

INSULIN-INDUCED OEDEMA IN A CHILD WITH NEWLY DIAGNOSED DIABETES MELLITUS

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BACKGROUND

Oedema is a rare complication of insulin therapy. It affects mainly patients with newly diagnosed type 1 diabetes mellitus, poorly controlled diabetes mellitus or patients on large doses of insulin. There are only a few case reports showing that it is an uncommon and probably an under-reported complication. Two mechanisms are known: the sodium and water retention and vasoactive mediators release. The oedema tends to develop shortly after initiation of insulin therapy and resolves spontaneously within few weeks.

Here we describe a case of insulin-induced oedema with newly diagnosed type 1 diabetes.

CASE REPORT

9 year old girl was admitted with polyuria, polydipsia, weight loss of 8 kg over 3 months. On physical examination, her height was 145,5 cm (1.62 SD), weight was 45 kg, (1.79 SD), body mass index was 21.4 (1,52 SD). Laboratory findings showed blood glucose level was 491 mg/dl, ketonuria with acidosis was present with venous blood pH of 7.2. Serum electrolytes and liver function tests were normal. HbA1c level was 13,5%. C-peptide level was 0,3 ng/ml (1,1-4,4), anti

GAD and islet cell antibody was positive. She was treated with insulin infusion at a rate of 0,1 unit/kg/hour and standard protocol for management of diabetic ketoacidosis was followed. On the 2nd day, insulin infusion was replaced with subcutaneous insulin (insulin aspart and glargin) reaching after a few days a dose of 2 U/kg/day.

She gradually developed pitting oedema of lower extremities and periorbitally on 7th day insulin treatment. Serum albumin level was normal. She had no proteinuria, liver failure or hyperaldosteronism. Other causes of oedema were excluded. The patient's need for insulin was declined 1,3 U/kg/day. Oedema spontaneously resolved within 3 days.

CONCLUSION

Insulin-induced oedema should be considered in the differential diagnosis in oedema in children and adolescents with type 1 diabetes mellitus. Loop diuretics is beneficial when spontaneous resolution does not occur. This case also supports suggestion in the literature of association between marked weight loss and large insulin doses.

