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1510 H Street NW • Suite 800 • Washington, DC 20005
p 202.640.4660 • f 202.637.9793 • www.asn-online.org

Press Release

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Contacts: **Tracy Hampton • (312) 339-9067 • thampton@nasw.org**
Christine Feheley • (202) 640-4638 • cfeheley@asn-online.org

DETAILED ANALYSIS OF DONOR-RECIPIENT TISSUE MISMATCH MAY HELP PERSONALIZE TREATMENT AFTER TRANSPLANTATION

Highlight

- A molecular analysis of the mismatch between the tissues of donors and recipients helped predict which recipients required high doses of immune modulating drugs and which needed only low doses.

Washington, DC (July 20, 2017) — Researchers have found that a detailed examination of the degree of tissue type mismatch between donors and recipients can help determine how much medication an individual recipient will need after transplantation. The findings, which appear in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN), may help guide transplant physicians in choosing the appropriate doses for individual patients.

Nearly all kidney transplant recipients require life-long treatment with medications to prevent their immune system from attacking the transplanted kidney. If the dose is too low, the immune system can cause irreversible damage to the kidney; however, if the dose is too high, the medications can cause serious side effects such as infection or cancer. Currently, doctors have no reliable tool to predict which patients would require more or less medication to control their immune system. Such a tool would allow physicians to “individualize” or “personalize” therapy and give patients the optimum doses required.

Chris Wiebe MSc, MD, FRCPC (University of Manitoba and Health Sciences Centre Winnipeg, in Canada) and his colleagues looked to see if the extent of mismatch in the tissues of the donor and the recipient, when studied at the molecular level, provides such a method.

The investigators analyzed more than 50,000 medication levels in 596 kidney transplant recipients in the context of the degree of molecular mismatch between recipients and their donors. After following patients for a median of 7 years, the researchers discovered a strong correlation between the percentage of medication levels that were low and the development of antibodies against the transplanted kidney. Importantly, low medication levels were better tolerated in patients who had a low molecular mismatch with the donor,

whereas patients who had a high molecular mismatch score were more likely to develop antibodies unless they were maintained at higher medication levels.

“Recent advances in transplantation have allowed physicians to understand the degree of tissue type mismatch between donors and recipients at a much more detailed level than ever before,” said Dr. Wiebe. “Using the results from this study, physicians now may be able to select medication doses tailored to the individual instead of treating all patients the same way.”

Study co-authors include David Rush, MD, FRCPC, Thomas Nevins, MD, Patricia Birk, MD, FRCPC, Tom Blydt-Hansen, MD, FRCPC, Ian Gibson, Sc, MBChB, MD, FRCPath, Aviva Goldberg, MA, MD, FRCPC, Julie Ho, MD, FRCPC, Martin Karpinski, MD, FRCPC, Denise Pochinco, MLT, Atul Sharma, BSc, MStat, MD, FRCPC, Leroy Storsley, MD, FRCPC, Arthur Matas MD, and Peter Nickerson, MD, FRCPC.

Disclosures: David Rush and Peter Nickerson have received funds as consultant speakers for Astellas Canada in the past; however, Astellas was not involved in this study in any way, nor have they seen the final results. The authors reported no other financial disclosures.

The article, entitled “Class II Eplet Mismatch Modulates Tacrolimus Levels Required to Prevent DSA Development,” will appear online at http://jasn.asnjournals.org/ on July 20, 2017, doi: 10.1681/ASN.2017030287.

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Facebook: Researchers have found that a detailed examination of the degree of tissue type mismatch between donors and recipients can help determine how much medication a recipient will need after transplantation. The findings, which appear in the *Journal of the American Society of Nephrology*, may help guide transplant physicians in choosing the appropriate doses for individual patients.

Media contact for JASN staff: Transplant Manitoba Communications Coordinator is Roberta Koscielny (ph. 204-787-1897) rkoscielny2@exchange.hsc.mb.ca