Clinical Summary
Breakthrough Cohort n=150 at 6 Months

THE TRISCEND II PIVOTAL TRIAL

Study Objective

The TRISCEND II trial is a prospective, multi-center, randomized controlled pivotal clinical trial evaluating the safety and effectiveness of the EVOQUE system with optimal medical therapy (OMT) compared to OMT alone in the treatment of patients with severe or greater tricuspid regurgitation.[1]

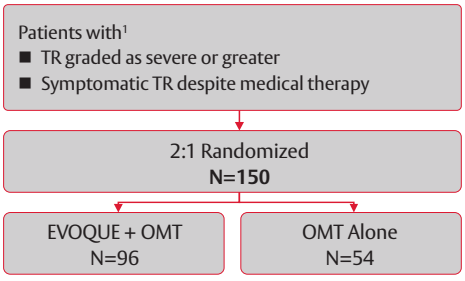
Key Points

1. The TRISCEND II trial evaluated the safety and effectiveness of the EVOQUE system with optimal medical therapy (OMT) compared to OMT alone in the treatment of patients with severe or greater tricuspid regurgitation.

2. The TRISCEND II trial results demonstrated that TTVR with the EVOQUE system is feasible with an acceptable safety profile in a highly comorbid patient population.

3. Treatment of symptomatic severe TR with the EVOQUE system resulted in meaningful improvements in functional status and symptoms at 6 months.

Methods



Primary endpoints (first 150 patients)

- Composite of major adverse events at 30 days
- TR reduction to ≤moderate at 6 months
- Hierarchical composite of KCCQ, NYHA, 6MWD improvement at 6 months
- 30 enrolling sites: US, Canada, and Germany

Baseline Characteristics[2]	EVOQUE + OMT (N=96) % or Mean ± SD	OMT Alone (N=54) % or Mean ± SD
Age, years	79.4 ± 7.7	78.2 ± 8.3
Female	82.3%	75.9%
STS score, MVR, %	10.2 ± 5.7	9.4 ± 4.5
NYHA functional class III or IV	79.2%	70.4%
Atrial fibrillation	97.9%	96.3%
Prior valve surgery/intervention	31.3%	31.5%
Pacemaker or ICD	36.5%	42.6%
TR Etiology by Core Lab[2,a]		
Primary[b]	14.6%	13.0%
Secondary[c]	77.1%	70.4%
Mixed/Indeterminate	8.3%	16.7%

[a]Echocardiographic core lab: Baylor Scott & White The Heart Hospital Plano, Plano, TX, USA.
[b]Degenerative, organic, structural or pacer-related. [c]Functional or nonstructural.

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Results

The EVOQUE system showed procedural efficiency with an average device time of approximately 1 hour.

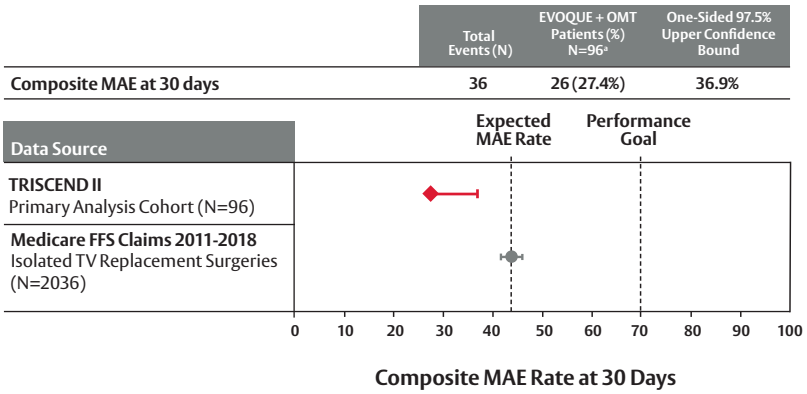
95.8%
Patients with study valve implanted

65.0 min
Device time*

*Device time is recorded from the insertion of the delivery system to removal.

