

THE FIRST TYPE OF DIABETES MELLITUS IN CHILDREN: CAUSES, SYMPTOMS, AND TREATMENT METHODS

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Annotation: this article highlights causes of diabetes origin, clinical symptoms, methods of diagnosis and modern treatment approach.

Key words: The 1 st type of Diabetes, therapy of insulin, Hyperglycemia, Hypoglycemia, complications of Diabetes, clinical symptoms of Diabetes, physical activity in Diabetes.

Introduction

The 1 st type of Diabetes- is the one of the most common chronic endocrine diseases in children, it is characterized by lack of the hormone insulin in the body. The main cause of Diabetes mellitus which begun in childhood-injury the beta cells of the pancreas by the autoimmune process. The conditions caused by diabetes mellitus can lead to the death, this (Hyperglycemic and Hypoglycemic).

Etiology and pathogenesis of this illness.

Genetic predisposition-If parents or close relatives have diabetes the risk is higher.

Autoimmune processes: The immune system of the body produces antibody to its insulin producers beta cells.

Viral infections: Measles, mumps, enteroviruses

Environmental factors, artificial and improper fed from infancy.

By pathogenesis, beta cells are damaged and do not produce insulin.

Glucose cannot enter to the cells and increases in the blood.

This leads to Hyperglycemia and organism begins to use energy from fats and proteins.

Clinical symptoms

Increased thirst that is polydipsia.

Frequent urination, even at night.

Losing weight even appetite has rose

If kid has any injuries or cuts they heal slowly.

Vision becoming blurry.

Tiredness, lack of energy and dizziness.

Bad breath, stomachache and nausea.

The symptoms cannot be obvious in children: Irritability, vomiting, sleepiness and rapid breathing.

Methods of diagnosis

Diabetes mellitus is diagnosed when fasting blood sugar are higher than 6.5 mmol/l.

Children which diagnosed diabetes there are not glucose in their urine. Because the kidneys do not allow it to pass, but level of blood sugar increase than 8,8 mmol/l the glucose is present in the urine.

Glucose and ketone bodies

Capillary blood glucose.

Glycosylated hemoglobin

Blood insulin and C-peptide

Should pass the following analyses and additionally Rheoencephalography (REG), Reovasography (RVG), kidney ultrasound, electroencephalography (EEG)

Method of treatment

Normalizing metabolic processes.

It is necessary to restore level of glucose in blood.

Insulin therapy should be choose each patient individually.

Negative effects of insulin therapy.

Swelling, pain, redness and allergic reactions at the injection site.

Lipodystrophy- the tissue of fat may melt in the injection side.

Special nutrition plan-should eat healthy food, the child's diet should include protein -rich meals, fruits and vegetables.

It is important to control of permanent sugar level by glucometer.

Doing physical exercises help controlling blood sugar level. It is recommended to do physical exercises at least 60 minutes per day on average. To be checked level of glucose before activity. During the activity must be juice or glucose nearly for keeping hypoglycemia.

Insulin therapy- the main treatment method; In the 1st type of Diabetes in children the insulin is necessary for life. Types of insulins:

Ultra-primary-(Lispro, Aspartame, Clulisin)-duration of action: 3-5 hours

Short duration-(regular insulin) -duration of action; 6-8 hours.

Average duration-(NPH)-duration of action: 10-16 hours.

Long duration-(Glargine Detemir)-duration action; till 24 hours.

Using schemes; Basal-Bolus regimen the most recommended method. In this method;

Basal (background) insulin-long-acting (once a day)

Bolus insulin – before meal, short-acting (3-4 times)

Periodic medical check-ups-necessary medical check-ups for children with diabetes.;

HbA1c-once in 3 months; Eye screening (retina)- after 10 years old every year; Kidney (microalbuminuria) -once in a year; Blood pressure- need to check every time; Blood lipids-after 10 years old needs check-ups.

Complications

How kind of complications will be developed if diagnosis is delayed or insulin regimen is disrupted?

The 1st type of Diabetes in different organs, for example; heart, eyes, kidneys, nerves and blood vessels may be injured.

1. Diabetic ketoacidosis-dangerous for life and acute complication. When glucose cannot enter the cells, the body breaks down fats for energy and produces ketones.

Ketones accumulate in blood and increases acidity. Will be such kind of conditions: loss of consciousness, rapid breathing, drop in body temperature, stomachache.

2. Diabetic retinopathy-periodic hyperglycemia that is high blood sugar levels cause damage to the small blood vessels in the retina. May Appear blurred vision, black spots in the eyes. Later there is a high risk becoming completely blind.

3. Diabetic nephropathy- damage of kidneys. Cause of high level of blood sugar the kidney capillaries become inflamed, proteins to leak into the urine. Protein in the urine (Proteinuria), occurs swelling in legs-hands and fatigue.

4. Diabetic neuropathy- this is injury of nerve fibers, appears permanent hyperglycemia results. Symptoms; numbness, itching, pain or loss of sensation in the hands and feet may occur, along with foot ulcers and balance problems while walking.

Conclusion

In the 1st of Diabetes complications are developed slowly but certain. The 1st of Diabetes the one of the most widespread illness between children, it is characterized insulin deficiency during the life. Clinic symptoms of illness occurs suddenly and in cases of delayed diagnosis, severe complications such as diabetic ketoacidosis may develop. That is why early diagnosis and fast start insulin therapy important controlling the disease.

The only way to prevent-to carry out periodic check-ups, permanent insulin therapy, nutrition plan, controlling glucose.

It can be prevent these kind of complications if pay attention early period of 1st Diabetes mellitus.

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