known and unknown, were present, the number of individuals reaching that end point was too small to permit a definitive conclusion.

Summary

The benefits of oral hypoglycemic agents are limited to those diabetic patients who are responsive, in that symptoms of diabetes are absent and blood glucose levels are significantly and consistently lowered (20 per cent or more) below pretreatment values. Under these conditions, benefits may be summarized as *definite* or *qualified.*

DEFINITE

1. Convenience.
2. In those with diminished vision, arthritis, or other problems, who find injection of insulin difficult or impossible.
3. For individuals whose diabetes is not controllable by diet and whose employment and/or economic status might be jeopardized by the taking of insulin.
4. In certain patients with allergy to insulin, in whom desensitization is difficult or cannot readily be maintained.
5. In truly responsive diabetics in whom normoglycemia is more readily attained than with insulin.

QUALIFIED

If lowering of lipid and other metabolic abnormalities related to insulin deficit are important in protecting the diabetic from earlier progression of vascular lesions and neuropathy, as well as from infection, the use of oral hypoglycemic agents is of benefit in patients who attain "significantly" lower blood glucose values than are attainable by use of diet alone. My criteria for such blood glucose values are that on two out of three occasions the blood glucose, whenever drawn, is normal.

Data from the UGDP study have thus far contributed nothing to the controversy regarding the effectiveness of blood glucose control and are sufficiently in doubt as to the apparent lesser benefits of tolbutamide and phenformin as compared to diet alone or diet and insulin, so that the results cannot at present be extrapolated to the diabetic population at large. They do not warrant discontinuation of the appropriate routine clinical use of oral hypoglycemic agents.

References

1. The University Group Diabetes Program: A study of the effects of hypoglycemic agents on vascular complications in patients with adult onset diabetes. II. Mortality results: Diabetes 19(Suppl. 2):789, 1970.