Incidence and impact outcome of hyperglycemia in severe scorpion envenomed children

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Introduction

 Scorpion envenomation is common in tropical and Subtropical regions.

 Scorpion envenoming leads to the release of massive Amounts of catecholamines and other counterregulatory hormones with suppressed insulin secretion and/or insulin resistance.

The aim of the present study was to determine the incidence of hyperglycemia and its impact outcome in severe scorpion envenomed children requiring intensive care admission.

Patients and methods

We retrospectively included 626 patients aged <16 Yearsadmitted for scorpion envenomation over a period of fifteen years in the 22bed intensive care unit.

The diagnosis of scorpion envenomation was based on a history of scorpion sting.

 All included patients were stratified in two groups according their biological glycaemia on ICU admission: -hyperglycaemia group (hyperglycaemia >10 mmol/L)
-hyperglycaemia free group.

Patients and methods

 The patient's medical files were reviewed and collected on : - hospital admission,

-ICU admission,

-during ICU stay.

 ▶ We stratified patients into two grades of severity: -<u>Grade II:</u> included patients with systemicmanifestation.
-<u>Grade III:</u> included patients with cardiorespiratory manifestations, mainly cardiogenic and pulmonary edema or severe neurological manifestations (coma and/or convulsions).

Results





Leukocytes levels (cells/mm³) on ICU admission

Figure 2. Correlations between leukocytes levels on ICU admission and Biological glycemia on ICU admission (P < .05, r = 0.25)

Results



Figure 3. Comparison of glycemia between hyperglycemia and normoglycemia groups on ICU admission and 24 hours later. (Medians are represented as black lines; 25th to 75th percentiles, as boxes; and ranges, as error bars.)

Results





Discussion

Hyperglycemia associated with critical illness(also Called stress hyperglycemia or stress diabetes) is a Consequence of many factors, including increased cortisol, catecholamines, glucagon, growth hormone, gluconeogenesis, and glycogenolysis.

hyperglycemia is often observed in severe scorpion envenomed children. It is essentially due to the stress accompanying scorpion envenomation leads to Scretion of catecholamines, steroids, glucagon and a resistance to insulin.

The presence of hyperglycemia represents an indicator of severity in this specific condition.