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Case report

Childhood vesiculobulous disorder (toxic epidermal necrolysis) in a resource constrained setting

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Summary. We report a case of childhood vesiculobulous disorder of the severity of Toxic Epidermal Necrolysis(TEN) in a 4 year ten month old female child resulting from caregiver prescribed medication. She is one of 4 children of a non consanguineous marriage with no family history of similar adverse drug reactions. She was initially managed in a private hospital before referral to our centre where we observed constraints of funds and crisis of confidence on the part of the parents. The need for enlightenment and counseling of care givers on cause of illness and advocacy for special funds for adverse drug events especially for indigent patients is hereby highlighted. Also the importance of optimization of available health care resources even in the midst of poor circumstances is emphasized. (www.actabiomedica.it)

Key words: vesiculobulous disorders, child, toxic epidermal necrolysis, resource constraint

Introduction

Stevens-Johnson Syndrome (SJS) was first described by A.M. Stevens and F.C. Johnson in 1922 (1).

This belongs to a spectrum of acute inflammatory skin disorders characterized by vesicles and bullae. The term "toxic epidermal necrolysis"(TEN) was coined in 1956 by A. Lyell. SJS and TEN (1, 2) have been seen as different degrees of the same type of severe cutaneous adverse reaction differing only by the extent of skin detachment (3).

SJS involves <10% of body surface area while TEN involves >30% of body surface area (4).

The incidence for TEN has been found to be 1-1.4 cases/ million inhabitants/year while the incidence for SJS has been found to be 1-3 cases/million inhabitants/year (5).

Implicated agents include drugs like sulphonamides, NSAIDS of the Oxicam type, certain antiseizure drugs (antiepileptics), allopurinol, nevirapine.

Risk is increased in HIV infection, autoimmune disorders e.g. SLE, HLA-linked, genetic susceptibility (6-8).

The role of viral coinfection is also suspected (specifically, reactivation of HHV6) (9-11).

Signs and symptoms

The skin manifestations are generally preceded by nonspecific symptoms including a persistent fever, burning or stinging eyes, malaise and discomfort or difficulty swallowing. A purulent cough producing mucous, phlegm and saliva may occur.

Skin manifestations include erythematous macules that rapidly and variably develop central necrosis to form vesicles, bullae, and areas of denudation on the face, trunk, and extremities.

The skin lesions are widespread accompanied by involvement of two or more mucosal surfaces, namely the eyes, oral cavity, upper airway or esophagus, GIT, or anogenital mucosa.

Corneal ulceration, anterior uveitis, panophthalmitis, bronchitis, pneumonitis, myocarditis, hepatitis, enterocolitis, hematuria, and acute tubular necrosis leading to renal failure may occur. Nikolsky sign is usually present but only in areas of erythema.

Long term morbidity includes alteration in skin pigmentation, eye problems (lack of tears, conjuctival scarring, loss of lashes), and strictures of mucosal surfaces.

Diagnosis is based mainly on clinical signs together with the histological analysis of skin biopsy showing full thickness epidermal necrolysis due to extensive keratinocyte apoptosis (4).

Differential diagnosis include Linear igA dermatosis, and paraneoplastic pemphigus, pemphigus vulgaris, and bullous pemphigoid, acute generalized exanthematous pustulosis (AGEP) disseminated fixed bullous drug eruption and staphylococcal scalded skin syndrome (4).

Management involves prompt diagnosis, identification and withdrawal of suspect drugs (12), in specialized intensive care units with the same types of treatment as for burns viz; warming of environment, correction of electrolyte disturbances, administration of a high caloric diet via NGT and prevention of sepsis.

Specific nursing care and adequate topical management reduces associated morbidity and allows a more rapid re-epithelialisation.

After healing follow up is needed for ophthalmologic and mucous membrane sequelae.

Avoidance of the offending drug and chemically related compounds is essential for the patient and first degree relatives.

Certain drugs have been tried including Intra venous immunoglobulin (IVIG), cyclosporin, cyclophosphamide, pentoxyfillin and thalidomide.

Corticosteroid use is debated and is probably deleterious in late forms of TEN (5), but a short course 'pulse' of high dose corticosteroid (dexamethasone) has been found to be of benefit, while some studies did not show a significant effect on mortality (13).

Plasmapheresis/plasma exchange use has shown no difference in terms of mortality (14).

Prognosis

Acute, self-limited disease with high morbidity, that is potentially life-threatening.

