A SPINE CHILLING CASE REPORT OF ACUTE SKIN FAILURE
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ABSTRACT:
Acute skin failure is a state of total dysfunction of the skin resulting from different dermatological conditions. It is a dermatological emergency and should be treated promptly and appropriately to pull the patient out of crisis. We report a case of acute skin failure secondary to pustular psoriasis.

A 24 years old female presented with complaints of extensive raw areas with peeling of skin over entire body surface & scalp for the past 15 days. She gave history of blisters and fever 1 month ago. Mistaking the blisters for chickenpox she has applied neem and turmeric paste all over the body following which her general condition deteriorated. Dermatological examination revealed her entire skin to be covered with dried neem-turmeric paste. She was febrile, anaemic and had bilateral pitting pedal edema. She was diagnosed as a case of acute skin failure and managed in multidisciplinary intensive care unit.

INTRODUCTION:
Acute skin failure is a state of total dysfunction of the skin resulting from different dermatological conditions. In the recent years acute skin failure is being diagnosed frequently making it necessary for the dermatologists and other specialists to have a thorough knowledge on its diagnosis and management. It is a dermatological emergency and should be treated promptly and appropriately to pull the patient out of crisis. We report a case of acute skin failure secondary to pustular psoriasis.

CASE REPORT:
A 24 years old female, homemaker, hailing from a remote village near chengalpattu, mother of 8 months old child presented to our OPD with complaints of extensive raw areas with peeling of skin over entire body surface & scalp for the past 15 days. She gave history of blisters and fever 1 month ago. Mistaking the blisters for chickenpox she has applied neem and turmeric paste all over the body following which her general condition deteriorated.

On examination, she was febrile, anaemic and had bilateral pitting pedal edema. Her system examination was within normal limits she had a blood pressure of 110/70 mmHg and a pulse rate of 114/ minute. Dermatological examination revealed her entire skin to be covered with dried neem-turmeric paste (Fig. 1,2,3). Diffuse crusted erosions with foul smelling discharge was seen all over the body. Scalp showed multiple crusted erosions with matted hairs. Her Oral & Genital mucosas were normal. Her palms, soles and nails were normal.

On investigating, her hemoglobin was 9.1 gms%, ESR- 82 mm (at 1 hr). CRP – 12 mg. Liver function tests showed hypoproteinemia. Other tests including Urine analysis, renal function tests, ECG, chest X-ray were normal. Serology for Hepatitis & HIV was negative. Blood and Urine Culture &Sensitivity showed growth of Acinetobacter. Pus, Urine Culture & Sensitivity showed growth of Enterococcus & Klebsiella. Ultrasound abdomen revealed Grade 1 Fatty Liver and Grade 1 renal parenchymal disease. The erosions were so extensive and full blown that, we had to defer skin biopsy for want of normal skin.

She was diagnosed as a case of acute skin failure and shifted to intensive care unit for further management. She was placed on Alpha bed with frequent position changing. She was given supportive management with high protein diet, Saline soaks, Bactigras dressing. Her fluid and electrolyte balance were taken care of. She was treated with Inj. ceftriaxone 1g IV BD and systemic steroids. Patient was stabilised in IMCU and shifted to our ward on the 5th day of admission. She regained her normal skin and was discharged after 10 days (Fig. 4,5).

Even though patient recovered, the primary dermatosis that lead to acute skin failure was not yet identified. Patient was discharged with a note that she should report back to us at the point of time when new lesions crop up. Approximately 8 weeks after discharge patient developed multiple sterile pustules over her arms and back with adherent scaly plaque over the scalp. Biopsy of the lesion was consistent with pustular psoriasis. Lesions over the scalp were morphologically similar to pityriasis
She was started on parenteral Methotrexate 10 mg/week intramuscularly, as its the preferred route of administration of methotrexate, where mucosal edema of gastrointestinal tract could lead on to erratic toxic levels of absorption of methotrexate due to fluctuating inflammatory edema of erythroderma. After 8 weeks her lesions resolved completely and she is now in remission.

DISCUSSION:
Acute skin failure is a state of total dysfunction of the skin resulting from different dermatological conditions. It constitutes a dermatological emergency and requires a multi-disciplinary, intensive care approach [1]. Skin failure has been defined as loss of normal temperature control with inability to maintain the core body temperature, and failure to prevent percutaneous loss of fluid, electrolytes and protein, with resulting imbalance, and failure of the mechanical barrier to prevent penetration of foreign materials. Causes of acute skin failure are erythroderma, Steven Johnson syndrome, acute generalized pustular psoriasis, toxic epidermal necrolysis, pemphigus vulgaris, pemphigus foliaceus, staphylococcal scalded skin syndrome and febrile viral exanthems [2].

Consequences of acute skin failure includes altered hemodynamics causing peripheral vasodilatation leading to widespread scarlet erythema and edema (increased cutaneous blood flow), high-output cardiac failure [2]. Pulmonary complications like pulmonary capillary leak syndrome, pulmonary embolism secondary to deep vein thrombosis and Acute Respiratory Distress Syndrome may occur in erythroderma. Patient may become poikilothermic due to alteration in thermoregulation. Hypothermia is more common. Patients may develop fever even if there is no infection due to increased IL-1 produced by keratinocyte damage [3].

Metabolic abnormalities like hyperglycemic state and glycosuria may occur [4]. BMR is increased. There is high energy loss due to shivering and altered glucose metabolism [2].

There is increased trans epidermal water loss due to impairment of barrier function of the skin. If 50% of body surface area is involved the approximate water loss is 3-4 litres/day [5].

Dehydration, decreased urinary output, prerenal azotemia, hypophosphatemia, acute hypocalcemia secondary to severe hypoalbuminemia may occur.

There is loss of protein and iron leading to malnutrition. Protein loss is due to scaling, high BMR, protein losing enteropathy. Diffuse scaling leads to loss of approximately 20-30 g/m2 BSA/day protein [6].

In an acute skin failure there is continuous loss of water through the body surface, patients may develop hypovolemic. Pulse rate, urine output and urine osmolality are the important indicators of hemodynamic status [4]. Due to the release of catecholamines arterial blood pressure is maintained, hence normal blood pressure does not necessarily signify normovolemic status, even in presence of septicemia and fever a pulse rate of 120 or more / minute, indicates a negative fluid balance.

Peripheral edema can occur in long-standing cases due to increased capillary leakage [7], increased levels of vascular endothelial growth factor (VEGF) in psoriasis, eczema and other causes of erythroderma [8], hypoalbuminemia, cardiac failure.

Management involves nursing care and general measures, monitoring hemodynamic changes, fluids and electrolyte management, nutritional balance, prevention of sepsis, dressing and other measures like anticoagulant therapy, sedatives to reduce anxiety and apprehension, H2-blockers prevent stress ulcers, Ophthalmic care to prevent synechiae formation [9]. Multi disciplinary Acute Skin failure management should be prioritized, followed by early detection and appropriate management of primary dermatoses leading to skin failure.

The poor prognostic factors are old age, involvement of large body surface area, neutropenia, thrombocytopenia, high urea nitrogen level and long half life of drug in drug-induced cases[10].

CONCLUSION:
Acute skin failure constitutes a dermatological emergency that requires a multi-disciplinary, intensive care approach. Adequate knowledge about monitoring these patients and hospitalization in specialized units can reduce the high morbidity and mortality associated with this condition. Though many Indian institutes have facilities for advanced dermatological care like laser therapy, phototherapy and dermotosurgery, only few institutes are equipped with an exclusive Derm Intensive Care Unit setup for patients with acute skin failure.
