Continuous Quality Improvement of Paediatric Hypoglycemia Management

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Introduction
Hypoglycemia is a common phenomenon in the paediatric patients receiving insulin treatment (Lehecka, Renukuntla & Heptulla, 2012). Severe complication may cause fatal. The plasma glucose concentration of below 4 mmol/L (70 mg/dl) was defined of "hypo attack" by the American Diabetes Association. A survey was conducted in 2012 and 2013 to detect patients with frequent hypoglycemia defined as more than 4 episodes of 'hypo attack' in one month and to provide the individualized interventions.

Objectives
1. To recognize the frequent hypoglycemia patients
2. To know how the patients and caregivers manage their hypoglycemia attacks
3. To tackle the hypoglycemia problems with the tailor-made interventions

Methodology
A self-report questionnaire was conducted in 2012 and 2013 at Diabetes Ambulatory Center. Subjects were all paediatric patients with type 1 and type 2 Diabetes Mellitus (D M) when they attended the out-patient clinic. The first survey was used to explore the general condition of the "hypo attack" in paediatric patients in 2012. The second survey was used to evaluate the self-management when the patients with frequent "hypo attacks" in 2013.

Result
Questionnaires were distributed to total 45 patients in 2012 and 2013. Total 133 questionnaires returned from 25 patients and 91 from 14 patients were received in 2012 and 2013 respectively. 11 males and 14 females in 2012 whereas 6 males and 8 females in 2013. Mean age of the patients was 11 +/- 6.5 in both years. All of them were type 1 D M patients except one in both years. 27 % and 31% of them reported that they had experienced frequent 'hypo attacks' in 2012 and 2013 respectively. 100% of the patients with frequent 'hypo attacks' replied that they were treated with
sugars in both years. However, 58% in 2012 and 7 % in 2013 of patients with frequent 'hypo attacks' reported that they did not follow by eating carbohydrate (CHO) foods. All patients reported that they enhanced their hypo management by education during consultation in 2012 and 2013. 7 patients with the frequent 'hypo attacks' were received the tailor-made interventions by Diabetes Nurses and doctors, including education for the CHO counting skill, time matching for insulin action and food intake, learning insulin dose adjustment, changing type of insulin. Four patients reported no frequent "hypo attack" whereas another three patients still presented with. Two were because of fair engagement on his diabetes care and the rest was related to her family problem. Conclusion: The survey showed that all patients with frequent 'hypo attacks' were type 1 DM patients. Tailor-made intervention can reduce the hypo attack episode, so this practice is recommended to be integrated into type 1 DM management. Ongoing healthcare efforts to provide individualized diabetes education and intervention are important for patients and their caregivers.