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## **An Innovative Technique for Operating on the Tricuspid Valve**

Universities, companies and hospitals align for heart treatment

*Milan, 11 January 2017* - An innovative artificial/natural hybrid test bench has demonstrated the feasibility and effectiveness of a brand-new beating-heart percutaneous valve repair procedure using a catheter inserted via the femoral vein. This repair procedure is designed to treat regurgitation (backflow) of the tricuspid heart valve, which connects the right atrium to the right ventricle. The tricuspid valve is rarely treated through traditional surgery due to the complexity and risk involved, so much so that it is often referred to as “the forgotten valve”.

The study was conducted by a group of researchers within the **MUSICARE (MUltiSectoral Integrative approaches to CArdiac caRE) Horizon 2020 project**, coordinated by the Politecnico di Milano, in partnership with a medical team from Milan's Sacco hospital and Abbott Vascular, a leading company in the sector, and was recently published in the prestigious **Journal of the American College of Cardiology**.

During surgery for left heart pathologies, tricuspid regurgitation, even if found, is not treated. Due to its degenerative nature, however, a second operation is often required to treat the tricuspid valve, with a high patient mortality rate ranging from 25 to 35%. In view of this, the possibility of using the trans-catheter technique for this type of procedure is extremely appealing.

Through their work, the researchers demonstrated that trans-catheter treatment, which involves applying a device to the valve to join the valve leaflets together in twos, generally succeeds in restoring correct function of the valve. In particular, the study clearly showed that treatment is most effective if applied in a specific area of the valve (the medial part between the anterior and septal valve leaflets), while it is ineffective, or even damaging, if applied in another specific position (between the anterior and posterior leaflets). This information has the potential to impact significantly on clinical treatment of the disorder.

MUSICARE brings together an international team of universities, companies and hospitals from four EU countries (Italy, the United Kingdom, the Netherlands and Belgium) coordinated by the Politecnico di Milano. MUSICARE's objective is to set up a trans-sectoral and multidisciplinary network of researchers capable of developing research and innovative technology in the cardiac field, free from barriers between

academia, companies and clinicians, and of training young researchers capable of developing enabling technologies and innovative business models. MUSICARE's ambition is to influence current cardiac surgery and interventional cardiology practices by introducing new knowledge of ventricular remodelling in relation to various treatment techniques, new technologies for designing and optimising a new generation of technical solutions, and a new doctoral study path capable of combining academic research with a business-oriented vision and the possibility of working on the field in hospitals.

**The four-year project, which commenced on 1 January 2015, has received 3,835,205.00 euros in funding from the European Union's Horizon 2020 programme.**

[www.musicare2020.eu](http://www.musicare2020.eu)