Elranatamab for relapsed/refractory multiple myeloma with severe renal impairment requiring hemodialysis

Clinical hemato-oncology

Michèle Hoffmann [1], Barbara Jeker[1], Uyen Huynh-Do[2], Yara Banz[3], Jeanne Godau[4], Elisabeth Weber[5], Ulrike Bacher[6] and Thomas Pabst [1]

[1] Department of Medical Oncology, Inselspital Bern, Bern University Hospital, University of Bern, Bern, Switzerland; [2]Division of Nephrology and Hypertension, Inselspital, Bern University Hospital, University of Bern, Switzerland; [3] Institute of Tissue Medicine and Pathology; University of Bern, Bern, Switzerland; [4]Department of Medical Oncology & Hematology, Spital STS Thun, Switzerland; [5]Department of Nephrology, Spital STS Thun, Switzerland; [6] Department of Hematology and Central Laboratory, Inselspital Bern, Bern University Hospital, University of Bern, Bern, Switzerland

SOHC
SWISS ONCOLOGY & HEMATOLOGY CONGRESS

INSELSPITAL
UNIVERSITÄTSSPITAL BERN
HÔPITAL UNIVERSITAIRE DE BERNE

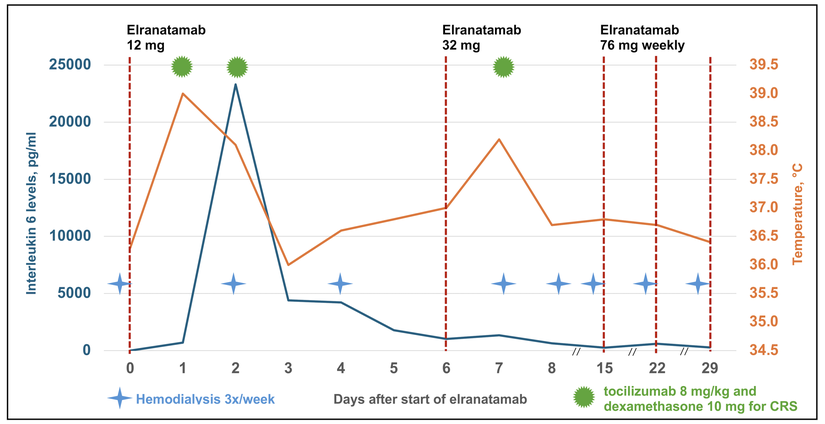
Background and Objective

Relapsed/refractory multiple myeloma (RRMM) patients with dialysis-dependent renal impairment face limited therapeutic options due to exclusion from clinical trials, a lack of evidence-based guidelines, and inferior outcomes. Bispecific antibodies targeting B-cell maturation antigen (BCMA) have shown promise in RRMM treatment but remain understudied in this vulnerable population.

Methods

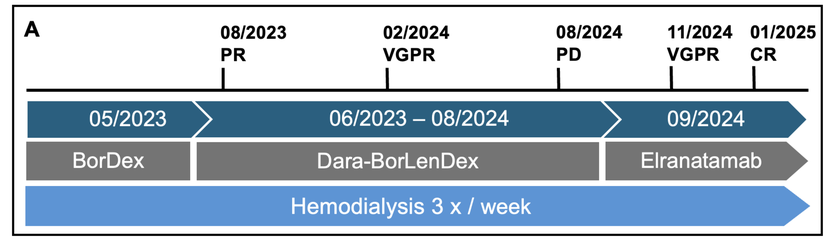
A 68-year-old female with triple-class RRMM and end-stage renal disease requiring hemodialysis, was treated with elranatamab as a second line treatment following progression after therapy with daratumumab, bortezomib, lenalidomide, and dexamethasone. Grade I cytokine release syndrome during the initial administrations was managed effectively with tocilizumab and dexamethasone, allowing treatment continuation. A secondary immunoglobulin deficiency with increased infection susceptibility was treated by supplementation with polyvalent immunoglobulins. The patient achieved a very good partial remission within seven weeks although hemodialysis dependence persisted.

