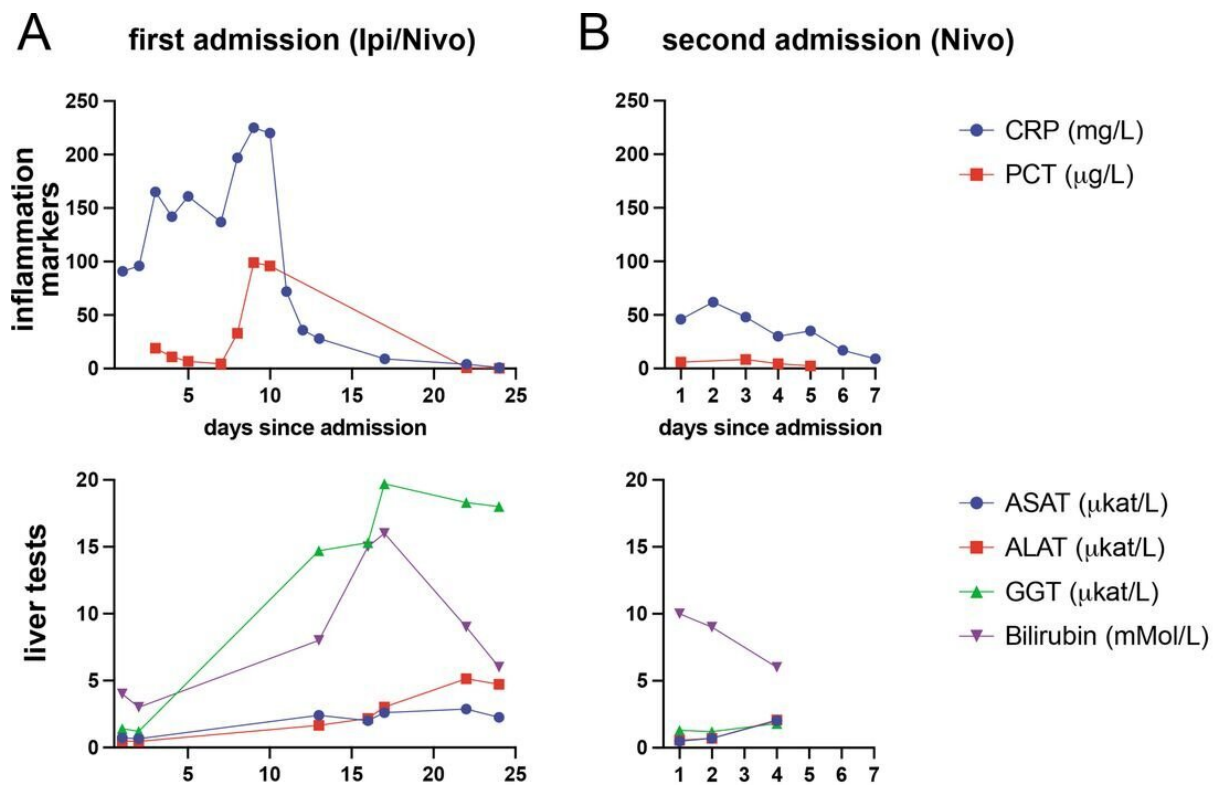


Life-threatening side effects of novel cancer immunotherapies could be treatable

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Laboratory tests after immune checkpoint inhibitor (ICI) treatment in a patient with metastatic renal cell carcinoma. (A) Routine blood tests for the indicated markers at the first admission after treatment with ipilimumab and nivolumab; legend as indicated in (C). Left y-axis in lower panel for leukocytes, right y-axis for thrombocytes and hemoglobin. (B) The same blood tests as in (A) at the occasion of the second admission after treatment with nivolumab. Day '1' is the day of treatment, which was also the day of admission in both cases. (C and D) Graphic illustration of the timing of treatment on first (C) and second (D)

admission. ALAT, alanine aminotransferase; ASAT, aspartate aminotransferase; CRP, C reactive protein; GGT, gamma-glutamyltransferase, Hb, hemoglobin; Ipi, ipilimumab, Nivo, nivolumab; PCT, procalcitonin. Credit: *Journal for Immunotherapy of Cancer* (2023). DOI: 10.1136/jitc-2022-005841. <https://jitc.bmj.com/content/11/3/e005841>

Immunotherapy has been shown to greatly improve survival rates for certain types of cancer. However, in some cases, it can lead to an over-activation of the immune system, which can be dangerous. In a recent review by researchers at Karolinska Institutet, potential therapies have been identified, which might make it possible to continue with immunotherapy even when facing severe side effects.

For certain types of cancer, [immunotherapy](#) has greatly improved [survival rates](#). However, in some patients, it can lead to a dangerous over-activation of the immune system. This rare side effect was only clinically recognized during regular clinical use rather than in [clinical trials](#) or animal experiments.

To better understand this over-activation, Lisa Liu, Marco Gerling, and colleagues analyzed data from all published international reports on this issue after cancer immunotherapy. Their findings indicate that potentially life-threatening inflammation may occur more frequently than previously thought, and might be treatable with existing drugs such as steroids or anti-inflammatory therapies commonly used for rheumatoid arthritis.

"It will be exciting to follow up on the main findings of our systematic review," says Marco Gerling at the Department of Biosciences and Nutrition, Karolinska Institutet and lead author of the review published in the *Journal for Immunotherapy of Cancer*.

"We believe that inhibition of a specific inflammatory molecule, interleukin-6, could allow patients to continue immunotherapy despite strong, systemic activation of the immune system," he continues. "But we need more data to support the regular use of interleukin-6 inhibitors. We also want to thank Narcisa Hannerz and Sabine Gillsund from Karolinska University Library for their invaluable help with finding articles for this review."

More information: Lisa L Liu et al, Systemic inflammatory syndromes as life-threatening side effects of immune checkpoint inhibitors: case report and systematic review of the literature, *Journal for Immunotherapy of Cancer* (2023). [DOI: 10.1136/jitc-2022-005841](https://doi.org/10.1136/jitc-2022-005841). jitc.bmj.com/content/11/3/e005841

Provided by Karolinska Institutet

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