Medical Xpress

Evaluation of targeted therapy in ovarian cancer

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Research reported in the October issue of *The Journal of Nuclear Medicine* (*JNM*) shows that a molecular imaging technique may prove useful in early assessment of treatment response for cisplatin-resistant ovarian cancer.

"One of the most promising aspects of molecular imaging is its potential capacity to measure therapy effects long before changes in the tumor size and shape are detected," said Marijke De Saint-Hubert, medical scientist in the Department of Nuclear Medicine at the University Hospital Gasthuisberg, Leuven, Belgium, and one of the authors on an invited perspective article in JNM that comments on the study. It is important to identify response to therapy as early as possible so that ineffective therapies can be discontinued. Patients who are not responding to a given therapy may be suffering from unnecessary side effects and may also be offered potentially more effective treatments.

The chemotherapy drug cisplatin is often effective against ovarian cancer when first given; however, tumors can become resistant to the drug and start growing again, so the need for second-line therapies is pressing. One potential way to overcome cisplatin resistance is to target the mammalian target of rapamycin (mTOR) pathway. The aim of the study was to evaluate the ability of 18F-FLT, a PET probe for cell proliferation, to predict early response to everolimus (an mTOR inhibitor) in a mouse model of subcutaneously transplanted human cisplatin-resistant ovarian cancer.

The study showed that 18F-FLT PET was able to predict early response to mTOR inhibition in a cisplatin-resistant ovarian cancer in mice. The researchers suggest that this technique should be considered for therapeutic assessment in humans. They also point out the technique's potential to non-invasively and longitudinally monitor the efficacy of combination therapy.

"PET imaging could be used to evaluate the treatment's efficacy very early after treatment initiation—at a time when conventional criteria based on tumor size measurements are useless," said Nicolas Aide, M.D., Centre for Molecular Imaging at the Peter MacCallum Cancer Centre, East Melbourne, Australia, one of the authors of the study.

More information: jnm.snmjournals.org/

Provided by Society of Nuclear Medicine