Advances made in personalized approach to ovarian cancer treatment

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Genotyping advanced ovarian cancer specimens to identify oncogenes suitable for targeted therapy.

MedWire News: Research results show it is feasible to genotype ovarian cancer tissue and identify mutations that could be targeted with specific drugs, which could lead to a personalized approach to treatment.

Ursula Matulonis (Dana Farber Cancer Institute, Boston, Massachusetts, USA) used OncoMap—a genotyping platform—to sequence the DNA from 40 advanced (stage III or IV) ovarian cancer specimens.

In all, 85 percent of the cancers harbored previously identified candidate mutations across 26 different genes. The most common occurred in the V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog (*KRAS*) gene and the phosphoinositide-3-kinase, catalytic, alpha polypeptide (*PIK3CA*) gene.

Novel mutations were also identified in the epidermal growth factor receptor (*EGFR*), v-src sarcoma (Schmidt-Ruppin A-2) viral oncogene homolog (avian) (*SRC*), and fibroblast growth factor receptor 3 (*FGFR3*) genes.

"This study shows that it's feasible to use OncoMap to identify whether a patient's tumor has a mutation in an oncogene for which a known drug is available to target that specific gene," said Matulonis.

"In addition, someone's cancer could harbor a mutation… that is not known to be associated with ovarian cancer or has not yet been studied in ovarian cancer," she added.