

# Decorticate posturing in newly diagnosed case of diabetic ketoacidosis

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## Background

Diabetic ketoacidosis(DKA) is a common medical emergency in children. Altered consciousness in the form of mild disorientation or confusion can occur but frank coma is uncommon<sup>1</sup>. We present a case of a newly diagnosed type 1 diabetes mellitus who presented in DKA and with Glasgow Coma Scale(GCS)of 7. She developed decorticate posturing soon after she was commenced on resuscitation fluids.

## Case

A previously well 15 year old girl was rushed to hospital after she was found unconscious in toilet. She had diarrhoea and vomiting overnight following a take-away meal the previous day. On arrival her GCS was 7, blood glucose 25.4 mmol/L, ketones 5.4 and arterial gas showed a pH of <6.8, Pco<sub>2</sub> 1.5kPa and incalculable base excess. Serum electrolytes results: sodium of 143mmol/L, potassium 3.0mmol/L, chloride 120mmol/L and bicarbonate 5mmol/L

She was commenced on fluid management as per BSPED DKA protocol but during administration of resuscitation fluids she developed decorticate posturing and her GCS of 4.

She was commenced on 3% hypertonic saline for suspected cerebral oedema. CT scan brain was reported as normal. She was ventilated and transferred to PICU. She made complete neurological recovery.

## Discussion

Although DKA is a common medical emergency in children, the cause of the depressed conscious level which occurs in some children is not known. Possible causes include reduced cerebral blood flow, reduced glucose utilization, hyperosmolality and hyperglycemia, acidosis, direct effect of ketone bodies or other factors. In a study of a large number of episodes of DKA in children, it has been shown that conscious level is related to the degree of acidosis rather than to level of blood glucose or sodium or osmolality<sup>2</sup>.

## Conclusion

Neurological deterioration in diabetic ketoacidosis could occur as a result of cerebral oedema. However, in our patient, we concluded that it was due to the severity of the metabolic acidosis.

## References

1. Osama Hamdy, MD, PhD Diabetic acidosis Updated: Oct 29, 2014  
<http://emedicine.medscape.com/article/118361-overview>
2. Julie A Edge et al. Conscious level in children with diabetic ketoacidosis is related to severity of acidosis and not to blood glucose concentration Pediatric Diabetes *Volume 7, Issue 1*, pages 11–15, February 2006