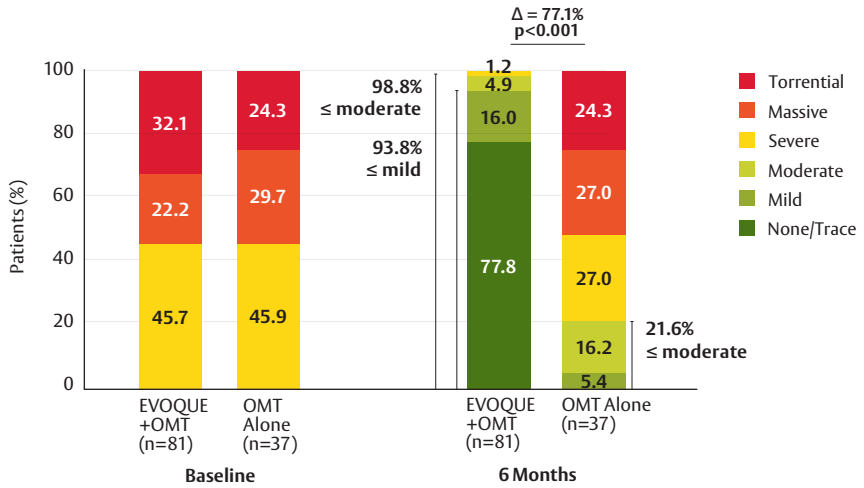
The EVOQUE system demonstrated an acceptable safety profile at 30 days.

The TRISCEND II pivotal trial met the primary safety endpoint at 30 days, with a composite major adverse event (MAE) rate of 27.4%.



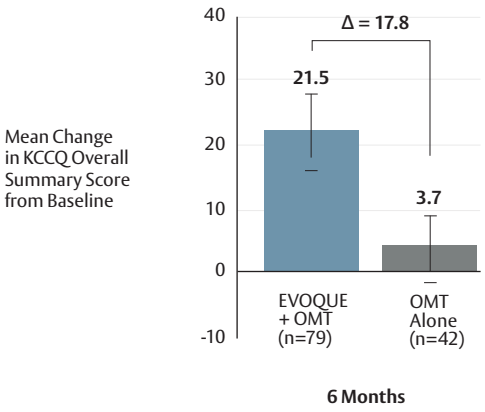
The EVOQUE system + OMT treatment group effectively eliminated TR in the vast majority of patients.

In the analysis of the first 150 patients, **the TRISCEND II pivotal trial met the first co-primary effectiveness endpoint** with TR grade reduction to ≤ moderate at 6 months.



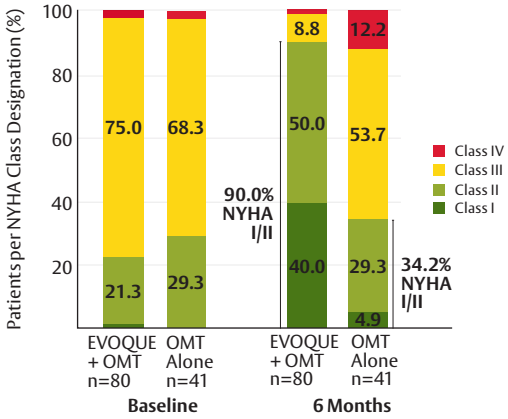
Patients treated with the EVOQUE system + OMT show meaningful improvements in quality of life (QoL) compared to patients treated with OMT alone.

KCCQ Score



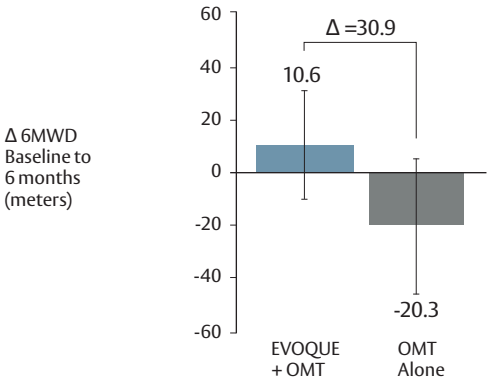
25.1 point improvement on KCCQ analysis from baseline to 6 months in the EVOQUE + OMT gruop

NYHA class



90.0% of patients achieved NYHA Class I/II at 6 months in the EVOQUE + OMT group

6MWD



30.9 meters difference in 6MWD between the EVOQUE+OMT and OMT alone

Win Ratio Analysis

The Breakthrough Cohort of 150 patients at 6 months demonstrated that EVOQUE+OMT had 4.6 times more wins than OMT alone.

