THE INCIDENCE OF TWIN BIRTHS IN TURKEY

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Ever since Francis Galton emphasized the importance of twins for geneticists, many studies have been made of the incidence of twin births. These studies have shown that the incidence of twin births varies among different population groups. Since, to the best of our knowledge, no such studies have been carried out in Turkey, it was felt that an investigation of the subject would be useful. We are, of course, aware that the results of a study of only a sample of the population living in Ankara may not necessarily reflect the actual nation-wide incidence of twin births in Turkey. During a previous study, however, it was found that the inhabitants of Ankara represent a fairly good cross-section of the Turkish population as a whole. For this reason, and because of the fact that about 80 per cent of the mothers in the study were either from Ankara or the provinces near Ankara, it is felt that the results reported here are valid at least for Central Anatolia (Figure 1).

Material and Method

This study was carried out at the Ankara Maternity Hospital between March 15, 1965 and January 2, 1966. During this period 10,000 babies were born, including 149 twin births. In 117 of the 149 twin births, the placentas were examined by one of the authors (E. G.) to determine the number of placentas, chorions and amnions. In 32 cases, the placentas were discarded before they could be examined. The results were recorded on special cards, along with other useful information such as the sex of the twins, birthdates and birthplaces of the parents, the number of children in the family and the number of previous twin births in the family. A specimen of cord blood was obtained for testing the following blood groups : A, A_1, B, O, D, C, E, c, e, MNS, Kell and Duffy. The blood grouping was done by conventional tube technique. Microscopic study

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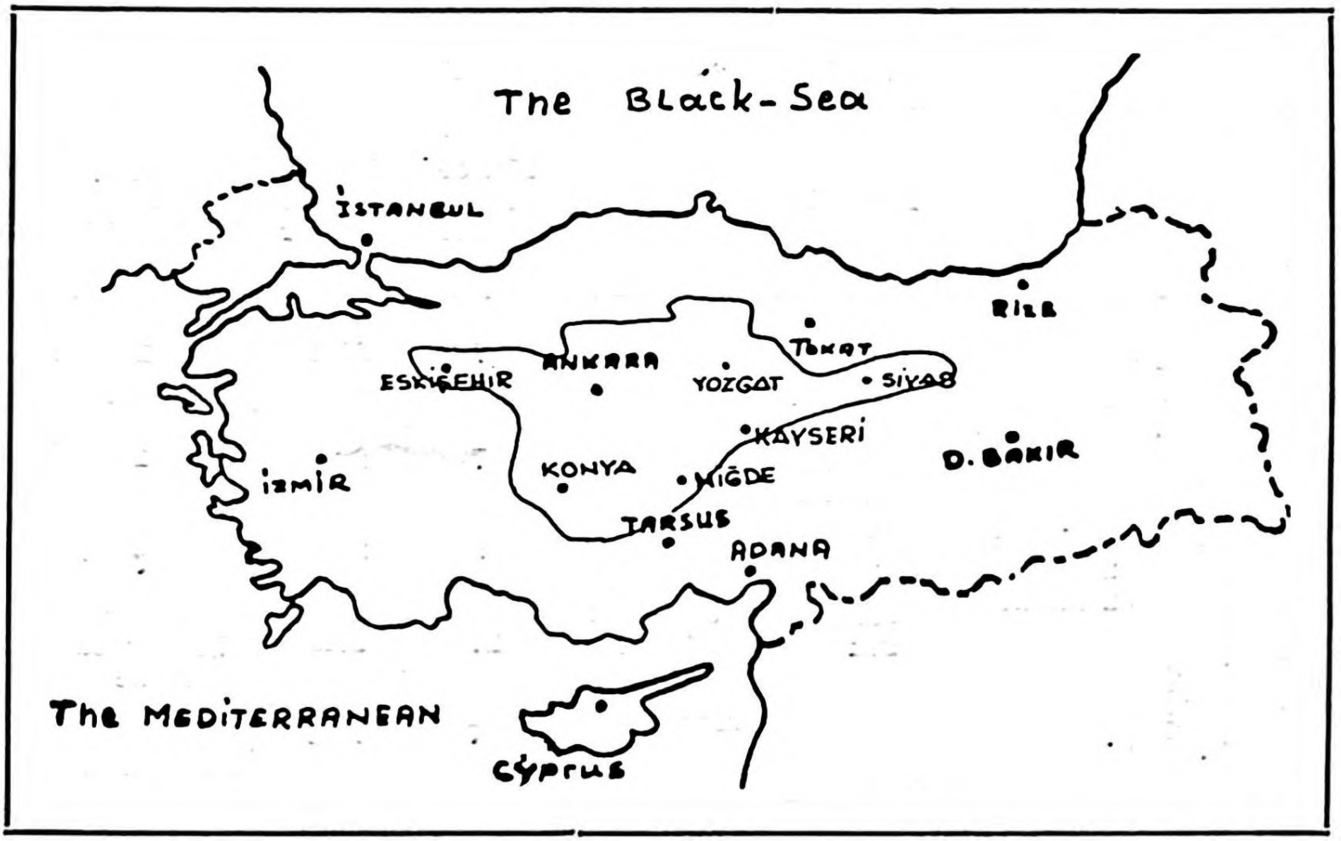

