

Device hopes to cut cancer chemotherapy

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Human trials of a cancer treatment which aims to dramatically cut the amount of chemotherapy patients need may begin within weeks at three Melbourne hospitals.

Twenty cancer patients from the Peter MacCullum Cancer Centre, Royal Melbourne Hospital and The Austin will undergo a five-week trial of chemotherapy delivery using the EnGeneIC Delivery Vehicle (EDV).



Sydney scientists Dr Jennifer MacDiarmid and Dr Himanshu Brahmhatt developed the device which uses nano cells to enter cancer cells.

The human trial involves the EDV delivering chemotherapy drugs directly to tumour cells in patients with solid tumours such as head, neck, lung, liver, colon and rectal cancer.

Previous clinical trials on animals were successful.

Dr MacDiarmid said if the human trials mirrored those results, the device could change the one size fits all approach to chemotherapy.

'Tailor-made medicine is possible,' she told AAP.

'It (chemotherapy) should be safer, the amount of drug is minute compared to normal therapy.

'It's in the order of thousands times less.'

The trial comes in the wake of a second world-first discovery by the two researchers which is published in July's international journal Nature Biotechnology.

Dr MacDiarmid said they found the device had an extra use - in addition to delivering chemotherapy, it can act as a Trojan Horse to attack rogue cancer cells rejecting drugs.

'The EDV is exceedingly versatile, so we can package chemotherapy drugs and this new gene silencing molecule,' she said.

She said the gene silencing molecule turns off a pump in the cancer cell which has proteins that make a cancer cell drug resistant.

'What we have with our Trojan Horse is we've found we can package these molecules... which can lock onto the cancer cell and then deliver this molecule that will turn off the

production of a nasty gene, for example a pump, where the drug never makes it into the cancer cell,' she said.

Dr MacDiarmid said drug-resistant cancer cells were the biggest threat to the long term survival of cancer patients.

The clinical trials of the EDV and the gene silencing molecule are hoped to start within the next few months.

The researchers received funding from the federal government's AusIndustry Start and Commercial Ready programs, the NSW government, Amwin Management, CHAMP Ventures and Momentum Capital.