

Noninvasive test that identifies patients at risk of kidney transplant rejection

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Researchers at the Bellvitge Biomedical Research Institute (IDIBELL) and doctors at University Hospital of Bellvitge, together with a team of researchers from the University of California, Cincinnati Children's Hospital, California Pacific Medical Center, University of Pittsburgh, University Emory and Stanford University (USA) and the Children's Hospital of Mexico Federico Gomez, have developed a genetic test that identifies patients at high risk of kidney transplant rejection. From a peripheral blood sample and test development easier, you can tell noninvasively and before submission of the renal graft dysfunction if the patient's immune system will reject the kidney transplant.

Dr. Oriol Bestard, nephrologist, University Hospital of Bellvitge and the only Spanish participant in this study explains that "the test will adapt in advance immunosuppressive therapy to prevent immune damage and graft failure. With this genetic test can tailor treatment immunosuppressive in an easier way without using an invasive test in those patients with [high risk](#) of rejection. "Researchers have developed from blood samples, an algorithm to classify the risk of rejection of the patients in both children and adults. "The blood test, besides being a simpler method will allow the identification of patients with rejection of timely and adequate treatment," he added.

"When the transplanted organ is rejected, usually there is an increase of creatinine (a substance that serves as renal marker) in the patient's serum. As this is not a specific marker, since creatinine can increase blood for many reasons besides the rejection must perform a [kidney](#)

[biopsy](#) to confirm that rejection is occurring, "said Dr. Josep Maria Griñó, professor of medicine at the University of Barcelona. This new test can predict up to three months before detection by biopsy acute rejection, which affects about 20% of kidney transplants.

The research "The Assay to Detect Acute Renal Transplant Patients at High Risk for Acute Rejection: Results of the Multicenter Study Aarti", published in the journal *PLOS Medicine* on Wednesday, analyzed blood samples from [kidney transplant](#) patients to measure 43 genes expression levels vary during acute renal rejection. In a first set of 143 blood samples and using a technique called Polymerase chain reaction (PCR), it was determined that 17 of these genes could discriminate those at risk of developing or acute rejection, which had been previously diagnosed by biopsy. In total, 558 [blood samples](#) from 436 [patients](#) were analyzed from eight renal transplant centers in the United States, the University Hospital of Bellvitge (Spain) and Mexico.

Although the test is highly specific and clinically applicable, the researchers said it must now test prospectively and posing a clinical intervention, to confirm your benefit. Furthermore, there are two types of immune [rejection](#), a self-induced cells and the other antibody, of which this test can not discriminate. Therefore, we continue to deepen in the study in order to be able to use the [test](#) in current clinical practice guidelines and thus classify patient risk, immunosuppressive therapy and the need for biopsy.

Provided by IDIBELL-Bellvitge Biomedical Research Institute

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