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Continuous subcutaneous insulin infusion (CSII) is safe and effective in the management of children and adolescents with type 1 diabetes: Report from a specialized center in Kuwait

Dina Omar
Dasman Diabetes Institute, Kuwait

Aim: This study aims to assess the effectiveness and safety of CSII as an alternative to MDI in the management of children and adolescents with T1D in Dasman Diabetes Institute.

Design: Retrospective prospective cohort study.

Participants: Children and adolescents (<20 years old) with T1D who switched from MDI to CSII during 2011-2013. Data were collected from electronic health records. Effectiveness were measured by improvement in HbA1c and TDD, and safety by reduction in incidence of major complication (severe hypoglycemia (SH) and diabetic ketoacidosis (DKA)). Data were collected for 24 months prior to CSII use, and 30 months after.

Results: The mean age of study cohort (n= 64) was 10.9 ± 4.8 years (mean ± SD). HbA1c dropped from 8.7±1.4% at baseline to 8.1±1.0% (0.6% absolute reduction) at 3 months ($p<0.05$). Sustainability of improvement was demonstrated only in those with high baseline HbA1c (>9.0%) with an absolute reduction of 2.4% from 10.6±1.3% to 8.8±2.2% at 30 months. There was no significant reduction in insulin requirement. Reduction in the incidence of SH was statistically significant while it was not significant for DKA.

Conclusions: The use of CSII is effective in improving glycemic control of children and adolescents with T1D in the short term (3 months). Those who were in poor control (HbA1c >9.0%) at baseline, showed significant improvement of glycemic control, after 30 months. CSII use in our study cohort was safe as reduction in the incidence of acute major diabetic complications was demonstrated.

Biography

Dina Omar has graduated from Faulty of Medicine, Kuwait University in 2006 and joined the Internal Medicine Department in a government hospital in Kuwait. She got the membership of the Royal College of Physicians (London) in 2012, Post-graduate certificate of Fundamentals of Diabetes in 2015 from Joslin Diabetes Center in collaboration with Harvard Medical School (USA), and Master's degree in Diabetes Care, Education and Management from University of Dundee in 2016. She is a Research Associate in Dasman Diabetes Center (Kuwait) and an Associate Faculty Staff Member in University of Dundee (Scotland).

dina.omar@dasmaninstitute.org

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