

Management of insulin therapy in special situations

Vittoria Cauvin, Maria Bellizzi

Pediatric Unit, Santa Chiara Hospital, Trento, Italy

Children, whose diabetes is under good metabolic control, haven't a higher incidence of infections than children without diabetes; those with poor metabolic control, instead, suffer from a deficit of the immunitary mechanism and therefore are highly susceptible to different infections.

During intercurrent illness, diabetes care teams should provide clear guidelines on diabetes management to avoid important complications such as dehydration, ketoacidosis and hypoglycemia.

During intercurrent illness it is fundamental never to stop insulin-therapy and more frequently to monitor serum and urinary levels.

In most of the cases, pediatric diseases are associated with fever and therefore hyperglycemia, caused by the increased levels of stress hormones, gluconeogenesis and insulin resistance; in other cases, these are associated with vomiting and diarrhea and this can lead to hypoglycemia episodes.

If there is an evidence of hyperglycemia, additional doses of short or rapid acting insulin and a constant monitoring are recommended; the dose and the frequency of injections will depend on the age of the

child, the level and duration of hyperglycemia and the severity of ketosis.

If a diabetic child presents: vomiting and diarrhea, low blood glucose levels, and ketones but not glucose in the urine, may be useful to reduce insulin dose by 20-50%, replacing meals with frequent small volumes of sugary drinks. In case of persistent hypoglycemia medical hospitalization becomes necessary: overall when the patient is very young, the diagnosis is unclear and the child is becoming exhausted and confused.

The most important steps to be taken regard the treatment of fever, pain and headache with paracetamol and the treatment of vomiting with a single injection of antiemetic drug to help oral intake of carbohydrates.

Another special situation is represented by surgery in diabetic patients. If the child needs general anesthesia it's important that the operation is performed as early as possible in the morning. During the operation insulin should be administered intravenously because this system assures rapid adjustment and maintains an appropriate blood glucose level. When the patient is able to eat and drink, he can return to its usual regimen of insulin administration.