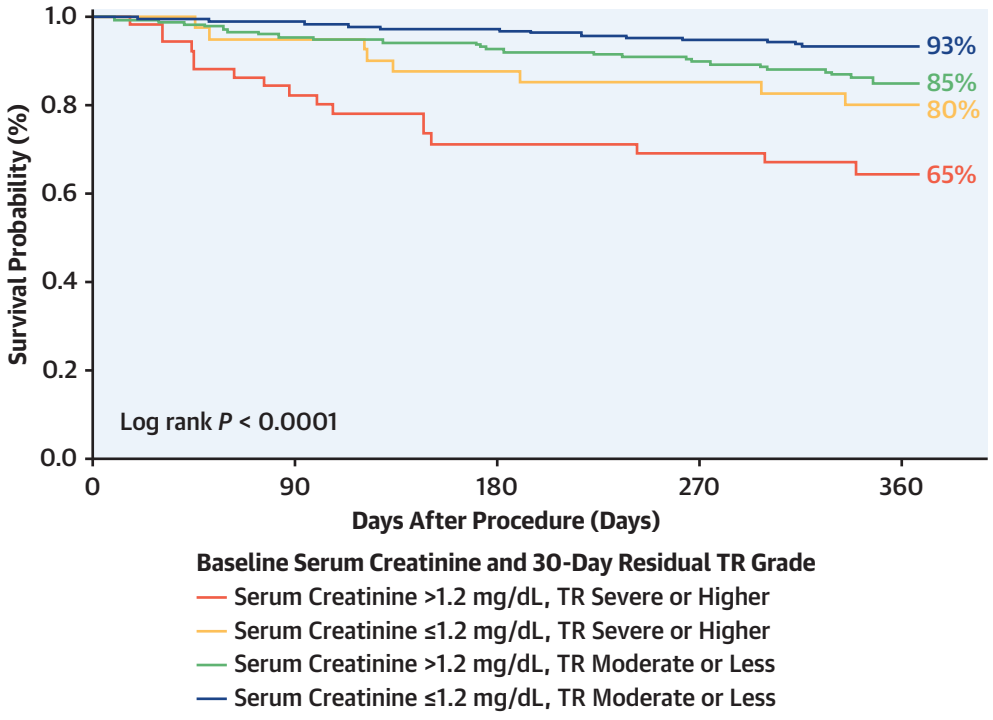
Both reductions in TR severity and improvements in quality of life were sustained from 30 days through 1 year in the bRIGHT study and again support the validity of the established clear link between TR reduction with T-TEER and KCCQ improvement in real-world practice.[4,5] The superior extent of quality-of-life improvement, both in absolute points and in the proportion of patients improving over 15 points, against the backdrop of a lower baseline quality-of-life status compared with the TRILUMINATE Pivotal RCT patients,[4] may suggest an even greater therapeutic benefit in these more advanced disease stages. It is important to emphasize that these results were achieved across a wide variety of centers, irrespective of procedure volume. This further underscores the feasibility of the T-TEER in clinical practice.

In our study, we observed that baseline TR was not predictive of mortality, which contrasts studies on the natural history of TR[12] but, importantly, also studies in patients undergoing interventional therapies for TR.[7] In addition to prospective, contemporary, and well-monitored character of our registry, we believe that this is explained by high rate of patients experiencing effective reduction of TR, which effectively offsets the baseline differences. Instead, we observed a strong association of mortality with greater than moderate residual TR, which supports a beneficial impact of T-TEER on survival.

Interestingly, no difference in survival was observed among subjects with residual moderate, mild, or trace TR. Although we aim to achieve the greatest reduction of TR possible, no additional benefit in mortality is observed when TR is reduced beyond moderate. Future studies should identify which patients benefit from further reducing or eliminating TR—for instance, through replacement therapies—and how to balance differing safety profiles of currently available transcatheter tricuspid valve interventions.

In addition to residual TR severity, elevated baseline serum creatinine and lower RV TAPSE were identified as variables associated with increased mortality. Kidney function has been identified as a factor associated with mortality in previous studies and is intricately linked to physiology in TR-related right heart failure.[6] It acts as both a driver and is affected in this context. On one hand, impaired renal function contributes to right heart failure through mechanisms such as volume retention and plays a central role in activating systems such as the renin-angiotensin-aldosterone and sympathetic systems.

FIGURE 3 Survival Probability by Serum Creatinine and 30-Day Tricuspid Regurgitation



Subjects with higher baseline serum creatinine (>1.2 mg/dL) and more severe residual tricuspid regurgitation (TR) grade at 30 days had poorer survival rates compared with subjects with lower baseline serum creatinine and moderate or less TR at 30 days. Because few events occurred before 30 days, a landmark analysis was also conducted from day 30 to day 365, which similarly yielded a log-rank test, $P < 0.0001$. Data represent estimated rate over time.

On the other hand, it is also affected by elevated central venous and diminished arterial pressures, leading to low renal perfusion pressures.[13,14] Therefore, impairments in renal function may suggest a more advanced disease stage with more prominent competing risks. However, subjects with residual TR of moderate or less at 30 days were more likely to survive despite impairment of baseline serum creatine, further supporting a causal interaction of T-TEER with mortality.

Similarly, a decline in TAPSE, indicative of longitudinal RV function, serves as a marker for disease progression in TR-related right heart failure. However, this longitudinal function diminishes early and is initially compensated for by circumferential RV function.[15] Consequently, previous studies have assigned limited prognostic value to TAPSE in the context of T-TEER.[15,16] However, the prognostic relevance of TAPSE in our study suggests that patients in bRIGHT were at a less advanced disease stage compared with those in early experience reports, yet more advanced than those in the TRILUMINATE Pivotal RCT. Intriguingly, it has been proposed that this midstage disease might offer a "sweet spot" for prognostic benefit through T-TEER.[17]

STUDY LIMITATIONS. The bRIGHT study is a single-arm, nonrandomized registry, and analyses must be interpreted within these study design limitations. Analyses were conducted in a post hoc manner, and smaller subgroup sizes are present because of limited follow-up or missing data. Details on medical therapy are not presented herein. Factors identified in the multivariate model are associations rather than predictors, given the lack of a control arm available for comparison; a randomized controlled trial would better address the specificity of these variables to T-TEER. Not all variables were assessed in the multivariate model. Additional associations will be explored in future analyses. Although the bRIGHT study represents a real-world experience, results may not be applicable to patients with anatomic or hemodynamic findings different from those enrolled in the bRIGHT study; however, the limited enrollment criteria and

negligible outcome differences based on site experience do support broader generalizability to real-world outcomes of T-TEER: specifically, in Europe, where postmarket experience exists.

CONCLUSIONS

Tricuspid transcatheter edge-to-edge repair with TriClip system was safe and effective at sustaining a reduction in TR and a quality-of-life benefit in a broad real-world bRIGHT population. The reduction of TR to moderate or less at 30 days, in addition to lower baseline serum creatinine and larger baseline RV TAPSE, was associated with improved survival.

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PERSPECTIVES

COMPETENCY IN MEDICAL KNOWLEDGE: The 1-year outcomes of real-world bRIGHT study support the continued safety and effectiveness of T-TEER and identified that moderate or less residual TR, lower baseline serum creatinine, and higher RV TAPSE at baseline were associated with greater 1-year survival.

TRANSLATIONAL OUTLOOK: Additional analyses on associations with all-cause mortality from other patient populations treated with T-TEER are needed to understand the mortality benefits of the therapy and how to best optimize outcomes.

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APPENDIX For supplemental figures, please see the online version of this paper.