Recurrent Hypoglycaemia and Seizures in an HIV-patient.
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A young male patient recently diagnosed with HIV presented to us with a septic tibia. He developed recurrent seizures and hypoglycaemia. Terminally he developed a clinical picture of Addison’s crisis and disseminated intravascular coagulation. Addison’s crisis must always be borne in mind in patients with HIV who are subjected to stressful conditions like surgery.

Introduction

It is estimated that the number of people with HIV worldwide is 33.2 million\(^1\). HIV is a serious health issue, particularly in developing countries. There is great controversy whether HIV per se predisposes to higher incidence of post-operative infection\(^2,3,4,5\). Serious musculo-skeletal infection occurs in advanced or WHO stage 3 disease. Seizures can be the presenting symptoms in 2-20% of HIV-positive patients.\(^1\) The cause can be infective or non-infective. Hypoglycaemia can be due to drugs, metabolic or hormonal disturbances. We report on a HIV - positive patient who developed recurrent hypoglycaemia, seizures and Addison’s crisis during treatment for a septic united tibia.

Case Report

A 43 year-old male presented to the orthopaedic trauma unit with a clinical problem of septic united tibia. He had intramedullary nail three years ago. He was recently diagnosed with HIV. The CD4 count was 78x10\(^6\)/litre and he was not on anti-retroviral treatment. Clinically he looked well. He was apyrexial. The only clinically relevant findings were cervical lymphadenopathy.

The nail was removed and reaming sent for microscopy, culture and sensitivity. Culture results isolated Proteus Mirabilis and Streptococcus pyogenes sensitive to cloxacillin, ampicillin and bactrim (trimethoprim plus sulphamethoxazole). Intravenous treatment was started with the first two drugs and continued for 35 days. Oral therapy with bactrim (160mg trimethoprim + 800mg sulphamethoxazole) two tablets twice daily for four days was commenced.

A day after stopping oral therapy with bactrim, he developed hypoglycaemia with a blood glucose of 1.6 mmol/l (normal = 4.1 - 59 mmol/l) and coma. He was resuscitated with 50% dextrose intravenously and the infusion continued with 10% dextrose - normal saline. Eight hours later he developed generalized tonic clonic seizures. Blood glucose level was 2.4 mmol/l. Resuscitation was done using the same regime as before. The following morning, approximately five hours later, he had a second generalized tonic clonic seizures which lasted a minute. The glucose level was normal. His clinical condition stabilized. The last episode of hypoglycaemia (blood glucose = 1.1 mmol/l) with no convulsions occurred four hours later, was accompanied by low blood pressure (90/60 mmHg) and hypoventilation. The third seizure occurred six hours later.

Table 1. Laboratory Data
Three hours after the hypoglycaemia and shock he developed generalized seizures and severe hypoglycaemia (blood glucose = 0.6 mmol/l). The final hypoglycaemic episode (blood glucose = 0.9 mmol/l) occurred an hour later. Resuscitation was unsuccessful. The blood results show a picture of Addisonian crisis plus disseminated intravascular coagulation. Laboratory data and normal ranges are shown in Table 1.

### Discussion

Recurrent hypoglycaemia in this patient could be due to either cotrimoxazole therapy or Addisonian crisis. Seizures could be due to metabolic (hypoglycaemia) or infective causes. Cerebral infection was unlikely because the patient recovered well between episodes of seizures. He had no evidence of neurological deficit. Addisonian crisis showed a full-blown picture in the terminal stage: hypotension, hyperkalaemia, hyponatraemia and hypoglycaemia.

Cotrimoxazole is known to cause hypoglycaemia. Hypoglycaemia may be prolonged: lasting for more than 12 hours. The drug can induce demand-related or over-use hypoglycaemia. Patients at risk are those with renal failure.

Subclinical adrenal dysfunction is common in HIV-positive patients. Patients have marginal adrenal reserves. Clinically significant adrenal insufficiency is not common. Adrenal failure is the most serious complication in these patients. It is not clear from the literature whether adrenal insufficiency should always be excluded in patients with HIV, especially if they are
subjected to stress; like surgery. Mohsin Saley Eledrisi et al. state that identification of adrenal insufficiency in HIV-positive patients is imperative.

References

5. O’Brien ED, Denton JR. Open tibial fracture infections in asymptomatic HIV antibody positive patients. Orthop Review 1994; 662-664