Figure 1. Map showing the area of Central Anatolia from which 80 per cent of the subjects for this study came.

of the specimen was done when the tube test revealed no agglutination macroscopically.

Results

The incidence of twin births in 10,000 deliveries was 149, or 1.49 per cent. Among the 117 placentas available for examination, 24 had only one chorion and for all practical purposes these were considered to be monozygotic twins (MZ). Of the 93 pairs of twins with two chorions, 36 were of unlike sex and obviously dizygotic (DZ_2). Among the remaining like sexed twins, blood group studies indicated that they were also dizygotic (DZ_1). In 15 instances no differences could be found between the members of the twin pairs, either by sex or blood group (Table 1).

There were 32 twin pairs whose placentas were not examined. Of these, eight pairs were of unlike sex (DZ_2), 20 were like sexed but had unlike blood groups (DZ_1), and four pairs were of identical sex and blood group.

In summary, among the 149 pairs of twins, the zygocity could not be definitely established in 19 instances (12 per cent) since they were of identical sex and blood group. These twins were probably

TABLE 1

TWIN BIRTHS IN TURKEY

		Placenta			No. of twin births	Mean age of mother	Previous twin births
Examined placentas	Monozygotic twins	1 placenta 1 chorion 1 amnion			7	22.2	1
		1 placenta 1 chorion 2 amnion			17	26	1
	Dizygotic twins	1 placenta 2 chorion 2 amnion	different sex		9	28.2	7
			same sex	different blood group	17	29.9	3 twins belong to same mother
				same blood group	7	24.3	
		2 placenta 2 chorion 2 amnion	different sex		27	27.7	3
			same sex	different blood group	25	27.8	
				same blood group	8	27	
Unexamined placentas			different sex		8	30	none
			same sex	different blood group	20	27.5	
				same blood group	3	24.5	
		One twin of unknown sex			1	—	—
TOTAL					149	26.7	12

monozygotic, but it is possible that some of them may eventually turn out to be dizygotic. They will be studied again within two years with regard to minor blood groups and serum groups.

The mean age of the mothers of monozygotic twins was 25.20 years, and that of mothers of dizygotic twins was 28.67 years. The difference was not statistically significant at the $P<5$ and $P<1$ per cent levels.

There were 12 pairs of twins born previously to families who had dizygotic twins, but only two previous twin births to families who had monozygotic (monochorionic) twins. However, if the remaining 18 families with twins of undetermined zygocity are included here, the difference between the two groups becomes more significant.

Discussion

It is generally accepted that about one birth in 85 to 90 deliveries results in a twin birth. However, if only surviving twins are considered, the number drops to about one in 100 births. As stated before, the frequency of twin births is not uniform throughout the world (Table 2). In Belgium, for instance, twins occur in one out of every 56 births, while in China the rate is only one in 300.

TABLE 2

FREQUENCY OF TWIN BIRTHS IN DIFFERENT POPULATIONS

Country	Per cent
Belgium	1.78
Scandinavia	1.60
Turkey	1.49
United States (Negro)	1.42
Holland	1.33
Germany	1.20
United States (Caucasian)	1.11
Italy	1.11
Australia	1.00
Greece	0.77
Brazil	0.70
Japan	0.60
China	0.33

Previous studies have shown that the difference in the incidence of twin births among different populations reflects variations in the frequency of dizygotic twins; the frequency of monozygotic twins seems to be about the same in different racial and ethnic groups. This indicates that the occurrence of monozygotic twins, about 25 to 33 per cent of all twins, is probably independent of genetic or environmental influences. The incidence of dizygotic twins, however, is higher among older women, and seems to increase also after the second pregnancy, as well as in families with previous twin births.

Among the twins in this study, 108 pairs were dizygotic. If we disregard the possible dizygotics in the group of undetermined zygocity and consider them as monozygotics, it will be found that 28.2 per cent of the twins studied were monozygotic.

Summary

The results of a study of the incidence of twin births in Turkey is presented. It was found that the frequency of twin births in a sample of the population living in or around Ankara is 1.49 per cent. Among the pairs studied, 28.2 per cent were monozygotic.