

DEATH DISCORDANT TWINS

A New Method to Evaluate Genetic Factors in Chronic Diseases

ULF DE FAIRE, TORBJÖRN LUNDMAN

The Serafimerlasarettet Medical Clinic, Stockholm, Sweden

At the international twin symposium in Puerto Rico in 1969, studies of mortality were considered of great importance and as valuable extensions; clinical examinations of the partners of deceased twins were suggested with a view to detecting any differences in disease prevalence between surviving MZ and DZ cotwins.

One important line of the research program for the Swedish Twin Registry is a continuous mortality follow-up of all the twins. From January 1971, information on deceased twins has been available every month, thereby permitting clinical examinations of the surviving cotwins reasonably soon after the death of the partners. This provided one of the prerequisites for a study on ischemic heart disease (IHD) in death discordant twins. The method used is presented for. It is concluded that this model can be applied not only to IHD but also to other chronic diseases.

Ulf de Faire, M.D., Serafimerlasarettet, Fack 12700, 11283 Stockholm, Sweden

“EQUIVOCALNESS” AND OTHER EMPIRICAL METHODS IN ZYGOSITY ASSESSMENT

L. GEDDA, M. MILANI-COMPARETTI, E. D'ALESSANDRO

The Gregor Mendel Institute of Medical Genetics and Twin Research, Rome, Italy

Department of Biology and Genetics, Medical School, University of Ancona, Italy

Zygoty determination is generally carried out by different methods in small and respectively large twin samples.

The probability method of Penrose and Maynard-Smith, based on sex and biological markers, is limited to relatively small samples, as a consequence of its cost.

The empirical “two peas in a pod” questionnaire method, especially developed by Cederlöf, is applied in several large twin registers. Its margin of error is low enough for population studies, its cost is negligible,

but its accuracy is insufficient when zygosity of twin pairs included in definite samples must be individually assessed.

Efforts to bridge the distance between the two methods should be made, and they may take either direction: (1) find new, inexpensive biological markers with definite probabilities, or (2) increase the number and accuracy of empirical methods.

The accuracy of a number of empirical methods applied to a twin sample of established zygosity has been compared.

One modification of the “two peas in a pod” method, originally called “equivocality method” by Gedda, appears to warrant inclusion in questionnaire methodology. Also, compound probability as expressed by several empirical methods may reach an acceptable level of accuracy in zygosity assessment.

Prof. Luigi Gedda, Istituto Mendel, Piazza Galeno 5, 00161 Roma, Italy

BLOOD VESSELS OF THE TWIN PLACENTA IN RELATION TO ZYGOSITY

INDRA BHARGAVA

Department of Embryology and Genetics, Jundi Shapur University, Ahwaz, Iran

In continuation of the earlier suggestion that anatomical characteristics of fetal blood vessels of the placenta are largely determined by functional demands, rather than genetic factors exclusively, 220 placentae (28 monochorial) from multiple pregnancies — including triplets, conjoined twins, and acardiac monsters — were injected with corrosion preparations. The anatomical characteristics of the arteries, veins, arterio-venous relationships, velamentous vessels, and vascular communications, were studied. The incidence of hydramnios and congenital defects, in relation to the placental component, was also recorded.

Practically all the anatomical characteristics of the blood vessels and their relationship in either component of the twin placenta showed discordance of varying degree, irrespective of zygosity, including that of the pattern in 44 dichorial placentae. Singular involvement of one component of the twin placenta by hydramnios or congenital anomalies; incidence of vascular communications and the anatomical characteristics of