Tumour DNA provides clearer genetic profiles of lymphoid malignancy

Ivy Shih - 4 hours ago

Analysing tumour DNA in addition to biopsies could give clinicians a more nuanced view of a patient's disease progression and could potentially impact treatment direction, an expert has told HAA delegates.

Speaking at the HAA 2017 scientific meeting in Sydney this week Dr. Piers Blombery, medical lead at the molecular haematology laboratory at the Peter MacCallum Cancer Centre in Melbourne, Victoria, told delegates that the detection of circulating tumour DNA (ctDNA) could create a more comprehensive characterisation of lymphoid malignancy.

Dr. Blombery said haematological cancers shed small amounts of DNA into the blood. When detected, ctDNA can give a clearer understanding of the tumour compartment not limited to the biopsied area.

"Genomic characterisation is essential to the diagnosis and prognosis of treatment of lymphoid malignancy in patients," he told delegates during the HSANZ and THANZ presidential symposium session.

Genetic mutations are currently detected by conventional cytogenetics or FISH. The tests are conducted on tumour samples, typically obtained via bone marrow or lymph node biopsies.

The team developed the Peter MacCallum PanHaem Assay, which targets more than 300 genes frequently mutated in haematological malignancies, to search for mutations in ctDNA patient samples.

Results showed that it was possible to detect more mutations using the ctDNA assay compared to profiles from tumour biopsies. In one example described by Blombery the assay detected a CD58 and p53 mutation that was not identified by a tumour biopsy.

"This is highly relevant because both are very poor prognosis lesions in diffuse large B cell lymphoma."

However Blombery told *the limbic* that despite the excitement with this assessment of ctDNA, it should not be viewed as a replacement to current detection and diagnostic methods.

"What everyone is hoping for – is not doing any biopsies anymore. The problem is that hundreds of years of diagnoses are based on what cells look like underneath the microscope…It's still a moving field."

Blombery said ctDNA could be an alternative to invasive biopsies if the malignancy is in a location the surgeon is unable to operate, such as the base of the skull, mid brain or deep lymph nodes.

He said the next stage of research would be to integrate ctDNA and tumour profiles by creating a baseline genomic profile to estimate tumour burden. This combined information could give clinicians a more nuanced view of a patient's disease progression and could potentially impact treatment direction.

"I think ctDNA profiles and profiles from tumour biopsies are going to be used in concert with standard histology and diagnoses," he concluded.

TGA tick for multiple myeloma immunotherapy

49 mins ago

The anti-CD38 immunotherapy daratumumab (Darsalex) has been approved by the TGA for use in multiple myeloma.

The therapy can be used in combination with existing therapies for patients with multiple myeloma who have received at least one therapy, or as a single agent for patients who have received three lines of therapy or who do not respond to standard therapies.

Bleeding disorders

Cure for haemophilia B on the horizon?

Tessa Hoffman - 3 hours ago

A new small study has bolstered hopes gene therapy could offer a single-injection cure for haemophilia B.

On Tuesday, clinical haematologist and pathologist Professor John Rasko presented an abstract to the HAA conference with top-line results from his recent phase I-II clinical trial of a new adeno-associated virus gene therapy in haemophilia B patients.

The results have been "nothing less than startling" for Professor Rasko and his colleagues, with all 10 patients maintaining a clotting factor of 25% to 35% one year after the single injection.

The gene therapy involves a modified parvovirus carrying an encoded clotting factor being injected into the patient, which travels to the liver where gene expression takes place.

In this case it was a bioengineered AAV coat-protein carrying a factor 9 gene.

Professor Rasko and his team have been refining the technique for over fifteen years in collaboration with US colleagues.

"When we first started the clinical trials, we published two papers in 2006 and 2007 where we had to inject into the hepatic artery," Professor Rasko, Director of Cell and Molecular Therapies at Royal Prince Alfred Hospital, tells *the limbic*.