

Monoclonal antibodies cut ischemia-reperfusion injury

November 22 2017



(HealthDay)—Anti-CD47 monoclonal antibody (CD47mAb) therapy

reduces ischemia-reperfusion injury of renal allografts in an animal transplantation model, according to a study published online Oct. 31 in the *American Journal of Transplantation*.

Min Xu, M.D., Ph.D., from the Washington University School of Medicine in St. Louis, and colleagues investigated whether blockade of the CD47 signaling pathway could reduce ischemia-reperfusion injury (IRI) of renal allografts donated after cardiac death (DCD) in a porcine animal model of transplantation. Renal allografts were subjected to 30 minutes of warm ischemia and 3.5 hours of cold ischemia followed by perfusion with either a humanized CD47mAb (treatment group; n = 4) or Histidine-Tryptophan-Ketoglutarate solution (control group; n = 4).

Using *in vivo* imaging, the researchers found that CD47mAb-treated organs had greater and more uniform reperfusion. The treatment group had lower creatinine and blood urea nitrogen values on post-transplant days three to five compared with the control group. There was a significant decrease of acute tubular injury upon histological examination of allograft tissues in the CD47mAb-treated group versus controls. CD47mAb treatment also significantly decreased gene expression related to oxidative stress (*sod-1*, *gpx-1*, and *txn*) and the inflammatory response (*il-2*, *il-6*, *inf-g*, and *tgf-b*) and reduced protein levels of BAX, Caspase-3, MMP2, and MMP9.

"These data demonstrate that CD47mAb blockade decreases IRI and subsequent tissue [injury](#) in DCD renal allografts in a large animal transplant model," conclude the authors.

Several authors disclosed financial ties to biopharmaceutical companies, including Tioma Therapeutics, which provided the monoclonal antibodies.

More information: [Abstract](#)

[Full Text \(subscription or payment may be required\)](#)

Copyright © 2017 [HealthDay](#). All rights reserved.

Citation: Monoclonal antibodies cut ischemia-reperfusion injury (2017, November 22) retrieved 26 April 2024 from

<https://medicalxpress.com/news/2017-11-monoclonal-antibodies-ischemia-reperfusion-injury.html>

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.