Equivalence of Temperature Measurement Methods in the Adult Hematology/Oncology Population

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Background: Neutropenic patients often become febrile and require frequent temperature monitoring. Monitoring core body temperature is considered the gold standard for accuracy. Taking oral temperature is the recommended noninvasive practice when core body temperature cannot be obtained; however, neutropenic patients often, for various reasons, are unable to tolerate an oral probe.

Objectives: The purpose of this article is to determine the equivalence of temperatures taken via temporal artery, axillary, and oral methods, and to determine the best alternative to the oral method in the adult hematology/oncology population.

Methods: A repeated measures equivalence design was used. A convenience sample of 40 data sets (N = 33 inpatients) was tested on a hematology/oncology inpatient unit in a National Cancer Institute–designated comprehensive cancer center in the southeastern United States. A Latin squares design was employed with three possible sequences of measurement. Demographic data were analyzed using descriptive statistics, and equivalence was tested using the two one-sided tests method. Acceptance criterion for difference between methods was set at 0.2°F from the oral method.

Findings: The temporal method is a potential noninvasive alternative to the oral method for the adult hematology/oncology population.