



## For Immediate Release

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## **International Society for Heart and Lung Transplantation (ISHLT) 38th Annual Meeting & Scientific Sessions Kicks Off with the INTERHEART Study, Pulmonary Hypertension and Heart Attack Recovery Using LVADs**

**NICE, FR April 11, 2018** – Researchers at the Alberta Transplant Applied Genomics Centre (ATAGC) at the University of Alberta in Edmonton, Canada presented results of [The INTERHEART Study](#) at the International Society for Heart and Lung Transplantation (ISHLT) 38th Annual Meeting & Scientific Sessions, showing that they have invented a new system for diagnosing heart transplant rejection and heart injury. The new system was shared during the conference's opening plenary session by Dr. Phil Halloran and an international team of investigators in North America, Europe, and Australia. The ATAGC team believes that biopsies should be read by their molecules, and have developed a "molecular microscope" method to read biopsies. The method uses gene chips (reminiscent of computer chips) to read the molecules in heart biopsies. In the molecular microscope system developed by the ATAGC, software converts the chip readings, taking 50,000 measurements, into diagnoses automatically. The molecular system diagnoses rejection of two types: by T cells and by antibodies.

ATAGC developed a molecular system for reading heart transplant biopsies, using microarrays (gene chips). Currently heart biopsies are read by microscopes, but there is extensive disagreement between doctors reading the biopsies, and therefore errors.

### **The Molecular Difference**

Unlike conventional microscopes, the molecular assessment can detect other serious injuries that are not rejection, but can be confused with rejection. The molecular microscope results suggest that unrecognized injury has been confused with rejection, in many cases, by conventional methods. This emerges as a major opportunity to improve care.

The team's molecular microscope readings require less tissue and the research indicates that it is more precise and accurate than conventional methods. The molecular readings correlate with heart function and can help to predict future failure.

### **What's Next?**

The hope of Dr. Halloran and his team is that clinicians will use these readings to guide therapy with the goal of better outcomes. The molecular microscope system is now being developed in lung transplant as well, with the goal of changing care for those patients as well. The lung study is also a clinical trial.

### **CTEPH and Histology**

During Friday's plenary session, [Right Ventricular Remodeling in Chronic Thrombo-Embollic Pulmonary Hypertension](#), Samantha Guimaron, MD, MSc will share results from the first clinical study collecting right ventricular tissues in chronic thrombo-embolic pulmonary hypertension (CTEPH) patients. The study was to determine the relationships between histological features of right ventricular remodeling and functional metabolic imaging of the right ventricle in CTEPH.

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## International Society for Heart & Lung Transplantation

The study compared 10 CTEP patients referred for pulmonary endarterectomy, or a blood clot removal from the pulmonary artery in the lungs, and 10 patients referred for aortic valvular surgery without coronary disease, pulmonary hypertension or right ventricular dysfunction.

### **LVADs and Improving Heart Function**

Additionally, during Friday's plenary, Emma Birks will share the final results of the first multi-center study using a specific protocol to attempt to induce/enhance myocardial recovery, or heart function, with an left ventricular assist device (LVAD). The purpose of the study, [Outcome and Primary Endpoint Results From a Prospective Multi-center Study of Myocardial Recovery Using LVADs: Remission from Stage D Heart Failure \(RESTAGE-HF\)](#), was to determine if a mix of LVAD and pharmacological therapy and regular testing could result in large incidence of LVAD removal and ultimately in sustained freedom from recurrence of heart failure.

The study enrolled 40 patients from six centers across the United States. Early results demonstrated 13 patients successfully meeting the final one year primary. Researchers feel that a combination of LVAD unloading and aggressive medical therapy and regular testing there's hope that heart function can increase resulting in a high rate of recovery sufficient enough to allow for LVAD explantation.

### **About ISHLT**

The International Society for Heart and Lung Transplantation (ISHLT) is a not-for-profit, multidisciplinary, professional organization with more than 3,800 members from over 45 countries, representing over 15 different professional disciplines involved in the management and treatment of end-stage heart and lung disease. All ISHLT members share a common dedication to improving the care of patients with advanced heart or lung disease through transplantation, mechanical support and innovative therapies via research, education and advocacy. For more information, visit [www.ishlt.org](http://www.ishlt.org).

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