One more step toward treatment of PARP inhibitor-resistant ovarian cancers

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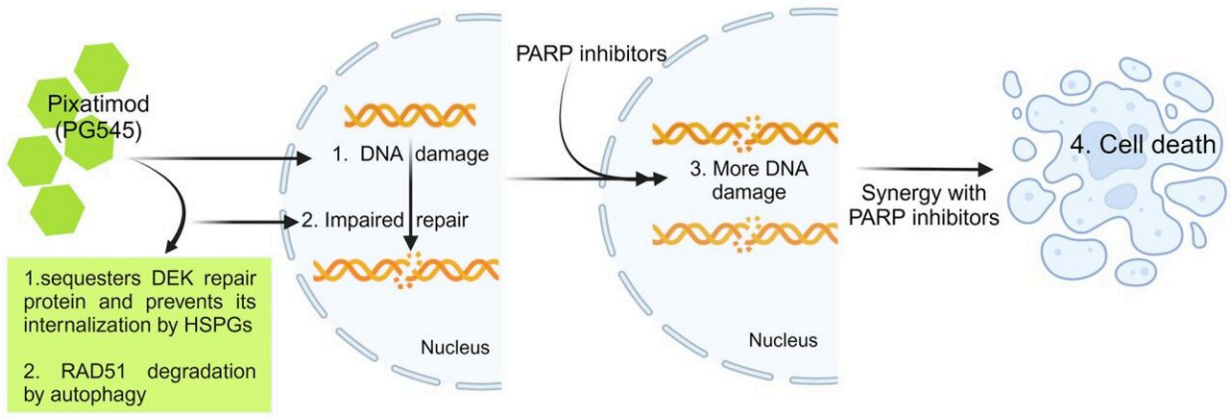

Representation of the work. Credit: *Oncotarget* (2023). DOI: 10.18632/oncotarget.28545

A new editorial paper titled "One more step toward treatment of PARP inhibitor-resistant ovarian cancers" has been published in *Oncotarget*.

Over 80% of ovarian cancer cases experience recurrence, resulting in roughly 12,000 annual deaths in the United States. While targeted therapies like poly (ADPribose) polymerase inhibitors (PARPis) have received FDA approval for both initial and recurrent treatments, extending median progression-free survival for individuals with homologous recombination repair (HRR) deficiency, the emergence of

PARPi resistance remains a common challenge among patients. Consequently, addressing resistance to PARPi treatment in ovarian cancer has become a pressing therapeutic dilemma, necessitating innovative strategies.

In this editorial, researchers Upasana Ray, Prabhu Thirusangu and Viji Shridhar from Mayo Clinic School of Medicine and Science responded to this unmet need with their current study, which unveiled promising findings related to the Pixatimod (PG545) drug, a sulfated small molecule compound. Engineered with a core structure mimicking heparan sulfate, this compound targets heparanase and heparin binding growth factor (HB-GF) signaling.

"Our present study has revealed a previously unknown effect of PG545 in ovarian cancer cells, inducing DNA damage. The investigation unveiled that PG545 induces both single- and double-strand breaks in DNA while also promoting the autophagic degradation of RAD51, a critical DNA repair protein, thereby impeding the homologous recombination repair (HRR) pathway in cancer cells," the researchers write.

More information: Upasana Ray et al, One more step toward treatment of PARP inhibitor-resistant ovarian cancers, *Oncotarget* (2023). DOI: 10.18632/oncotarget.28545