

Pain-free method of monitoring drug levels in transplant patients

April 3 2009

The U.S. Patent and Trademark Office is reviewing a University of Rhode Island pharmacy professor's proposal to use saliva as a noninvasive way to monitor concentrations of anti-rejection drugs in patients that undergo transplants.

Associate Professor of Pharmacy Fatemeh Akhlaghi said saliva offers a pain-free way to measure levels of immunosuppressive agents such as cyclosporine, and mycophenolic acid, which are essential in preventing <u>organ rejection</u> after transplantation. She is also researching the use of saliva for monitoring the concentration of two other immunosuppressive drugs, tacrolimus and sirolimus.

"Routine concentration measurement for these agents is essential for their efficacious and safe use. This is currently done through blood tests that are usually administered twice a week in a clinic or hospital," Akhlaghi said. "Our method uses saliva to measure these drug levels. Saliva tests are good for children and elderly. With the elderly, blood draws can be difficult because of the loss of muscle and connective tissue, making the veins less stable and more prone to bruising."

Frequent testing of medication levels in transplant patients is required for two reasons; if the concentration of an immunosuppressive agent is low, the patient risks rejection of the organ, and if the concentrations are high, the patient risks infections and toxicity.

"We seek commercial partners to allow us to expand the clinical studies,



optimize the sample collection procedure and investigate the possibility of developing non-mass spectrometry methods for this application," Akhlaghi said.

Mass spectrometry is an instrumental method for identifying the chemistry of a substance through the separation of gaseous ions based on their differing mass and charge. Akhlaghi's method is less complicated and less expensive.

"This method is very effective for the drugs listed in my study," Akhlaghi said. "And it's not just because the method is less invasive. We actually came up with more precise measures of the drugs' effects.

"Saliva allows non-invasive specimen collection by the patient at home," she added. "Patients can just put the sample in the mail."

Obtaining a sample would be as simple as spitting in a cup or taking a swab of the mouth, Akhlaghi said. "Because a transplant patient remains dependent on life-long therapy with a cocktail of immunosuppressive agents, a non-invasive monitoring procedure is important. It's all about improving the patient's quality of life."

Source: University of Rhode Island (<u>news</u> : <u>web</u>)

Citation: Pain-free method of monitoring drug levels in transplant patients (2009, April 3) retrieved 28 April 2024 from <u>https://medicalxpress.com/news/2009-04-pain-free-method-drug-transplant-patients.html</u>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.