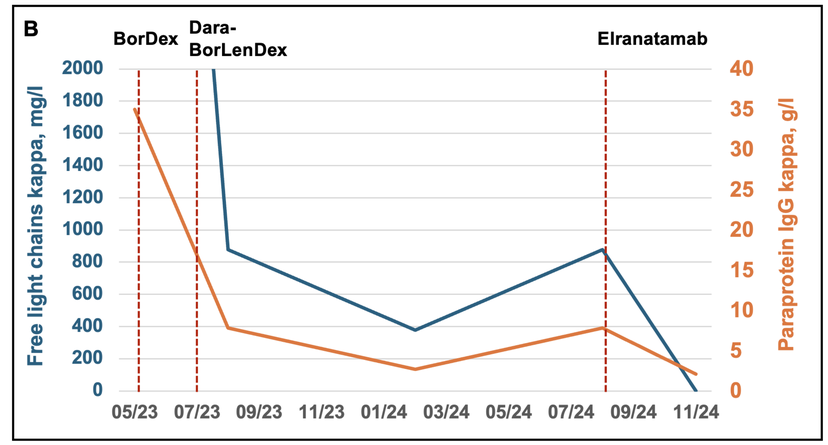
Interleukin 6 levels and the course of temperature



The red vertical lines indicate the timepoint of elranatamab therapy. The blue stars indicate the dialysis sessions that took place prior to the administration of elranatamab. The green dots represent cytokine release syndrome (CRS) along with the corresponding treatment consisting of tocilizumab at 8 mg/kg body weight and dexamethasone 10 mg intravenously.

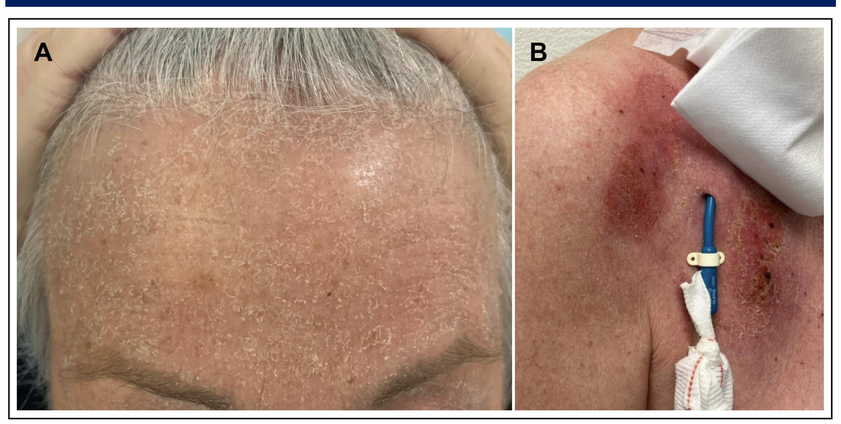
Disease course, treatments and myeloma parameters





Timeline composite figure indicating disease course and corresponding treatments **(A),** and the dynamic of myeloma parameters **(B):** serum free light chain kappa (blue) and paraprotein IgG kappa (orange) levels.

Cutaneous adverse event



Following the administration of the fourth dose of elranatamab, the patient presented with exfoliative dermatitis and irritant contact dermatitis localized around adhesive patches and the Sheldon catheter.

Results

BCMA-directed immunotherapies, including teclistamab, belantamab mafodotin, and idecabtagene vicleucel, have shown efficacy in dialysis-dependent RRMM patients, though data remain limited. Pharmacokinetic analyses indicate that mild or moderate renal impairment does not have a significant impact on the pharmacokinetics of elranatamab. Although no retrospective studies or case series have investigated the use of elranatamab in dialysis-dependent patients, a single case report suggests that its administration is both feasible and well-tolerated in this population despite the absence of comprehensive pharmacokinetic data. This review highlights feasibility, safety, and encouraging efficacy of elranatamab in managing RRMM in a dialysis-dependent patient, representing the second case report in the literature.

By providing real-world evidence for the use of bispecific antibodies in end stage renal disease patients, our data emphasize the potential for expanding therapeutic options to this vulnerable population while highlighting the need for vigilant monitoring of infection prevention and management. Prospective studies are warranted to validate these findings and optimize therapeutic strategies for patients with RRMM and severe renal impairment.

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