

Researchers discover why one type of chemotherapy works best in bladder cancer

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Tisch Cancer Institute researchers have discovered that a certain type of chemotherapy improves the immune system's ability to fight off bladder cancer, particularly when combined with immunotherapy.

These findings, [published](#) in *Cell Reports Medicine*, may explain why the approach, [cisplatin](#) chemotherapy, can lead to a cure in a small subset of patients with metastatic, or advanced, [bladder cancer](#). Researchers also believe that their findings could explain why [clinical trials](#) combining another type of chemotherapy, carboplatin-based chemo, with immunotherapy have not been successful but others that use cisplatin with immunotherapy are successful.

"We have known for decades that cisplatin works better than carboplatin in bladder cancer, however, the mechanisms underlying those clinical observations have remained elusive until now," said the study's lead author Matthew Galsky, M.D., Co-Director of the Center of Excellence for Bladder Cancer at The Tisch Cancer Institute at Mount Sinai.

"This study provides clues as to why cisplatin-based chemotherapy may achieve durable disease control in a subset of patients with [metastatic bladder cancer](#), provides clues as to which patients may derive such benefit, and provides a foundation for building even better treatment regimens that exploit the immunomodulatory effects of cisplatin-based chemotherapy."

Bladder cancer affects about 83,000 people in the United States annually. Metastatic bladder cancer is particularly hard to cure with current treatments, so these findings are an important step to most effectively use the drugs available and determine effective combination therapies.

The study found that cisplatin chemotherapy may work better when the body has generated a pre-existing, but restrained, [immune response](#) against the tumor. The study further found that cisplatin damages DNA in cancer cells, which may lead to changes in expression of genes that might improve the ability of the body's immune system to detect [cancer cells](#).

This research was part of a large team science effort that used biospecimens from an international Phase III clinical trial involving multiple institutions.

More information: Immunomodulatory effects and improved outcomes with cisplatin- versus carboplatin-based chemotherapy plus atezolizumab in urothelial cancer, *Cell Reports Medicine* (2024). [DOI: 10.1016/j.xcrm.2024.101393](https://doi.org/10.1016/j.xcrm.2024.101393). [www.cell.com/cell-reports-medi ... 2666-3791\(24\)00002-8](https://www.cell.com/cell-reports-medicine/issue/S2666-3791(24)00002-8)

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