MEDIA RELEASE

Centenary Institute life saving research
Cancer. Inflammation. Cardiovascular.

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Fighting throat cancer with T cells

Research led by the Centenary Institute has discovered that immune cells accumulating within the tumour environment, called tumour-resident T cells, are a critical determinant in survival rates of patients suffering from throat cancer.

Reported in the prestigious 'Journal for ImmunoTherapy of Cancer', the research suggests that strategies aiming to boost these T-cells at tumour sites could be beneficial to patients.

"Oropharyngeal squamous cell carcinoma (OPSCC) is a form of throat cancer. It can be caused by environmental factors such as smoking or by human papillomavirus infection (HPV), the same virus that causes cervical cancer in women," said Ms Rehana Hewavisenti, lead author of the study and researcher at the Centenary Institute and the University of Sydney.

"We knew that patients with HPV-related OPSCC had far better clinical outcomes compared to other OPSCC patients but we didn't know why," she said.

In examining over sixty patient samples, Ms Hewavisenti and her colleagues discovered that increased levels of tumour-resident T cells, whether in HPV or non-HPV OPSCC cases, was clearly associated with improved patient survival outcomes.

"It was the accumulation of these immune T-cells, in and around the tumour site that appeared to be key," said Ms Hewavisenti.

The researchers also found in their study that HPV OPSCC patients generally had far higher levels of tumour-resident T cells compared to their non-HPV OPSCC patient counterparts.

"We think these HPV positive patients tended to have better clinical outcomes as HPV infection is likely to favour the accumulation of these beneficial T-cells within the tumour area," she said.

Dr Mainthan Palendira, Head of the Centenary Institute's Human Viral and Cancer Immunology Laboratory and senior author on the research paper believes the research findings have major implications.

"Now that we understand how important this immune response is in relation to OPSCC, we can begin developing new treatment strategies focused on recruiting these favourable tumour-resident T cells directly to tumours," he said.

Dr Palendira believes that looking at the amount of these T-cells in cancer could help clinicians to personalise the best treatment approach for individual patients.

"We also think that our research demonstrating viral (HPV) links with this tumour-resident T cell accumulation could help in future cancer vaccine development efforts too," he said.

[ENDS]

Publication: CD103+ tumor-resident CD8+ T cell numbers underlie improved patient survival in oropharyngeal squamous cell carcinoma. Published in the Journal for ImmunoTherapy of Cancer. https://jitc.bmj.com/content/8/1/e000452

Images:
Rehana Hewavisenti (Centenary Institute and the University of Sydney).
https://drive.google.com/open?id=1xDSoLN2AfqGysy9Qst4Pr-OGrf-X6-NN

Dr Mainthan Palendira (Centenary Institute).
https://drive.google.com/file/d/1F2yYkf2ww_ke3NCOBdKqfV9XuGhtVMCq/view?usp=sharing

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https://drive.google.com/file/d/1gvafIlqCAWv7emqqxba2vJwOSrogL7QP/view?usp=sharing

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About the Centenary Institute

The Centenary Institute is a world-leading independent medical research institute, closely affiliated to the University of Sydney and the Royal Prince Alfred Hospital. Our research focuses on three key areas: cancer, inflammation and cardiovascular disease. Our strength lays in uncovering disease mechanisms and applying this knowledge to improve diagnostics and treatments for patients.

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