

Patient Perceptions of Different Lancing Sites for Self-Monitoring of Blood Glucose: A Comparison of Fingertip Site with Palm Site Using the OneTouch® Ultra® Blood Glucose Monitoring System

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Abstract

Background:

Alternate-site testing (AST) for self-monitoring of blood glucose leads to improved glycemic control for treatment of diabetes mellitus. The aim of this randomized, open-label, two-period, crossover study was to compare the comfort of two different lancing sites, fingertip and palm sites, for AST in diabetes patients.

Methods:

Patients injected insulin four times a day. Self-monitoring of blood glucose was carried out more than thrice daily with fingertip measurements for at least three months using apparatuses except the OneTouch® Ultra® Blood Glucose Monitoring System (OneTouch) before examination. The comfort of two lancing sites using OneTouch were compared. In two randomized groups that used one fingertip lancing site for one week followed by the alternate lancing site for another week, patients completed 11-item questionnaires assessing usability of the site before and after each week. Each item was scored on a visual analogue scale from -100 (most negative) to +100 (most positive).

Results:

Most patients desired to continue AST, which was insignificantly different between the two lancing sites (fingertip and palm AST) in 43 diabetes patients aged 57.3 ± 13.8 years, body mass index of 23.1 ± 2.5 kg/m², diabetes duration of 19.6 ± 9.7 years, and hemoglobin A1c of $7.4 \pm 1.1\%$. However, patients were less ($p < .01$) satisfied with using the palm lancing site as compared to the fingertip lancing site because of difficulties in inserting the needle, drawing blood samples, and applying enough blood into the test strip.

Conclusions:

These results suggest that patients desire to use the palm for AST, but more technological advances in AST of a palm site is required to reduce patient discomfort.

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Abbreviations: (AST) alternate-site testing, (BMI) body mass index, (CSII) continuous subcutaneous insulin infusion, (FBGT) fingertip blood glucose testing, (HbA1c) hemoglobin A1c, (IDDM) insulin-dependent diabetes mellitus, (OneTouch) OneTouch® Ultra® Blood Glucose Monitoring System, (PBGT) palm blood glucose testing, (SMBG) self-monitoring of blood glucose

Keywords: alternate-site blood glucose testing, fingertip site, palm site, self-monitoring of blood glucose

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