Age, percentage of denuded skin, neutropenia, serum urea nitrogen level and visceral involvement are prognostic factors. Vital prognosis estimation using Severity of illness scoring for Toxic epidermal necrolysis (SCORTEN) has been recently elaborated and validated (15).

Mortality for SJS is about 1-1.5% while for TEN it is 25-35% with >50% of patients surviving TEN suffering from long-term sequelae of the disease (4).

Case report

4 year 9 month old miss O.O was admitted into the children's emergency unit of Abia State University Teaching Hospital (ABSUTH), Aba Nigeria with a history of generalized body rashes which was noticed two days after ingestion of laridox (a sulpur containing anti malarial) bought over the counter.

The body rashes were preceded by blisters on the mouth and progressively involved the extremities, trunk and anogenital region. Child was initially taken to a private hospital where drugs which mother could not name were given without improvement in symptoms. With worsening of symptoms and child's inability to swallow with excessive production of oral secretions which were mixed with blood, she was directed to ABSUTH for further management.

She is the youngest child in a monogamous family with four living children. There is no family history of similar skin reaction.

She was admitted into the isolation ward, Her Vital signs were: T: 40°C P: 160/min; R: 38 cpm; She weighed 14 kg. Intravenous hydrocortisone, (60 mg 8 hourly) antibiotics (Ceftriaxone 50 mg/kg/day), and fluids (4.3 Dextrose in 1/5 Normal saline) were com-

Figure 1.

menced. Feeding was also commenced (pap fortified with milk and sugar) through a nasogastric tube, this was given at 100 kcal/kg/24hrs which came up to approximately 175 mls every 8 hours. Normal saline irrigation of both eyes and and anogenital region was carried out , the mouth was also cleaned and bonjela cream (topical analgesic gel) applied. These were however continued until patient's discharge. Vitamins A and C were given via the NGT. Monitoring of patient included that of fluid input/output, random blood sugar and vital signs. The burns and plastic unit were invited and they requested for skin lesion to be cleaned with normal saline and dressed with dermazine cream.

The ophthalmologists reviewed and recommended antibiotic eye ointments to prevent superinfection and drying. The ENT surgeons reviewed and noted that the left ear had blisters which prevented visualization of the ear drum. They co managed the child. Requested investigations, were FBC, urinalysis, SEUC, wound swab. These investigations were however, carried out after about one week into child's admission due to financial constraints. The Patient's SCORTEN score (Heart rate-160b/min, BSA detachment-15% on day 1, and high blood sugar level) was at 35.3% mortality risk. Also requested whole blood transfusion was not to be until about two days after due to financial constraints.

During child's management, mother requested discharge as she wanted to take her to an herbal home but with proper medical advice and counseling she decided to stay.

Child improved with re-epithelialisation of the skin and was discharged three weeks after. She is still being seen by the ophthalmologists for some corneal scar.

Discussion

Although Steven Johnson disease and TEN are rare, doctors who take care of patients need to be reminded that they are real entities and that affected patients can survive even in resource poor settings. The established protocols for management of such disorders are similar to that for severe burns (16). There may be some adjustments in timing due to availability of funds like in our patient but optimal and prompt use of resources as soon as available should be the watchword. We used corticosteroid in this patient as soon as we arrived at the clinical diagnosis and this agrees with some schools of thought (13) while not in line with those who think it is of no benefit (5).

Also optimization of nutrition via nasogastric route was done in keeping with views in literature (17). Input and output were strictly monitored and luckily the patient did not have any renal challenges. We would have liked to have more frequent estimation of renal function but were constrained by funds hence relied more on input/output determinations. Antibiotics were instituted early and co-management with ophthalmologists and burns and plastic unit started early. There was crisis of confidence from the mother's end as she wanted her child discharged after 4 days of admission. Part of the problem being that some relations suggested taking the child to a church for healing prayers. This is not unusual in setting like ours where patients think it will cost less to patronize quacks or churches irrespective of antecedent out comes of similar decisions.

Conclusion/Recommendations

Steven-Johnson syndrome and TEN are major threats to health and survival especially with self medication which can also cause delay in seeking intervention when adverse reactions occur.

Optimisation of available resources is encouraged to improve survival in resource poor settings. Cooperation of various specialties in the care of such children should be immediate and sustained. Special funds can be set up for cases of adverse drug reactions to prevent hopelessness and crisis of confidence among relatives of affected patients who may be wary about costs/spending in apparently helpless situations.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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