

Media Release

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**Clinical
Oncological
Society of
Australia**

World first research points to bone marrow as source of cells stimulating cancer growth

Adelaide: In a world first, Australian researchers have shown in a human trial that cells responsible for stimulating cancer growth are derived from bone marrow, a conference of cancer experts was told in Adelaide today (Fri. 16/11).

In the study of patients undergoing bone marrow transplants, the researchers from the Queensland Institute of Medical Research, Flinders Medical Centre and the Institute of Medical and Veterinary Science in Adelaide observed cells, thought to be fibroblasts, being “recruited in” from the bone marrow to assist tumour growth.

Dr Daniel Worthley, from QIMR, told the Clinical Oncological Society of Australia’s Annual Scientific Meeting it was previously thought the cells resided in tissue around the cancer tumour and were corrupted by the advancing cancer.

“Instead we found the cells had migrated in from the bone marrow and were likely to be contributing to the growth and regulation of the cancer,” Dr Worthley said. “We think these cells are important in the growth and spread of the cancer, rather than simply being ‘innocent bystanders’.”

Dr Worthley’s team reviewed 4000 bone marrow transplants from the Australasian Bone Marrow Transplant Registry, selecting female bone marrow transplant patients who went on to develop secondary cancers, including skin, cervical and gastric cancers.

Only those women who received bone marrow from a male, typically their brother, were included. This way the researchers were able to track cells containing the Y-chromosome, unique to males, as the cells moved from the bone marrow into the malignant tissue associated with the cancer. It was in the gastric cancers that the migration process was observed.

“We need to do more testing, but these cells look like fibroblasts, which nourish cancer and drive growth and the spread of tumours,” Dr Worthley said. “It has been shown in mouse models, but this is the first time anyone has demonstrated it in humans.”

Dr Worthley said the finding was significant because it opened up the possibility that the mechanism might be able to be controlled or regulated. “We don’t exactly know how the mechanism that attracts the cells to the cancer works, however if we could get a handle on it we could potentially slow the growth of cancer or even stop it dead in its tracks.”

The researchers next step is to confirm that the cells are the active fibroblasts.

[Dr Worthley will present his findings at 11.30am on Friday in Meeting Room 1 at the Adelaide Convention Centre.](#)

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