
Workshop Report

Prevention and early treatment of NIDDM

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RESEARCH OPPORTUNITIES —

Critical scientific and practical questions are whether it is possible to prevent NIDDM and whether early treatment of diabetes is effective. There are three potential strategies that may retard the development of prevention of NIDDM and which are also of importance in the early treatment of NIDDM—control of obesity, preservation of insulin action, and preservation of insulin secretion. The panel stressed the impact of exercise both on the control of obesity and the preservation of insulin action. A structured exercise program such as that conducted in the Zuni community can be made available to an entire community. The importance of community involvement in establishing and sustaining such programs, and the importance of using sound principles of effective behavior modification were recognized.

EARLY TREATMENT —

Evidence suggests that an aggressive medical approach early after diagnosis, combined with an early aggressive behavioral approach, can lead to glycemic control (for an undetermined period), which may persist when medications are discontinued. Beyond the immediate physiological value of this, there may be behavioral advantages resulting from the patient's sense of control over the disease and providing motivation to sustain the behavioral or life-style changes to maintain

euglycemia. This early intervention strategy was presented as an example of a regimen that might be standardized and evaluated in a controlled, randomized fashion.

DIABETES PREVENTION — Discussions of diabetes prevention were directed to the question of whether there are interventions that could be effective in preventing or postponing the onset of diabetes. It was reiterated that a good prevention trial is important but logistically difficult. All interventions, other than a trial involving specific medications, are based on behavioral changes. This poses problems, especially in randomizing the study groups, blinding the studies, and dealing with self-selection bias.

Drug intervention trials are logistically much easier than behavior programs. Behavior-based programs, such as exercise and weight-loss programs, are difficult to implement and sustain, and their structure is largely determined by the nature of the communities. There is also a great deal of recidivism from behavior change programs.

Another challenge in designing prevention trials is the rapid rate of change in the prevalence and incidence of NIDDM in different communities. This complicates comparisons of preintervention rates with postintervention

findings and indicates the desirability of randomized controlled interventions. Because there is extensive preexisting baseline data among Pima Indians, it may seem reasonable to do a prevention trial first in the Pima Indian communities. On the other hand, the Pima Indian population may be too small to yield a reliable answer to the question of whether NIDDM can be prevented in subjects with impaired glucose tolerance within a 5-yr period. It may be possible to get that answer within 5 yr if suitable subjects were selected from a number of different tribes.

The value of postponing the onset of clinical diabetes, even for as little as 1 yr was discussed. Postponing the onset of diabetes may have a significant impact on morbidity, mortality, and quality of life. Although non-Indians tend to gain weight only until 18 yr of age, Pima Indians continue to gain weight until 35 yr of age before leveling off. If this continuous weight gain could be retarded, even without weight reduction, the incidence of diabetes may be significantly reduced. Intervention strategies that either promote weight loss or retard weight gain constitute an opportunity for future research.

DESIGN AND CONDUCT OF PREVENTION STUDIES IN INDIAN COMMUNITIES —

Discussions included considerations relating specifically to intervention and prevention trials in Indian groups. It was pointed out that tribes are sovereign nations and their governments must be partners with the NIDDK and the IHS in determining research directions. It was emphasized that studies must be culturally appropriate and interventions should be designed in the light of local considerations. Though data regarding behavioral change in the general population exist, it should *not* be assumed that different Indian communities will have the same response.

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NIDDM, NON-INSULIN-DEPENDENT DIABETES MELLITUS; NIDDK, NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES; IHS, INDIAN HEALTH SERVICE.

Caution must be exercised to prevent misunderstanding of concepts. For example, to talk about NIDDM or obesity being genetically determined may impart a message that nothing can be done about it, and the need for "adequate scientific controls" may give the impression that scientists are attempting to "take control" of Indian communities in some way.

The NIDDK is mandated by the

federal government to do research, not to provide health services. The IHS and the tribes are ultimately responsible for implementing interventions to prevent or control diabetes. To obtain the best possible health services, it is also incumbent on tribes that they take an active role in participating in research and in seeking, designing, and implementing health services with the IHS. In this three-way

partnership between NIDDK, IHS, and the tribes, the role of the National Institutes of Health is to determine which interventions work and which do not. If tribes are willing to design and participate in well-designed intervention trials with scientific controls, then the NIDDK can play an important and active role in trying to achieve the ultimate goal of preventing diabetes.