

# SOUTHWESTERN NEWS

Contact: Reyes Abila  
(214) 648-3404

## UT SOUTHWESTERN RESEARCHER HELPS DEVELOP LESS-INVASIVE TEST TO DETECT REJECTION OF LUNG TRANSPLANTS

DALLAS — December 20, 1994 — Among lung transplant patients, the incidence of organ rejection is high; moreover, conventional tests to diagnose rejection are invasive and may even damage the lung.

Dr. Jonathan Weissler, associate professor of internal medicine, is part of a research team that has developed an alternative test to detect transplant rejection that is less invasive and potentially safer. Weissler, a pulmonary physician at UT Southwestern Medical Center at Dallas and director of the James M. Collins Center for Biomedical Research, uses a washing technique to collect antibodies from the lung.

Weissler and colleagues from the Indiana University School of Medicine and Methodist Hospital of Indiana conducted a 10-month study of the new procedure, which detects changes in antibody production using bronchoalveolar lavage. The results of their study were published in the December 1994 issue of *The Journal of Investigative Medicine*. Weissler's work was funded by the Collins Center.

Bronchoalveolar lavage involves spraying saline into the lung via a bronchoscope and then collecting cells and fluid that wash off the lung's surface. Although the procedure involves inserting a tube into the lung, it eliminates the need to do a biopsy, hence there is no need to cut into the lung.

"Currently, in order to diagnose transplant rejection, you have to do a bronchoscopy and then do a more invasive procedure called a transbronchial biopsy," Weissler said. "The problem with doing a biopsy is that people bleed from it, and they could get a hole in the lung. The biopsy is the part of the

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bronchoscopy that has the most complications."

The newer lavage procedure is used to compare the ratio of two different types of antibodies, IgG2 and IgG1, in fluid collected from the lung. The antibodies are part of the immune system's response to fight foreign invaders in the body.

Prior work by Weissler, holder of the James M. Collins Professorship in Biomedical Research, and his colleagues has suggested that IgG2 might be specific markers for organ rejection.

Their current study showed that if the ratio of IgG2 to IgG1 antibodies was higher, a rejection episode was the diagnosis. If the level of IgG1 antibodies was higher than IgG2 antibodies, then another disease process like an infection was probably the case, Weissler said.

"What we did was to use this new test and correlate it with the results of biopsies done simultaneously on patients suspected of having an organ rejection episode," he said. "The bronchoalveolar lavage test has a 91 percent sensitivity rating for diagnosing organ rejection."

Not only will the procedure provide a less-invasive way of making a diagnosis of transplant rejection, but it also will allow physicians to see if a patient is responding to immunosuppressive medication, Weissler said.

"In our study, when we followed patients who had rejected organs and were treated for rejection, their ratio of IgG2 to IgG1 normalized, so this procedure looks like it's a good test for following people who have acute rejection of their transplanted organ," he said.

Weissler continues to do research into lung transplant rejection. "The rejection rate is much higher in the lung than it is in the kidney or liver, for example, because there are a greater number of cells in the lung that are capable of stimulating an immune response," Weissler said.

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