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Response to Sternberg et al.

We appreciate the interest in our article concerning the reliability of self-monitoring of blood glucose (SMBG) in IDDM (1). As clearly stated in the report, the aim of the study was to evaluate whether or not frequent SMBG recordings (performed at least seven times a day) sufficiently mirror the true variations

in diurnal glucose control in IDDM patients during ordinary life conditions. For this purpose, microdialysis measurements of glucose in subcutaneous adipose tissue were carried out as a reference method, thus allowing continuous monitoring of glucose control to be made in the ambulatory state (2). Hence, the objective was not to explore the potential clinical feasibility of the microdialysis glucose monitoring technique per se.

As recently reviewed by us (3), Sternberg et al., as well as other research groups, have made important and successful efforts to combine subcutaneous microdialysis with an extracorporeal enzyme-based electrochemical glucose sensor for on-line glucose monitoring and acoustic notification of hypoglycemia and hyperglycemia. To the best of our knowledge, however, we are not aware of any report by the Ulm Study Group or by others, in which SMBG and continuous microdialysis glucose monitoring profiles have been compared in a standardized way. Nevertheless, since our findings definitely demonstrate that the true variability in glucose control in most IDDM patients is too great to be reflected with accuracy even by frequent SMBG recordings, it is our hope that the ongoing developments of the microdialysis technique by different investigators in this area will lead in the near future to the introduction of a commercially available and easy-to-handle device for continuous glucose monitoring in IDDM patients.

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Choreoathetosis and Diabetes

Choreoathetosis is an uncommon disorder of movement that can occur in a variety of clinical settings that include Huntington's chorea, rheumatic fever, and several primary degenerative neurologic conditions and with certain pharmacological agents (e.g., neuroleptics). A patient with diabetes can manifest focal neurological abnormalities when his or her disease is out of control (diabetic ketoacidosis or hyperosmolar state). Chorea has not been previously described as a result of diabetes. Here, we present a patient who presented with generalized choreoathetosis due to diabetic ketoacidosis.

An 80-year-old white female was admitted to the hospital because of weakness, polyuria, and polydipsia, which had been progressive over the prior week. The patient's son had noticed bilateral dance-like movements of her upper extremities that had begun the previous evening. The patient herself was not bothered by this abnormality. Her past medical history was noteworthy only for type II diabetes and hypertension. There was no history of parkinsonism or rheumatic fever. She took only vasotec and gliburide. She had no allergies or any family history of degenerative neurological disorders.

She was afebrile with a heart rate of 54 bpm and a blood pressure of 100/74 mmHg. She was awake and alert with fluent speech. Her head and neck examination revealed dry mucous membranes, her lungs were clear, and her heart sounds normal. Her neurological evaluation was nonfocal with intact cranial nerves and normal sensation. She had poor motor control (fine and coarse) of the upper extremities bilaterally with dance-like flamboyant movements. Minimal sustained effort was sufficient to bring this out. There was minimal rigidity bilaterally. Laboratory evaluation showed a blood glucose of 928 mg/dl, the anion gap was 18, and an arterial blood gas (ABG) revealed a pH of 7.28, PCO₂ of 23 torr, and PO₂ of 289 torr on supplemental oxygen. A urinalysis showed many leukocytes and bacteria. A head computed tomography scan revealed only bilateral calcification of the basal ganglia and cerebellum, which can