Transplant medication matters for controlling cancer risk

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Credit: University of Queensland

Research reveals organ transplant recipients could reduce their risk of developing secondary skin cancer by changing their immunosuppressant medication.

University of Queensland researchers have studied the impact of such medications on the immune system's ability to fight cancer.

UQ Diamantina Institute Senior Research Fellow Dr. James Wells said immunosuppressant medications were necessary to prevent organ rejection, but they caused other problems.

"An unfortunate side-effect of these medications is the greatly increased risk of developing a type of skin cancer known as squamous cell carcinoma," he said.

"There are few treatment options for these patients, some of whom endure the surgical removal of hundreds of skin tumors each year."

The study investigated the specific impacts of two medications, Tacrolimus and Rapamycin, on the immune system.

"We discovered that Rapamycin allows immune cells in the skin, or memory T cells, to maintain some of their function," Dr. Wells said.

"Memory T cells remained active in the presence of the drug and were able to penetrate the squamous cell carcinomas to fight them.

"The lighter impact that Rapamycin has on the immune system may contribute to a lower risk of skin cancer while still preventing organ rejection.

"Unfortunately, prolonged Rapamycin use is often associated with other unpleasant side-effects, so it rarely affords a long-term solution to skin cancer."

Dr. Wells' research will now focus on ways to reduce the skin cancer risk of organ transplant recipients while preventing organ rejection.

More information: Ji-Won Jung et al. Clinically-Relevant Rapamycin Treatment Regimens Enhance CD8+ Effector Memory T Cell Function In The Skin and Allow their Infiltration into Cutaneous Squamous Cell Carcinoma, *OncoImmunology* (2018). DOI: 10.1080/2162402X.2018.1479627

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