

Cerebral Vascular Disease

6th International Conference Salzburg, 1972

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Preface

The Sixth Salzburg Conference on Cerebral Vascular Disease was held in Salzburg, Austria from September 27 to October 1, 1972. This book is composed of the papers presented at this meeting. The Salzburg Conference has been accepted by the World Federation of Neurology as the Problem Commission on Cerebral Vascular Disease and Disorders of the Cerebral Circulation; it is an International Meeting of scientists that meets regularly every two years in order to present papers and discuss progress in research on the world-wide problem of cerebral vascular disease. At this conference, clinicians and basic scientists from all over the world gather together to discuss their research on cerebral circulation and metabolism and the clinical problems that result from its disturbance.

At the introduction to the conference Dr. Klaus Zülch, Professor, Max-Planck-Institut für Hirnforschung, Köln-Merheim, West Germany, emphasized that the Salzburg Conference on Cerebral Vascular Disease is different from any other international conference on related subjects in that 1. the primary concern is with clinical aspects of cerebrovascular disease, 2. the group is international and not regional, and 3. there is provision of adequate time for discussion among the participants.

The Program Committee consisted of Professor Cornelio Fazio (Rome, Italy), Professor David Ingvar (Lund, Sweden), Dr. Seymour Kety (Boston, USA), Dr. John S. Meyer (Houston, USA) and Dr. Klaus Zülch (Cologne, West Germany). The organizing secretaries were Dr. Helmut Lechner (Graz, Austria) and Dr. Otto Eichhorn (Graz, Austria).

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Biostatistics – Classification – Pathogenesis

Cerebral Atherosclerosis and Atherosclerosis of the Limbs in 3573 Cases: Differences in Risk Factors

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In our preliminary study a group of 3,573 subjects, all males, hospitalized several times in our Angiological Department, was examined within a period of about 15 years: 584 had atherosclerosis manifested exclusively in the encephalon, 2,124 had atherosclerosis exclusively in the lower limbs (intermittent claudication or ulcerogangrenous lesions); 339 had atherosclerosis in the encephalon and the lower limbs (intermittent claudication or ulcerogangrenous lesions); 526 had no clinical manifestations of atherosclerosis but were hospitalized for phlebopathy or syndromes erroneously attributed to arterial disease.

In each of these four groups we took the following risk factors into consideration:

1. arterial hypertension; 2. hypercholesterolemia; 3. increased beta/alpha ratio; 4. the presence of diabetes; 5. an excessive use of tobacco; 6. age at which clinical manifestation of disease appeared.

In the case of risk factors 1, 2 and 3, assessment was based on values of those parameters during numerous measurements carried out in repeated sojourns of the patient in our department. In making an evaluation, we took into account the age of the subject and possible variation, for parameters 2 and 3, in the methods used to measure them.

In each group, we calculated the percentage frequency of the subjects with risk factor and the probable error.

In our second study we took into consideration the single values of the risk factors, as they appeared in the course of the examination carried out at the moment of the first admission to our department, still using the same method for determination.

This second study was carried out on a group of 283 subjects: 36 with atherosclerosis manifested exclusively in the encephalon; 221 with atherosclerosis exclusively in the lower limbs; 26 with atherosclerosis in the encephalon and the lower limbs.

The risk factors are: 1. blood pressure; 2. total cholesterol (method of Klatkis); 3. beta/alpha ratio of lipoproteins (paper electrophoresis); 4. total

lipidemia (gravimetric method); 5. triglyceridemia (UV test with NADH); 6. number of red blood cells and 7. hematocrit.

Results of the First Study (Table 1)

1. Arterial hypertension. This certainly constitutes a risk factor for atherosclerosis of the encephalon and/or of the limbs, since the incidence of 27.6% of hypertensive subjects out of the total number of atherosclerotic patients examined by us is significantly greater than the incidence of 14.6% of the group of non-atherosclerotic patients. Its effect, however, is modest, if one considers that a good 72.4% of the subjects with atherosclerotic manifestations are not hypertensive.

Arterial hypertension is a risk factor which is decidedly more important for atherosclerosis of the encephalon (40.9%), than it is for atherosclerosis of the limbs (23.4%).

2. Hypercholesterolemia. This also is certainly a risk factor for atherosclerosis of the encephalon and/or of the limbs, yet its importance is less than that of arterial hypertension. In fact, the difference in incidence of hypercholesterolemia in atherosclerotic (25.7%) and non-atherosclerotic subjects although significant, is small.

Hypercholesterolemia is a greater risk factor for atherosclerosis of the limbs (26.6%) than for that of the encephalon (23.3%). This difference is statistically significant.

3. Abnormally high beta/alpha ratio. This does not appear to constitute a risk factor for atherosclerosis of the encephalon and/or of the limbs. In fact, the incidence of subjects with a high ratio is practically equal, in the atherosclerotic (35.9%), and in the non-atherosclerotic subjects (35.2%).

There appears to be no significant difference between atherosclerosis of the encephalon and atherosclerosis of the limbs.

4. Diabetes. This certainly constitutes a risk factor for atherosclerosis of the encephalon and/or of the limbs. The incidence of diabetic subjects out of the total number of atherosclerotics (13.5%) is almost three times greater than in the group of non-atherosclerotic patients (5.1%).

As a risk factor, diabetes is decidedly more important for atherosclerosis of the limbs (14.7%) than for encephalic atherosclerosis (8.5%).

5. Excessive use of tobacco. We have no data to demonstrate its role as a risk factor, either as regards more moderate use, or none, since we have not made an analogous study in the group of subjects without manifest atherosclerosis with the same precision. However, we have encountered consumption of tobacco to a moderate or high degree in all subjects with atherosclerosis of the encephalon and/or of the limbs, except in a few very rare exceptions not exceeding 2%. In the case of these exceptions, we have always found the pre-