BBC NEWS

HEALTH

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Blood test 'finds brain tumours'

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Tiny fatty balls ejected by cancer cells into the bloodstream have been used to detect deadly brain tumours, US researchers report.

The spheres, known as microvesicles, share the unique characteristics of the cancer cells they come from, but are much easier to get hold off.

A study, **published in Nature Medicine**, showed a test could detect tumours in mice and human patients.

The researchers say the spheres could also be used see if drugs are working.

Cells, including cancerous ones, do not exist in isolation. They package up bits of themselves in small balls of fat which then circulate around the body in order to transport goods and communicate with other cells.

Researchers are interested in the microvesicles as a way of testing for cancer and it has already been suggested they could be used to **detect prostate cancer in urine**.

Magnetic
However, they are very small and can be difficult to detect.

Researchers at Massachusetts General Hospital used magnetic nanoparticles which are designed to latch onto unique proteins in a microvesicle from a brain cancer cell. The magnetic trace of the tagged microvesicles can then be detected.

Tests in 24 patients known to have a brain tumour were more than 90% accurate. Other experiments on animals showed how tumours responded to treatment.

Prof Ralph Weissleder, from the hospital, said: "These microvesicles were found to be remarkably reliable biomarkers.

"They are very stable and abundant and appear to be extremely sensitive to treatment effects.

"In both animals and human patients, we were able to monitor how the number of cancer-related microvesicles in the bloodstream changed with treatment.

"Even before an appreciable change in tumour size could be seen with imaging, we saw fewer microvesicles. It's like they are a harbinger of treatment response."

The team believe similar techniques could be used for different cancers and other diseases.

Josephine Querido, science information manager at Cancer Research UK, said: "This small study shows the potential of using tiny cancer particles to detect whether patients are responding to treatments for a common form of brain cancer, but much more work is needed before this can be used in hospitals.

"Being able to detect and monitor cancer using blood samples is a hugely exciting prospect and many labs around the world, including our own, are racing to try to bring this to the clinic."

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