It is most appropriate that the inaugural issue of this journal include a manuscript on pancreatic transplantation that may well indicate the mode of future therapy in many patients with juvenile-onset diabetes. Gliedman et al.1 have over the past several years played an active role as advocates of clinical transplantation of vascularized pancreatic segments in a selected group of patients. Other surgeons such as Lillehei et al.2 in Minnesota and Groth et al.3 in Sweden have had a poor experience with their attempts at this procedure. Dubernard et al.4 in Lyon have more recently described transplantation of pancreatic segments in which the duct has been injected with neoprene. Moreover, there is evidence in experimental animals that with the use of agents that partially inhibit exocrine secretion in pancreatic segments implanted intraperitoneally it is possible that duct ligation or anastomotic drainage is not necessary at all.5 In these experiments the mesothelial surface of the peritoneum was proved again to have a copious absorptive capacity, enabling removal of proenzyme-containing secretions, if enzyme-activating circumstances (e.g., infection) could be avoided. There has been a benign course eventually associated with cessation of exocrine function, which occurs within a matter of weeks.

It therefore appears justified to us that two major categories of patients should be treated by either the surgical method of vascularized grafts or that of allotransplantation of pancreatic islets. These are essentially the two groups that are described by Gliedman et al. in a small study in this issue. Notwithstanding, there are major disadvantages in each group. Group I consists of individuals with end-stage renal disease in which progression of diabetes has led to irreversible and, in many instances, moribund cardiovascular status. The measurement of beneficial changes in the progression of the disease that could be considered to be due to pancreatic transplantation is obviously very difficult in these quite ill patients, although it is not impossible if sufficient numbers of patients can be studied.

Group 2 consists of patients in whom the state of juvenile-onset diabetes has led to earlier marginal changes in organs such as the kidneys, eyes, and peripheral vasculature as objectively documented by biopsy, retinal photography, arteriography, etc. Here the changes in progression of the complications of diabetes can be measured much more easily. The major obstacle in this group continues to be histocompatibility. This is so because the genetic disparity in nonuremic patients is perhaps even more difficult to surmount with current immunosuppressive modalities. However, the key word is "perhaps." Although both whole or segmental pancreas, as well as islets, are definitely immunizing foci and sensitive targets of rejection mechanisms, protocols involving organ enhancement/tolerance and suppressor cell activity in experimental transplantation now show more promise for clinical applicability.5 We therefore are very supportive of such efforts and believe that critically defined clinical protocols should even now have their inception in larger transplant centers.

JOSHUA MILLER AND DAVID E. SUTHERLAND
MINNEAPOLIS, MINNESOTA

REFERENCES

Urine Testing, 1978

It is somewhat surprising to find in this inaugural issue of DIABETES CARE four articles on the seemingly mundane topic of urine testing. Yet, if properly used, urine testing is important in the monitoring of
the patient’s response to treatment of diabetes. Because of the growing evidence\textsuperscript{1–3} that careful control of diabetes can contribute to lessening the risk of long-term complications of the disease, it becomes even more important for patients and health professionals to carefully monitor diabetes control. Although urine glucose is only a secondary reflection of blood glucose, urine testing remains the most convenient, practical tool for most patients to monitor their diabetes control. Thus, the four articles in the current issue of DIABETES CARE are indeed important.

Perhaps most noteworthy is the American Diabetes Association’s recommendation that the “per cent” system be uniformly adopted for all urine-glucose tests. This assumes that the color changes do accurately reflect urine-glucose concentration in “grams per cent,” which is grams/100 ml. or grams/dl. Provided this assumption is correct, the “per cent” system is clearly more desirable than the archaic “plus” system, which Kohler describes as “irrational and detrimental” in her report for the Committee on Materials and Therapeutic Agents.\textsuperscript{4} With the marked differences between methods in the urine glucose concentrations reflected by the “plus” readings (Kohler’s table 1), this recommendation is long overdue.

The Committee on Materials and Therapeutic Agents made two additional recommendations, which the A.D.A. Board of Directors approved. Although we are in general agreement with these recommendations, we would advance a note of caution before they are universally endorsed.

First, the Committee has recommended that the two-drop Clinitest method become the method of choice in labile juvenile diabetes. This recognizes the greater range of concentrations that this method permits quantitating. We indeed find this the method of choice in most patients with juvenile diabetes. However, we would suggest two cautions. One is that patients understand that 1 per cent or 2 per cent glycosuria is indeed a large amount of urinary glucose spill. Accustomed to thinking that “1+” or “2+” is a relatively small spill, some of our patients have been relatively nonchalant about readings of 1 per cent or 2 per cent, even though they would be taking appropriate action if this were presented to them as “3+” or “4+.” The problem is in changing the “mind-set” of patients in whom a response pattern has developed. The other problem with the two-drop Clinitest method is that it is less sensitive than any other testing method, including the five-drop Clinitest method. If our goal is indeed aglycosuria most of the time, which we think it should be, then it may be a step backwards to recommend and adopt the least sensitive of available methods.

Second, the Committee has recommended that “dipstick” methods be considered only as qualitative and useful only in the assessment of stable diabetes. This recognizes the difficulty in reading the various color gradations that correspond to urine-glucose concentration. The recommendation, however, fails to do justice to the place these methods do have in clinical practice and also lumps together several methods, which is clearly inappropriate. The report by Kohler does address some of these issues, and we urge readers to study the report fully, rather than accepting only the recommendation. The report correctly notes that Diastix is indeed readable and quantifiable. It certainly can be useful for luncheon urine checks for schoolchildren or working people when it is much more inconvenient to use Clinistest. The report also notes that Tes-Tape may become the method of choice in patients in whom inhibitors of the glucose oxidase reaction must be used. This is because of the often overlooked property of Tes-Tape of allowing a chromatographic separation of glucose from interfering substances.\textsuperscript{5}

Another urine-testing article describes new methods of urine testing for the patient with impaired vision.\textsuperscript{6} These methods can be widely used by patients and should greatly improve their care. Their availability will certainly be greater than the audio system described last year,\textsuperscript{7} although the latter is more accurate.

Finally, two articles\textsuperscript{8,9} in the current issue illustrate the danger inherent in the assumption that substances that interfere with urine-glucose testing procedures in the laboratory will do so when administered to patients. Thus, these articles allow us to remove two very commonly used substances—methyldopa and vitamin C—from the list of substances alleged to interfere with the Clinitest method of urine glucose testing.

DENISE L. SKYLER
ILENE A. LASKY
MIAMI, FLORIDA

REFERENCES