Conclusions

- The TRISCEND II trial demonstrated that TTVR with the EVOQUE system is feasible with an acceptable safety profile in a highly cormorbid patient population.
  - MAE rate of 27.4% is less than expected MAE rate of 43.8%
- TTVR with the EVOQUE system effectively eliminates TR in a vast majority of patients despite the presence of massive or torrential at baseline in more than 50% of the population.
  - Mild or Less in 93.8%
  - None/Trace in 77.8%
- These data relate to the first 150 patients randomized and treated in the TRISCEND II pivotal trial, which has completed its full enrollment of 400 patients and for which follow-up is ongoing.

Important Safety Information

Edwards EVOQUE Tricuspid Valve Replacement System

Indications: The EVOQUE tricuspid valve replacement system is indicated for the improvement of health status in patients with symptomatic severe tricuspid regurgitation despite being treated optimally with medical therapy for whom tricuspid valve replacement is deemed appropriate by a Heart Team.

Contraindications: The EVOQUE valve is contraindicated for patients with any of the following conditions: active endocarditis or other active infection requiring antibiotic therapy (oral or intravenous); untreatable hypersensitivity or contraindication to any of the following: all antiplatelets, all anticoagulants, nitinol alloys (nickel and titanium), bovine tissue, glutaraldehyde, contrast media, or transesophageal echocardiography; tricuspid valve anatomy that precludes proper device deployment and functionality based on CT and echocardiographic evaluation. Note: Patient must be able to tolerate at least one antiplatelet medication AND one anticoagulant medication.

Warnings: The EVOQUE valve, delivery system, loading system, dilator kit, and stabilizer are designed, intended, and distributed for STERILE single use only. The base and plate are provided nonsterile for single use only. Do not resterilize or reuse any of the devices. There are no data to support the sterility, nonpyrogenicity, or functionality of the devices after reprocessing. Ensure proper sterile techniques are utilized during the preparation, transfer, and use of the devices. Do not use the valve if the tamper evident seal is broken, the storage solution does not completely cover the valve, the temperature indicator has been activated, the valve is damaged, or the expiration date has elapsed. The EVOQUE valve must remain hydrated at all times. The valve cannot be exposed to solutions, antibiotics, or chemicals other than its shipping storage solution and sterile physiologic saline solution. This will help prevent leaflet damage that may impact valve functionality. Keep the EVOQUE valve hydrated with normal saline until ready for implantation. Ensure the correct valve size is selected. Implantation of the improper size (i.e., undersizing or oversizing) may lead to paravalvular leak (PVL), migration, embolization, and/or annular damage.

Patients with previously-implanted devices (e.g., IVC filter) should be carefully assessed prior to insertion of the delivery system to avoid potential damage to vasculature or a previously-implanted device. Patients with pre-existing cardiac leads should be carefully assessed prior to implantation to avoid potential adverse interaction between devices. Care should be taken when implanting cardiac leads after EVOQUE valve implantation to avoid potential adverse interaction between the devices. Patients implanted with the EVOQUE valve should be maintained on anticoagulant/antiplatelet therapy as determined by their physicians in accordance with current guidelines, to minimize the risk of valve thrombosis or thromboembolic events.

There are no data to support device safety and performance if the patient has: echocardiographic evidence of severe right ventricular dysfunction; pulmonary arterial systolic pressure (PASP) > 70 mmHg by echo Doppler; a trans-tricuspid pacemaker or defibrillator lead that has been implanted in the RV within the last 3 months; or dependency on a trans-tricuspid pacemaker without alternative pacing options.

Precautions: Prior to use, the patient's eligibility depends on the anatomic conditions based on CT scan. It is advised that a multi-disciplinary heart team be of the opinion that EVOQUE valve implantation is preferable to alternative percutaneous device solutions, including minimally-invasive open heart surgery. It is advised that a multi-disciplinary heart team takes into consideration the severity of disease and the chances of reversibility of right heart failure based on a complete hemodynamic assessment.

