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ORIGINAL ARTICLES

NovoPen Echo® for the Delivery of Insulin: a Comparison of Usability, Functionality and Preference among Pediatric Subjects, Their Parents, and Health Care Professionals

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Abstract

Background:

Despite advances in insulin pen design and functionality, the selection of pens available for children with diabetes is limited. This study assessed the usability, functionality and attitudes towards NovoPen Echo®, a new durable insulin pen designed for pediatric patients that combines a simple memory function with half-increment dosing, versus NovoPen® Junior and HumaPen® Luxura™ HD in pediatric subjects, their parents, and health care professionals (HCPs).

Methods:

Pens were evaluated in random order during 1:1 interviews in the three target groups (pediatric subjects, parents, and HCPs) in Germany, France, and Canada. Study participants were asked to prepare each pen, perform injections into foam cushions, and provide feedback via a standardized questionnaire.

Results:

In total, 205 participants were included in the study. On a scale of 1–6 (1 = most favorable; 6 = least favorable regarding overall appearance, shape, colors, thickness and length), NovoPen Echo received the most favorable rating for design and overall appearance (mean ± standard deviation = 1.71 ± 0.79) compared with NovoPen Junior (2.02 ± 0.93) and HumaPen Luxura HD (2.36 ± 1.01). Furthermore, 89% of pediatric subjects and 94% of parents rated the memory function of NovoPen Echo as very easy/easy to use. When asked to rate the pens overall, 80% of participants preferred NovoPen Echo to the other pens ($p < 0.0001$).

Conclusions:

The results demonstrate a high overall level of satisfaction with NovoPen Echo among pediatric subjects, parents, and HCPs. The novel design aspects of NovoPen Echo, namely the simple memory function, half-increment units and, ease of use and design, may contribute towards promoting treatment adherence, which is essential in the pediatric setting.

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Abbreviations: (CSII) continuous subcutaneous insulin infusion, (HCP) health care professional, (SD) standard deviation

Keywords: adolescents, children, diabetes mellitus, insulin, insulin pen, medical devices, type 1 diabetes

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