Physical trauma in epilepsy: Characteristics and implications in a Nigerian adolescent with severe generalized epilepsy

Sir,

Epilepsy has been associated with an increased risk for physical trauma. The incidence of physical trauma could have a significant impact on epilepsy care and outcomes particularly in low and middle-income countries where epilepsy prevalence is high, and care resources are limited. To highlight the characteristics and implications of physical trauma in epilepsy, a 13-year-old female who presented to a tropical Child and Adolescent Mental Health Unit with epilepsy was studied.

She had an 11-year history of recurrent unprovoked generalized seizures, repeated facial trauma from falls to the ground, and recurrent history of scald burns. There was no history of physical abuse. There had been utilization of multiple (home, orthodox medical, traditional and religious) health care options for the seizures that were seemingly intractable. Orthodox medical therapy was characterized by limited access to specialist services and anti-epileptic drugs (AEDs), irregular intake of AEDs and intractability of the seizures. Limited financial resource was a major constraint to accessing orthodox care. Her mother had antenatal care, and she was delivered off mother in a secondary health facility. Pregnancy, delivery and the neonatal period were said to be uneventful. There was a history of poor academic performance and physical growth in the patient. She was socially withdrawn, and self-care described as poor. She is the second out
Letters to Editor

Journal of Emergencies, Trauma, and Shock I 8:4 I Oct - Dec 2015

of six children in a monogamous setting. Both parents had only a primary education, and while father is a petty trader, her mother is a full time housewife. There was no family history of seizures.

She had multiple facial scars, a healing scald injury on the trunk and post-traumatic hypertrophy of both lips [Figures 1 and 2]. She was underweight (body mass index = 13.6 Kg/M$^2$) and her sexual maturity rating was preadolescent. Intelligence was below average using the Raven's progressive matrices. Electroencephalogram and clinical findings were indicative of Lennox-Gastaut syndrome. Parents were counseled on the child’s condition, treatment with Sodium Valproate was instituted, her scald wound was treated, and nutritional rehabilitation offered. The child and the family were introduced to neighborhood special needs facility and a community-based nongovernmental organization that supports children with epilepsy and their families.

Physical trauma in a patient was mainly to the head and associated with intractable seizures, epilepsy treatment gap, impaired growth and development, intellectual disability and a poor socioeconomic status. The findings are similar to those in reports on physical trauma in epilepsy.[1-3] Identified risk factors for physical trauma in epilepsy include generalized tonic clonic seizure (GTCS) type, frequency of seizures, associated use of AEDs, intractable seizures, widened epilepsy treatment gap, confounding comorbidities and poor socioeconomic status.[1,4] Furthermore, unorthodox interventions, such as inflicted burns on the feet directed at aborting seizures, could be contributory.[1,4] Most of these risk factors were identified in our patient.

The incidence of physical trauma has significant implications in epilepsy.[1] Physical trauma could provide insight into the characteristics of epilepsy. GTCS tend to be associated with more severe injuries as observed in this study.[1] In addition, a history of recurrent physical trauma could highlight a misdiagnosis, inappropriate use of AEDs or presence of a significant treatment gap. Physical trauma could also underscore the presence of other co-morbidities such as psychomotor retardation, intellectual disability and behavioral disorders that also risk factors for accidental injury.[1] In settings where epilepsy is regarded as a taboo physical trauma could be indicative of an unorthodox intervention, physical abuse or neglect.[1] Lesions from physical trauma could worsen epilepsy outcomes and even lead to mortality.[1,3] Trauma to the head could result in grave intracranial hemorrhage while tetanus and septicemia could complicate poorly treated injuries. Disfiguring scars from traumatic lesions could accentuate other psychopathological conditions associated with having epilepsy.[1] In addition to the direct consequences of physical trauma, the anticipation and risk of injuries have been associated with negative outcomes such as inactivity, isolation and dependency.[1]

Physical trauma was associated with poor health and psychosocial outcomes in our patient and highlights the need for a thorough assessment of physical trauma when it occurs in childhood epilepsy.

Edwin E. Eseigbe, Folorunsho T. Nuhu¹,
Taiwo L. Sheikh¹, Okechukwu J. Oguizu¹

Department of Paediatrics, Ahmadu Bello University Teaching Hospital, Zaria, ¹Child and Adolescent Mental Health Unit, Federal Neuro Psychiatric Hospital, Kaduna, Nigeria
E-mail: eeseigbe@yahoo.com

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Successful use of high-dose insulin therapy in atenolol overdose refractory to conventional management

Sir,

Atenolol is a selective beta-1 adrenergic antagonist and has a longer half-life than most similar agents widely prescribed for hypertension, ischemic heart disease and certain dysrhythmias. Atenolol overdose causes hypotension, Bradyarrhythmias, decreased systemic vascular resistance (SVR) and cardiogenic shock. Management of life-threatening β-blocker toxicity and its low cardiac output state is clinically challenging. We are reporting a case of atenolol overdose associated with Bradyarrhythmias in which institution of high-dose insulin (HDI) therapy led to a dramatic improvement after failure of conventional therapies.

A 25-year-old, 55 kg woman presented to the Emergency Medicine Department approximately 3 h after ingestion of 20 tablets of 50 mg Atenolol extended release (1000 mg) and 600 mg of methyldopa and 2500 mg of ciprofloxacin. Her past medical history was insignificant except for gestational hypertension and was advised antihypertensives-atenolol and methyldopa. On arrival to Emergency Department, patient's Glasgow coma scale (GCS) was 15/15-E4M6V5, heart rate (HR): 74 bpm, blood pressure (BP): 100/60 mm Hg, CRFT <3 s. Electrocardiogram (EKG) showed sinus rhythm. Over the next 5 h later patient complained of giddiness and EKG revealed a sinus bradycardia of 50 bpm [Figure 1]. In view of bradycardia associated with syncope IV atropine of 0.6 mg was repeated 4 times over 30 min. Bradycardia was refractory to therapy hence patient was started on dopamine infusion. Ultrasound assessment showed normovolemia and screening ECHO showed good left ventricular (LV) function. Target (mean arterial pressure) was achieved transiently, but the patient deteriorated by 20 h postingestion with EKG.

Approximately, 12 h postingestion patient complained of chest discomfort. On vital check found to be having BP: 80/60 mm Hg, with a HR of 52 bpm and EKG showing showing conduction disturbances-first degree heart block associated with interventricular conduction delay-duration of QRS complex >120 ms [Figures 2 and 3]. Dobutamine and norepinephrine supports were added and 100 ml of 8.4% sodium bicarbonate given over 3 h. 24 h postingestion HDI or hyperinsulinemic-euglycemic (HIE) therapy was initiated, one insulin bolus of 1 U/Kg = 50 UNITS, IV...