

Visible Observation Method vs. Foot-skin Moisture Measurement Method of Diabetics

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Introduction

Neuropathy causes problems from dry to cracked skin to foot ulcers in diabetics. Thus, early detection of dry skin and appropriate nursing intervention is important. However, the subjectivity of visible observation is not a consistently reliable early detection method. The purpose of this study was to examine whether a combination of neuropathy and low keratin moisture levels in the foot soles skin can be used as an objective index to better detect early stage dry skin on the soles.

Methods

38 diabetic patients (mean age 40.5 ± 21.1) consented to participate in this study. The researchers measured the keratin moisture in the foot soles skin with Moisture Checker®, tested for neuropathy using monofilament, nerve conduction velocity, and postural hypotension. The keratin moisture levels were compared to both the visible observation results and neuropathy test results. Chi-square tested the relationship between the neuropathy test results and visible observation.

Results

The subjects suffered from diabetes for a mean of 12.7 ± 8.7 years. HbA1c was $7.4 \pm 1.4\%$. 29 patients had visible dry heel skin. 17 had neuropathy. Visible observation of the heel showed no correlation to either keratin moisture, or neuropathy test results. However, keratin moisture levels were significantly low for subjects assessed at neuropathy.

Discussion

Since the subjects assessed at neuropathy had lower keratin moisture levels in their heel skin than those who tested negative, the researchers believe that the measuring of keratin moisture levels in diabetic patients may be used as an objective and non-invasive method to detect early stage dry skin.