Acta Genet Med Gemellol 29:237–239 (1980)
The Mendel Institute / Alan R. Liss, Inc.

Short Note

Received 2 April 1980
Final 7 July 1980

Perinatal Mortality in Twins*

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Perinatal mortality in twins is found to vary widely in six developed countries for which national data are available. The influence of factors such as birth weight, maternal age, and parity is examined, but no consistent trend is found.

Key words: Perinatal mortality, Twins, Parity, Birth weight, Maternal age, Age at death

Twin pregnancies being regarded as high-risk pregnancies, the study of perinatal mortality in twins provides a measure of antenatal care and health monitoring. This may explain the vast literature existing on the subject [1–3]. Almost all of these studies are confined to hospital data, however, so that they are not sufficiently representative and the rates they provide are not very useful for the purpose of comparison. The object of this paper is to compare perinatal mortality in twins in the light of a number of related variables, in six countries for which national data were made available through a WHO-sponsored study [4]; Austria, Hungary, New Zealand, Sweden, England and Wales (UK), and the United States (six states).

Twinning frequencies in each of the six countries are shown in Table 1, along with perinatal death rates by birth order. Mortality appears to be highest in Hungary and lowest in the United Kingdom both for first- and second-born twins. Similar observations were reported by Ho and Wu [3].

TABLE 1. Twinning Frequency and Perinatal Mortality Rates

Country	Twinning frequency	Perinatal mortality (%)	
		1st twin	2nd twin
Austria	1:112	103	154
Hungary	1:95	157	204
New Zealand	1:109	68	91
Sweden	1:123	86	114
United Kingdom	1:100	46	62
United States	1:119	81	95

*Based on data provided by the Section on Dissemination of Statistical Information of the World Health Organization.

As regards parity (Table 2), perinatal mortality of twins was lowest in multiparous, but increased in grandmultiparous women, in all countries except Hungary. The relative risk was highest in Austria and lowest in the UK. In the United States the risk to the first twin was approximately double that of the second twin.

When perinatal mortality was analyzed by maternal age (Table 3), widely differing trends were shown by the various countries. The risk of perinatal death was lowest among twins with a birth weight of 2.5–2.9 kg and in this group the difference between first and second twin was also lowest (Table 4). About 90% of those who failed to survive the perinatal period weighed under 2.5 kg (Table 6).

In all the countries under study, the perinatal death rate declined as the time of gestation increased to 37–41 weeks but increased thereafter (Table 5). About 80% of the total perinatal deaths occurred within less than 37 weeks' gestation (Table 6). The median age at death also varied from country to country (Table 7). It was lowest in Sweden and highest in Austria for the first twin, and it was lowest in Hungary and highest in the USA for the second twin.

TABLE 2. Perinatal Mortality and Parity (Rates per 1,000 Live Births)

	Austria		Hungary		New Zealand		Sweden		UK		USA	
Parity	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Primiparas	190	273	165	–	96	118	115	158	59	77	77	167
Multiparas	103	149	162	206	50	67	60	74	35	48	48	82
Grandmultiparas	–	198	154	194	77	96	67	63	48	75	350	152

TABLE 3. Perinatal Mortality and Maternal Age (Rates per 1,000)

	Austria		Hungary		New Zealand		Sweden		UK		USA	
Age in years	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
⩽ 19	142	165	258	281	147	177	97	107	118	132	220	199
20–24	111	171	134	180	69	94	93	124	54	72	45	77
25–29	59	96	161	202	73	96	89	124	38	53	77	83
30–34	86	137	185	219	43	72	68	84	39	59	99	57
35–39	135	216	204	221	62	85	68	34	25	36	91	136
⩾ 40	91	182	174	391	111	111	59	176	36	45	–	–

TABLE 4. Perinatal Mortality and Birth Weight (Rates per 1,000 Live Births)

	Austria		Hungary		New Zealand		Sweden		UK		USA	
Birth weight in kg	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
⩽ 1.4	665	871	715	782	816	880	710	781	Not		600	619
1.5–1.9	200	220	134	225	92	145	121	180	Available		68	94
2.0–2.4	18	45	37	51	13	30	13	75			27	17
2.5–2.9	8	8	12	18	20	20	35	19			21	21
3.0–3.9	–	25	99	35	5	15	33	25			–	62
⩾ 4.0	–	–	333	–	–	–	–	–			–	–

https://doi.org/10.1017/S0001566000007972 Published online by Cambridge University Press

TABLE 5. Perinatal Mortality and Period of Gestation (Rates per 1,000 Live Births)

Period of gestation in weeks	Austria		Hungary		New Zealand		Sweden		UK		USA	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
20	500	1,000	1,000	1,000	1,000	1,000	–	–	Not		1,000	1,000
21–27	1,000	1,000	742	787	1,000	1,000	917	1,000	Available		1,000	1,000
28–36	181	255	248	307	140	171	155	203			102	144
37–40	29	64	23	60	17	31	29	39			32	23
41 +			62	62	59	111	–	43			36	36

TABLE 6. Perinatal Deaths With Low Birth Weight and Short Period of Gestation

Country	Perinatal deaths (%)	
	With birth weight less than 2.5 kg	With period of gestation less than 37 weeks
Austria	95	84
Hungary	97	89
New Zealand	89	77
Sweden	87	80
USA	92	78

TABLE 7. Median Age at Death (in Hours)

Country	1st twin	2nd twin
Austria	19	9.5
Hungary	11	9
New Zealand	9	12
Sweden	8	9
USA	9.5	15

Thus, in conclusion, even in countries of similar socioeconomic levels, the perinatal risk to twins widely varies. As expected, the risk is consistently higher, in the various countries, the lower the birth weight and the shorter the time of gestation. However, no clear relation with maternal age and parity, nor with age of perinatal death, is apparent from the present data.

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https://doi.org/10.1017/S0001566000007972 Published online by Cambridge University Press