New strategy to reduce cancer drug's cardiotoxic effects

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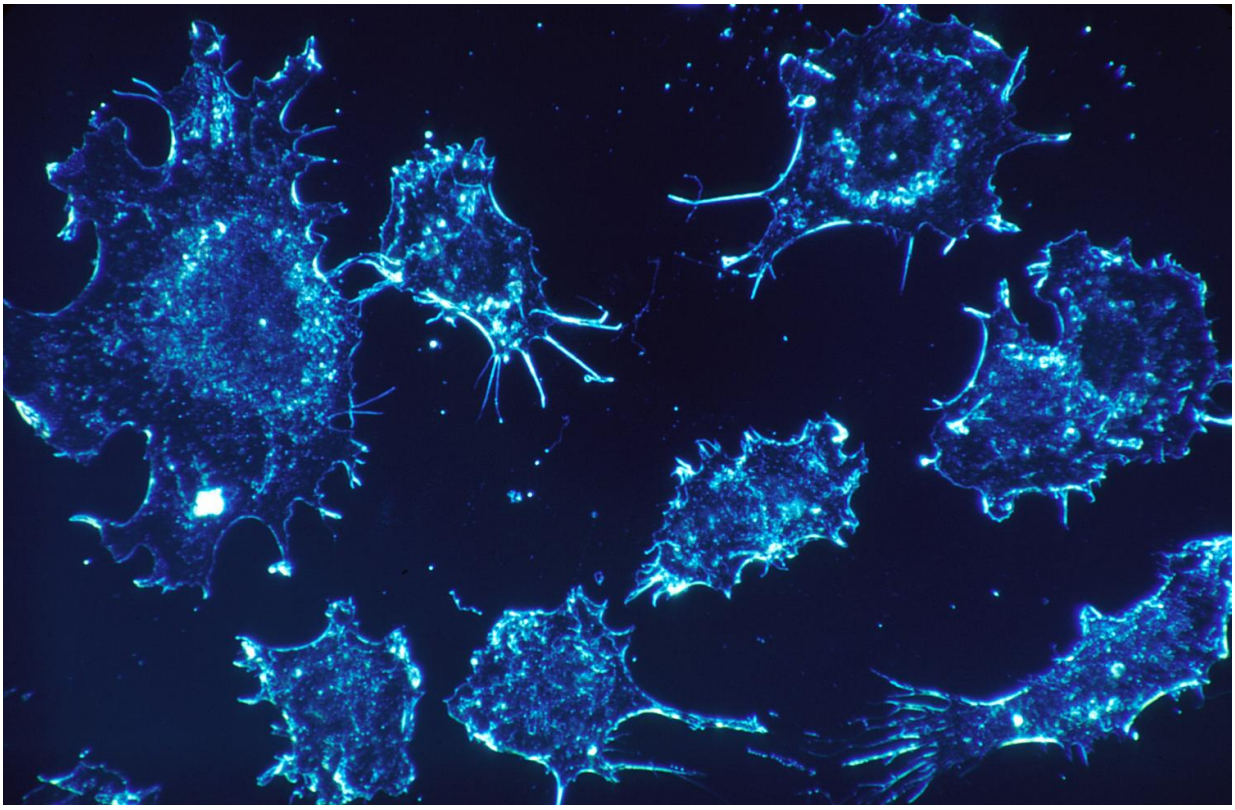

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Doxorubicin (Doxo) is a widely used chemotherapeutic drug for cancer, though it can have toxic effects on the heart. A recent animal study published in *The FASEB Journal* investigated whether the cardioregulatory protein chromogranin A (CgA) contributes to the

regulation of the cardiotoxic and antitumor activities of Doxo.

To conduct the study, a group of researchers used several in vivo and ex vivo murine models. A rat model was employed to study cardioprotection of CgA in the presence of Doxo, while a mouse model was used to monitor antitumor activities. The study proved that during treatment with Doxo, the release of CgA in the blood was reduced. In addition, when the plasma levels of CgA were restored, the heart was protected from Doxo-dependent cardiotoxicity without impairing the antitumor effect of Doxo.

Together, these findings suggest that monitoring plasma levels of CgA before and after chemotherapy in cancer patients might provide important prognostic information regarding drug-related cardiotoxicity.

"Detection of circulating CgA before, during, and after therapy with Doxo can predict cardiotoxicity," said Tommaso Angelone, Ph.D., a professor of physiology at the Lab of Cellular and Molecular Cardiac Patho-physiology within the University of Calabria's Department of Biology, Ecology and Earth Sciences in Italy. "Administration of CgA to cancer patients with low CgA plasma levels might represent a novel pharmacological strategy to limit cardiac damage typically associated with therapies such as Doxo."

"We tend to think primarily of gastrointestinal disturbance and hair loss in cancer chemotherapy, but cardiotoxicity can be far more serious in overall morbidity. This study is thus a most welcome development," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*.

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