

# Severe Hypertriglyceridemia in A Child with Severe Diabetic Ketoacidosis



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## INTRODUCTION

Severe hypertriglyceridemia (HTG) is a very rare complication of childhood diabetic ketoacidosis (DKA). The exact mechanism is unclear but transient insulin deficiency may cause a decrease in the activity of lipoprotein lipase.

Here, we report a case of girl with DKA and HTG.

## CASE

A 14-year-old girl, previously healthy and nonobese, presented with DKA following two months malaise, two weeks of polyuria and polydipsia. She was found to have DKA with her initial blood gas showing a pH of 6.80, HCO<sub>3</sub> 4.1 mmol/l, and anion gap 28 on arrival to our PICU (Table). Her physical examination revealed severe dehydration, decreasing level of consciousness, and her blood gas continued to show a severe metabolic acidosis. The color of her serum was milky. Other biochemical values at admission could not be accurately measured because of severe HTG.

**Table:** Biochemical parameter during the course of hospitalization.

	Hours				
	0	12th	24 th	48th	60th
pH	6.80	7.17	7.28	-	-
HCO <sub>3</sub> (mmol/l)	4.1	9.5	11.5	-	-
Glucose (mg/dl)	516	241	200	267	284
Sodium (mEq/l)	125	126	128	129	132
Potassium (mEq/l)	4.5	3.6	4.3	3.2	3.1
Creatinine (mg/dl)	0.91	1.33	1.43	1.47	1.41
Amylase (U/l)	-	-	178	113	55
Cholesterol (mg/dl)	-	610	542	456	397
Triglycerides (mg/dl)	-	2106	1775	933	645

The girl was treated with insulin and fluid according to the standard DKA treatment protocol. After 38 hours, blood gases had normalized and subcutaneous insulin was commenced. Her plasma triglyceride level was 2106 mg/dl after 12 hours of treatment without abdominal pain and declined 1521mg/dl at second day. Serum amylase was 178 U/l on day 2 and decreased to 55 U/L at 4th day. Serum levels of triglycerides were monitored and gradually reduced to 362mg/dl at fifth day and normalized on day 10.

On outpatient follow-up, no underlying lipid disorders were found and serum levels of triglycerides stayed normal.

## CONCLUSION

- Abnormalities in the gene for lipoprotein lipase could be implicated of severe HTG.
- Although experience regarding HTG in DKA is very limited in pediatric patients, our patient recovered with DKA treatment protocol without plasmapheresis or special medical treatment and no primary lipid metabolism disorders were found.
- Hypertriglyceridemia results from absolute insulin deficiency and increases the risk of acute pancreatitis.

## REFERENCES

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Nothing Disclosure

