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## Hypokalemic Periodic Paralysis in Children –A Rare Case.

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### ABSTRACT

Hypokalemic periodic paralysis is a rare group of disorder that can cause sudden onset of weakness in children. A case of 4 year old female child is presented here. This child presented with sudden onset of paralysis of extremities. Laboratory investigations revealed markedly low potassium level. Her paralysis resolved with the treatment, without neurological deficit. We present a very rare case of hypokalemic periodic paralysis in children.

**Keywords:** Hypokalemia, Periodic Paralysis.

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## INTRODUCTION

Primary hypokalemic periodic paralysis is a rare entity first described by shakanowitch in 1882 [1]. Hypokalemic periodic paralysis is very rare in children. We hereby report a case of Primary hypokalemic periodic paralysis in children.

## CASE REPORT

A 4 year old female child brought to the outpatient department in our hospital with complaints of sudden onset of weakness of all the four limbs since 12 hours. There was no history suggestive of trauma, fever, diarrhea, convulsions, slurring of speech. There was also no history of similar complaints in the family.

On general examination, child was stable; Head to toe examination appeared to be normal. Central nervous system examination revealed, higher mental function- normal, cranial nerve examination – normal, motor system - tone –hypotonia was present in all the four limbs, power was diminished, deep tendon reflex was diminished, plantar bilateral flexor, sensory system was normal, and other systemic examination was normal. Laboratory investigations revealed complete blood count within normal limits, blood urea and creatinine were within normal limits, serum potassium 2.01meq/l, ECG shows sinus tachycardia, CT and MRI brain was done which was normal. Child was diagnosed as hypokalemic periodic paralysis. Child was started on Syp. Potassium and T. Acetazolamide for seven days duration with potassium rich diet. After one week duration of treatment, serum potassium was 3.2meq/l. Later value was 4.0meq/l. Paralysis improved after 2 days of treatment with oral potassium and at the end of week, paralysis recovered and child did not have any neurological deficit.

## DISCUSSION

Periodic paralysis is classified into primary and secondary [2]. Primary hypokalemic periodic paralysis is genetic in origin, which may be exacerbated by strenuous exercise, high carbohydrate diet, cold and excitement [2]. In this type recurrent attack of weakness will occur. Secondary periodic hypokalemic paralysis is non -genetic in origin, which may be due to secondary causes like acute gastroenteritis, diuretic abuse, renal tubular acidosis, batter syndrome, villous adenoma of colon and hyperthyroidosim [3]. Hypokalemic periodic paralysis can further be classified into paralytic and myopathic, in which paralytic is more common [4]. Paralytic attack may last for hours to days, weakness may be generalised to localized [2]. Paralysis is due to increase of Ki/Ke ratio (intracellular potassium on extracellular potassium) which causes hyperpolarization of cell membrane and hence cell is more difficult to exite [5, 6]. Paralysis occurs when potassium depletion is fast [7]. The features of hypokalemic periodic paralysis is flaccid, ascending, symmetrical quadriplegia [5, 8]. Hence disturbances of potassium equilibrium can produce many disorders like myopathy, muscle wasting and diminution of muscle tone, power, reflexes [9].

In our case the child had features suggestive of primary hypokalemic periodic paralysis. Hypokalemic periodic paralysis is common in 1 in 100000 in adults [10]. But it is very rare in children. Hypokalemic periodic paralysis is more common in males [11], but in our case it is unique that female child presented with the symptoms of hypokalemic periodic paralysis. Treatment of primary hypokalemic periodic paralysis was oral water hydration, potassium rich diet, oral pottasium supplement and Intravenous potassium in only life threatening conditions [4]. Whereas our child also improved with oral water hydration, potassium rich diet and oral potassium.

## CONCLUSION

Hypokalemic periodic paralysis is important to consider when a child comes with sudden onset of weakness or paralysis with no history or evidence of other disease. If there is delay in diagnosis of periodic paralysis it can be fatal. Early diagnosis and with rapid correction of potassium will resolve the signs and symptoms quickly and completely.

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