The EVOQUE valve is to be used only with the 9850TDS delivery system and 9850LS loading system. The procedure should be conducted under appropriate imaging modalities, such as transesophageal echocardiography (TEE), fluoroscopy, and/or intracardiac echocardiography (ICE). Glutaraldehyde may cause irritation of the skin, eyes, nose, and throat. Avoid prolonged or repeated exposure to, or breathing of, the solution. Use only with adequate ventilation. If skin contact occurs, immediately flush the affected area with water; in the event of contact with eyes, seek immediate medical attention. For more information about glutaraldehyde exposure, refer to the Safety Data Sheet available from Edwards Lifesciences. Conduction disturbances may occur before, during, or following implantation of the EVOQUE valve, which may require continuous ECG monitoring before hospital discharge. If a patient has confirmed or suspected conduction disturbances, consider patient monitoring and/or electrophysiology evaluation. Appropriate antibiotic prophylaxis is recommended post-procedure in patients at risk for prosthetic valve infection and endocarditis. Long-term durability has not been established for the EVOQUE valve. Regular medical follow-up is advised to evaluate EVOQUE valve performance. Implantation of the EVOQUE valve should be postponed in patients with (1) a history of myocardial infarction within one month (30 days) of planned intervention, (2) pulmonary emboli within 3 months (90 days) of planned intervention, (3) cerebrovascular accident (stroke or TIA) within 3 months (90 days) of planned intervention, (4) active upper GI bleeding within 3 months (90 days) prior to procedure requiring transfusion.

Potential Adverse Events: Potential adverse events related to standard cardiac catheterization, use of anesthesia, the EVOQUE valve, and the implantation procedure include: death; abnormal lab values; allergic reaction to anesthesia, contrast media, anti-coagulation medication, or device materials; anaphylactic shock; anemia or decreased hemoglobin (Hgb), may require transfusion; aneurysm or pseudoaneurysm; angina or chest pain; arrhythmia – atrial (i.e., atrial fibrillation, supraventricular tachycardia); arrhythmias – ventricular (i.e., ventricular tachycardia, ventricular fibrillation); arterio-venous fistula; bleeding; cardiac arrest; cardiac (heart) failure; cardiac injury, including perforation; cardiac tamponade / pericardial effusion; cardiogenic shock; chordal entanglement or rupture that may require intervention; coagulopathy, coagulation disorder, bleeding diathesis; conduction system injury, which may require implantation of a pacemaker (temporary or permanent); conversion to open heart surgery; coronary artery occlusion; damage to or interference with function of pacemaker or implantable cardioverter defibrillator (ICD); edema; electrolyte imbalance; embolization including air, particulate, calcific material, or thrombus; emergent cardiac surgery; endocarditis; esophageal irritation; esophageal perforation or stricture; EVOQUE system component(s) embolization; failure to retrieve any EVOQUE system components; fever; gastrointestinal bleeding; hematoma; hemodynamic compromise; hemolysis / hemolytic anemia; hemorrhage requiring transfusion/surgery; hypertension; hypotension; inflammation; injury to the tricuspid apparatus including chordal damage, rupture, papillary muscle damage; local and systemic infection; mesenteric ischemia or bowel infarction; multi-system organ failure; myocardial infarction; nausea and/or vomiting; nerve injury; neurological symptoms, including dyskinesia, without diagnosis of TIA or stroke; non-emergent reoperation; pain; pannus formation; paralysis; percutaneous valve intervention; peripheral ischemia; permanent disability; pleural effusion; pneumonia; pulmonary edema; pulmonary embolism; reaction to anti-platelet or anticoagulation agents; rehospitalization; renal failure; respiratory failure, atelectasis – may require prolonged intubation; retroperitoneal bleed; right ventricular outflow tract (RVOT) obstruction; septicemia, sepsis; skin burn, injury, or tissue changes due to exposure to ionizing radiation; stroke; structural deterioration (wear, fracture, calcification, leaflet tear, leaflet thickening, stenosis of implanted device, or new leaflet motion disorder); thromboembolism; transient ischemic attack (TIA); valve dislodgement/embolization; valve endocarditis; valve explant; valve leaflet entrapment; valve malposition; valve migration; valve paravalvular leak (PVL); valve regurgitation (new or worsening tricuspid, aortic, mitral, pulmonary); valve thrombosis; vascular injury or trauma, including dissection or occlusion; vessel spasm ; wound dehiscence, delayed or incomplete healing.

CAUTION: Federal (United States) law restricts this device to sale by or on the order of a physician.
See instructions for use for full prescribing information.

References:

1. ClinicalTrials.gov [Internet]. [cited 2024 Mar 19]. Available from: https://clinicaltrials.gov/study/NCT04221490
2. Makkar R, et al. TRISCEND study 2-year outcomes: Transfemoral transcatheter tricuspid valve replacement. Presented at: PCR London Valves; 2023 November 19; London, England.

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