a problem associated with any correlation coefficient (2). The ICC for a very homogeneous data set will be low but can only be generalized to ranges similar to that on which it was computed: in the extreme case presented by the authors, blood glucose of 3.36–3.58 mM. Dedrick and Davis are correct in suggesting that a representative range of blood glucose values be included in studies of self-monitoring of blood glucose (SMBG) devices. Like other statistical techniques, the ICC is based on underlying assumptions, and the uncritical generation of any statistic may lead to misleading results. These assumptions have been delineated by Lahey et al. (3) along with alternatives for dealing with extreme data sets.

Finally, we know of no test of statistical significance that addresses "clinical" significance. This is a rather subjective process of relating study results to clinical practice. The ICC does, however, allow the researcher to compare obtained results with chance expectation, the basic principle on which medical research is based; the error-grid analysis proposed by Dedrick and Davis does not (4). We recommend use of the ICC in SMBG studies. Perhaps the more judicious approach is to include both the ICC and the error grid in assessing the accuracy of SMBG devices.

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## REFERENCES

- 1. Shrout PE, Fleiss JL: Intraclass correlations: uses in assessing rater reliability. *Psychol Bull* 86:420–28, 1979
- Anastasi A: Psychological Testing. 4th ed. New York, Macmillan, 1976, p. 125–27
- 3. Lahey MA, Downey RG, Frank ES: Intraclass correlations: there's more there than meets the eye. *Psychol Bull* 93:586–95, 1983
- Cox DJ, Clarke WL, Gonder-Frederick L, Pohl S, Hoover C, Snyder A, Zimbelman L, Carter WR, Bobbitt S, Pennebaker J: Accuracy of perceiving blood glucose in IDDM. Diabetes Care 8:529–36, 1985

## Capillary Blood Glucose Sampling and Transmission of Blood-Borne Infections

A recently reported outbreak of hepatitis B was traced to a capillary blood glucose sampling device (1). Douvin et al. recommended removing not only the disposable lancet but also the disposable finger guard after each fingerstick when a capillary blood sampling device is used for many patients, to prevent hepatitis B infection and possibly other blood-borne infections such as human immunodeficiency virus (HIV). Recently, we stud-

ied a possible HIV transmission by the sharing of a device (Autolet R), which fortunately was not confirmed.

A 24-yr-old bisexual man, with insulin-dependent diabetes diagnosed when he was 9 yr old, was admitted to our diabetes unit to improve his metabolic control. The patient entered a metabolic optimization program, including capillary blood glucose monitoring and the administration of multiple insulin doses. After the hospital discharge, the patient decided to test, without a clear reason, the capillary blood glucose of four relatives (his parents, 1 brother, and 1 sister). He used his Autolet device, changing the lancet after each test but not the finger guard. One month later, the patient was readmitted because of diarrhea and fever. Esophageal candidiasis was diagnosed. Antibodies against HIV were detected by an enzyme-linked immunosorbent assay (ELISA) method and confirmed by Western blot. Three months later, the patient developed a Pneumocystis carinii pneumonia and a central nervous system toxoplasmosis. His general condition worsened gradually, and he finally died. Serums from his four relatives were tested for the presence of HIV antibodies at that moment and again 6 mo later. All samples were negative by an ELISA test.

It is not unusual for diabetic patients starting capillary blood glucose monitoring to want to try it out on their relatives with their own blood-sampling device. An HIV infection and, more often, a hepatitis B virus infection may be transmitted by this route. We stress that diabetologists must advise their patients to avoid this kind of activity.

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## REFERENCES

Douvin C, Simon D, Zinelabidine H, Wirquin V, Perlemuter L, Dhumeauz D: An outbreak of hepatitis B in an endocrinology unit traced to a capillary-blood-sampling device. N Engl J Med 322:57–58, 1990

## Influence of Insulin Pen Injection Frequency on Quality of Life

The impact of the insulin pen on the quality of life of patients with insulin-dependent diabetes mellitus (IDDM) has been debated. The theoretical advantages and disadvantages of the use of the pen have also been reviewed (1). In a clinical study, we showed that quality of life was consistently improved after pen treatment, a finding corroborated by other studies (2–4). Metabolic control only improved for the group of patients who