

COMPETITIVE PROBLEMS IN THE DRUG INDUSTRY 13483

that in the placebo group. Because of imperfections in the randomization process and in the maintenance of blinding, and because of the preliminary nature of the data obtained to date, the committee concluded that "the provisional data that Dr. Keen has kindly sent us* * * do not throw doubt on the UGDP findings in regard to deaths from cardiovascular causes." In regard to the Paasikivi study, which appeared to show a beneficial effect of tolbutamide on mortality in the first year in patients who survived a first myocardial infarction, the committee concluded: "This study neither confirms nor contradicts the UGDP findings, as the population under consideration was not one of maturity-onset diabetics, and the patients taking tolbutamide had been exposed to a relatively small dose for a shorter time than that applied in the UGDP study." The studies of Feldman et al. (ref. 21) and of Tzagournis and Reynertson (ref. 22) were also briefly reviewed by the committee. Their conclusion was that in neither study has a sufficient number of deaths yet occurred to permit meaningful interpretation of results.

In addition to evaluating these criticisms of the UGDP study, the Biometrics Society committee conducted extensive new analyses of the UGDP data, taking into account the effect of various baseline variables and cardiovascular risk factors. These analyses confirmed that cardiovascular mortality was increased in the tolbutamide group. This increase was statistically significant in females, especially in women over the age of 53, but not in males. An important finding was that the highest death rate occurred in the group of patients who adhered most closely to the tolbutamide regimen and did not have their dose modified. Also when