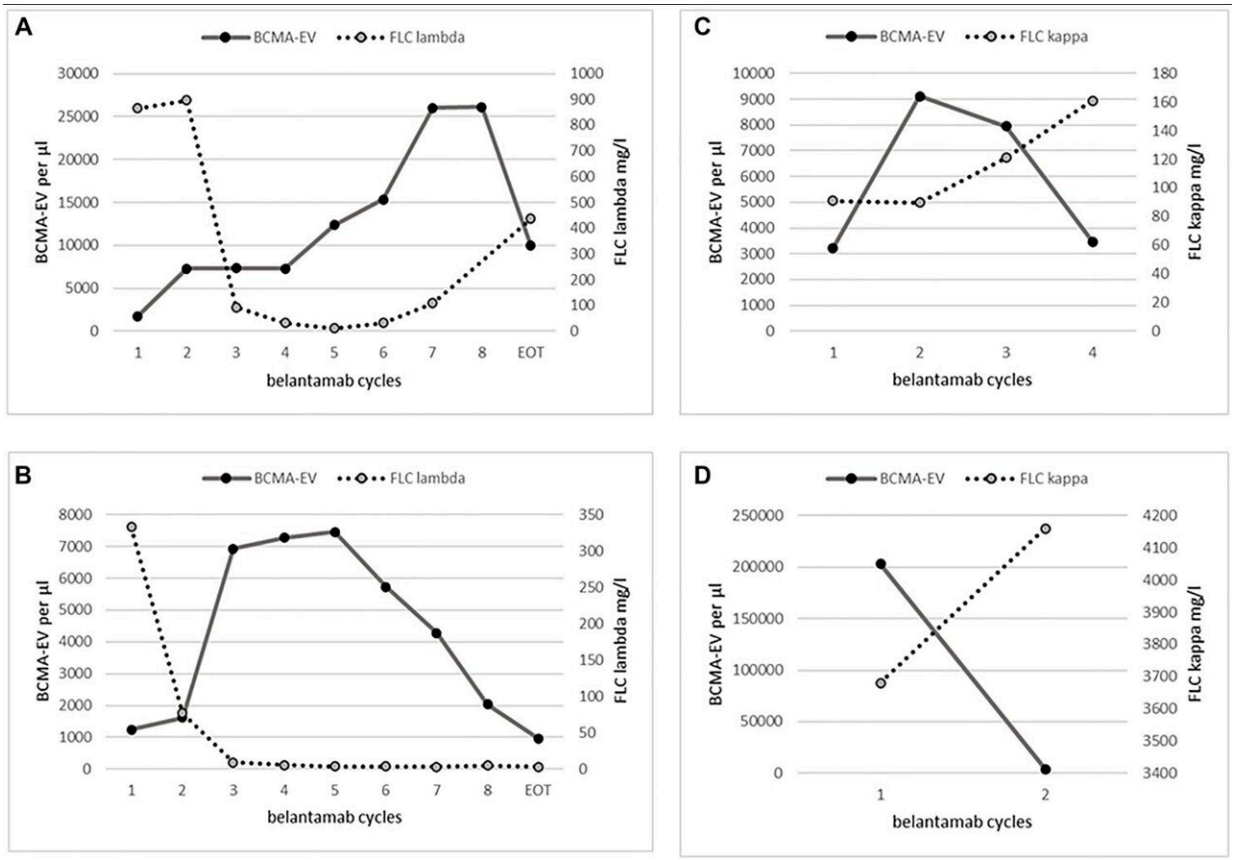
BCMA+ EV levels correlate with myeloma response to belantamab-mafodotin

December 7 2023



Patient examples of inverse correlation of BCMA and FLC changes during course of therapy. Credit: 2023 Springer et al.

A new research paper was published in *Oncotarget*, entitled, "Plasma levels of BCMA-positive extracellular vesicles correlate to response and

side effects in myeloma patients treated with belantamab-mafodotin."

In myeloma patients, high levels of soluble B-cell maturation antigen (sBCMA) can limit the efficacy of BCMA-directed therapies. Belantamab-mafodotin is a BCMA antibody-drug conjugate and shows good overall response rates in heavily pretreated patients, but progression-free survival data are poor.

In this new study, researchers Carsten Springer, Jürgen Krauter, and Arne Trummer, from Städtisches Klinikum Braunschweig and Heidekreis-Klinikum in Germany, investigated whether sBCMA in blood plasma includes extracellular vesicles (EV) carrying BCMA or other myeloma antigens and if these BCMA-EV levels show a significant change during therapy with belantamab-mafodotin.

"As the drug induces apoptosis, we hypothesized that sBCMA includes extracellular vesicles (EV) and thus evaluated numbers of BCMA-EV before and during belantamab therapy in 10 myeloma patients."

BCMA-EV were significantly higher in patients before Belantamab (median: 3227/µl; p = .013) than in other myeloma patients before therapy (n = 10; 1082/µl) or healthy volunteers (n = 10; 980/µl). During therapy, BCMA-EV showed a significant increase to a maximum of 8292/µl (p = .028).

Maximal changes in BCMA-EV (Δmax = BCMA-EV at C1/maximal BCMA-EV) showed a strong inverse, logarithmic correlation (r = −.950; p

Correlating increases of LDH and BCMA-EV levels, together with clinical symptoms, point to a mandolin-induced eryptosis. In summary, BCMA-EV are a part of sBCMA, peak levels precede progression, and their measurement might help identify resistance mechanisms and side

effects of BCMA-targeted therapies.

"To the best of our knowledge, we demonstrate for the first time that BCMA-positive extracellular vesicles can be found in blood plasma from myeloma patients and that BCMA expression on EV is 10 to 100 times higher than that of other well-known antigens of myeloma cells."

More information: Carsten Springer et al, Plasma levels of BCMA-positive extracellular vesicles correlate to response and side effects in myeloma patients treated with belantamab-mafodotin, *Oncotarget* (2023). DOI: 10.18632/oncotarget.28538

Provided by Impact Journals LLC