Toxic Epidermal Necrolysis (TEN) in immunocompromised patient: a wound management Case Report

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BACKGROUND

Lyell's Syndrome and Toxic Epidermal Necrolysis (TEN) are rare but severe mucocutaneous manifestations.
Chimeric Antigenic Receptor (CAR) T-cell therapy is a promising treatment for the management of different hematologic malignancies refractory to standard therapies. Most observed toxicities of the treatment are cytokine-release syndrome (CRS) and immune effector cell-associated neurotoxicity syndrome (ICANS), which often require admission in Intensive Care Unit (ICU).
The management of immunocompromised patients with multi-organ failure and Lyell's Syndrome is a challenge for intensivist and critical care nurse.

ICANS (Immune Effector Cell-Associated Neurotoxicity Syndrome)

ICE score	Consciousness	Seizures	Edema
7-9	Depressed level of consciousness but awakens spontaneously	No seizures	No raised ICP or cerebral edema
3-6	Depressed level of consciousness but awakens to voice	No seizures	No raised ICP or cerebral edema
0-2	Depressed level of consciousness but awakens to tactile stimulus	Any focal/ generalized/ nonconvulsive seizures that rapidly resolve	Focal/local edema on neuroimaging

CRS (Cytokine Release Syndrome

Grade	Hypotension	Hypoxia	Fever
1	No	No	Yes
2	Hypotension not requiring vasopressors	Hypoxia requiring low-flow nasal cannula	Yes
3	Hypotension requiring one vesopressor with or without vasopressin	Hypoxia requiring HFNC, facemask, non-rebreather/venturi mask	Yes
4	Hypotension requiring multiple vasopressors (excluding vasopressin)	Hypoxia requiring positive pressure (CPAP, BiPAP,MVYes)	Yes

CASE REPORT

A 39-year-old women with diffuse large B-cell lymphoma was admitted to ICU after reinfusion of CAR-T cell with ICANS grade 3, CRS grade 2 and Sequential Organ Failure Assessment (SOFA) 18.
Initial anterior thoraco-abdominal erythrodermia rapidly evolved into diffuse and large blisters.
Within the next 24 hours 60% of body surface showed partial thickness skin lesions.
It was setted up broad-spectrum antibiotic therapy to prevent skin infections; sedoanalgesia for pain management; specialist consultations for mucosal evaluation; esophagogastroduodenoscopy, colonoscopy; placed a rectal probe to protect the perineal area.

WOUND MANAGEMENT

A conservative approach was adopted, preserving the detached epidermis, evacuating only the most voluminous/painful bisters. Fluidised bed was placed.
Dressing renewal performed every 48h was supported by deep sedation-analgesia while maintaining spontaneous breathing and was performed with sterile technique.
Wounds were gently cleansed with lukewarm sterile water compresses or polyhexanide-propylbetaine. Paraffin tulle gras was used, held in place by a fixation dressing with sterile gauze.

Cleansing/antisepsis	Lukewarm sterile water o PHMB
Primary dressing	Tulle gras
Secondary dressing	Bandage with gauze
Change frequency	Every 48h
To avoid	✓ Adhesive dressings (also for invasive aids) ✓ Injuries from dressing change (renewed only tulle gras detached from the skin) ✓ Alcohol-based topical products ✓ Prolonged contact with body fluids/exudate ✓ Shear/stretch forces and sustained pressure on bony prominences
To do	✓ Ensure sedo-analgesia during dressing change ✓ Ensure asepsis

CONCLUSIONS

The multi-disciplinary approach allowed adequate wound management. After two weeks skin regeneration resulted in a reduction of the exposed surface area to approximately 25%. After 24 day in ICU the patient was discharged.

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