

Does insulin pump therapy improve glycaemic control in type 1 diabetes children : one year follow up

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INTRODUCTION

Since its introduction in the 1970s, Insulin pump therapy is more and more recommended in patients with type 1 diabetes, in order to achieve and maintain an optimal glycaemic control, while trying to mimic the physiological release of insulin through continuous infusion.

AIM

The aim of our study is to determine the effectiveness of insulin pump therapy in improving the metabolic control in children with type 1 diabetes.

PATIENTS-METHODS

It is a retrospective and descriptive study including children with type 1 diabetes treated with insulin pump therapy followed up in the Department of Endocrinology-Diabetology and Nutrition of Mohammed VI University, Hospital Center, Oujda, in the eastern of Morocco, between 2017 and 2021. All patients received a clinical evaluation, glycemic cycle analysis and Hba1C testing. The statistical analysis was done by SPSS version 21.

RESULTS

We collected 05 type 1 diabetic patients, followed up in our department. The mean age was $9,4 \pm 4,7$ years old, 4 girls and 1 boy. The duration of diabetes was less than 3 years for 60% of patients, with a mean duration of 5,6 years. No statural or ponderal abnormalities were noted. The mean Hba1C has decreased between M0, M6, from, $7,4 \pm 0,5$ % to $7,2 \pm 0,9$ and we note that it has increased at M12 by 0,4% (figure 1). The frequency of hypoglycemia decreased from $7,8 \pm 2,8$ episodes/week to $1,5 \pm 0,7$ episodes/week at 6 months ($P=0,07$), and to $0,5 \pm 0,7$ episodes/week at 1 year ($p=0,02$) (figure 2). No severe hypoglycemia was noted during this period.

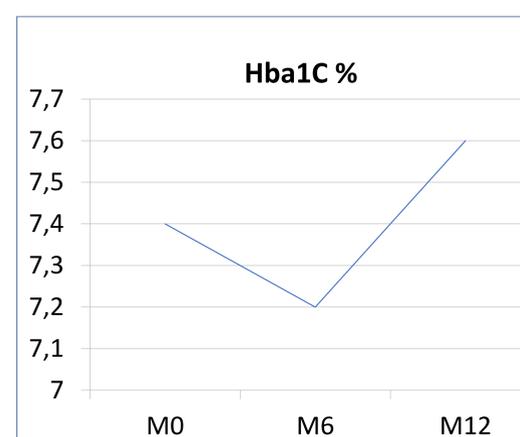


Figure 1: Evolution of Hba1C during the follow-up

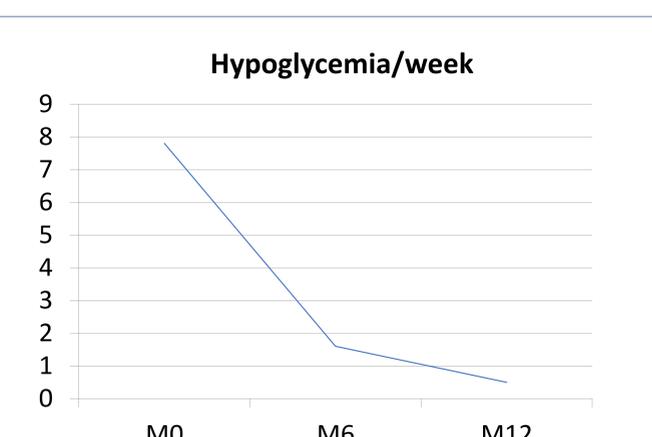


Figure 2: Evolution of hypoglycemic episodes per week during follow-up

CONCLUSIONS

Insulin pump therapy appears to be reliable and effective when used appropriately, combined with intensive therapy education and continuous monitoring. The results of studies that have looked for a long term effect are conflicting, some of them have reported a metabolic control mainly in the first 6 months to one year. Our results showed that there was an improvement in glycaemic control with pump therapy in type 1 diabetic patients followed-up one year in our department

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