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Topic: Adverse drug reactions, TEN

Toxic Epidermal Necrolysis (TEN) induced by Immunotherapy in an Oncology patient. A Case Report.

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Introduction

PD-1 and PD-L1 inhibitors are cancer immunotherapies that belong to the immune checkpoint inhibitors group. They work by blocking the PD-1/PD-L1 pathway, which tumors use to turn off T-cells and escape the immune system. PD-1 inhibitors block the receptor on T-cells, while PD-L1 inhibitors block the ligand on tumor cells. Even though they have a positive safety profile compared to chemotherapy, and they don`t place the lives of patents at risk, a wide spectrum of adverse events have been documented including serious cutaneous ones, such as Stevens – Johnson Syndrome (SJS) and Toxic Epidermal Necrolysis (TEN). TEN is a rare, life-threatening skin reaction that affects people of all ages and is usually medication - induced. Signs & symptoms include widespread skin pain, spreading rash covering more than 30% of the body, blisters and large areas of peeling skin along with sores, swelling and crusting on the mucous membranes, including the mouth, eyes and genitalia. The objective of this abstract is to present an interesting TEN case induced by nivolumab treatment for squamous cell lung carcinoma (SCLC).

Materials and Methods

79-year-old male patient, diagnosed with SCLC (p40+, TTF1 -, CDX2 -, Ki27 up to 20%), was admitted in the Internal Medicine Clinic at Serres General Hospital, with a macroscopic diagnosis of TEN that was biopsy-confirmed, at the day of admission. Additionally, following ScoreTEN assessment, the result was >90%, scoring 5 risk factors:

- Age > 40
- Positive (+) History for malignancy (SCLC).
- BSA affected >10%
- Urea: 37 mg/dl> 28.
- Serum Bicarbonate levels:17 mmol/lt.

According to hospital records, patient received five chemotherapy treatment cycles, including Paclitaxel + Carboplatin + Bevacizumab, followed by two treatment cycles with PD-L1 inhibitor, Atezolizumab, for SCLC. During that time, patient experienced a cutaneous pharmaceutical reaction, that was managed with a combination of systemic & topical corticosteroids, and PD-1 inhibitor Nivolumab was introduced for four treatment cycles. Following Nivolumab`s administration, patient`s cutaneous symptoms worsened and progressed into TEN. Checkpoint inhibitor immunotherapy was discontinued. During hospitalization, patient received 500mg Methylprednisolone IV, Infliximab 5mg/kg and then 1gr/kg Immunoglobulin Gamma IV for minimization and control of TEN signs & symptoms.

Rifaximin for controlling patient`s diarrhea, along with Tazobactam-Piperacillin, Amikacin Sulfate for infection control, supportive care with Antipyretics, Oxygen, intensive intravenous Hydration, Dextrose supply and topical skin and mucousa care, were also provided.

Results

Within the first 7 days of hospitalization, TEN signs & symptoms were significantly improved macroscopically, along with a negative Nikolsky sign, indicated the ongoing skin re-epithelization, along with a decrease in the patient`s CRP serum levels.

Unfortunately, patient deceased 22 days following initial discharge, within hospital after he was admitted for severe pneumonia. Cause of death was cardiac arrest.

Conclusions

PD-1 and PD-L1 inhibitors comprise a category of drugs that has revolutionized the field of oncology. However, early diagnosis and cross-specialty collaboration for the management of associated skin toxicities, are essential for optimal patient care by improving diagnostic accuracy, coordination of treatment more effectively and overall enhancement of patient safety.