INCIDENCE OF CONGENITAL ABNORMALITIES IN LIVERPOOL, 1960-64

BY

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A register of infants with congenital defects born to mothers resident in Liverpool and Bootle has been maintained in the Department of Child Health, University of Liverpool, since January 1, 1960. The aim is to record all infants, live and stillborn, with any congenital defect. Primary notifications are made to the registry soon after the birth of defective

infants. Several supplementary sources of information are available. Final ascertainment is at school entry medical examination (at age 5 to 6 years) in survivors, and at necropsy (unless refused) in those stillborn or dying in early life. Details of the methods of ascertainment and registration have been published elsewhere (Smithells, 1962).

TABLE I
INCIDENCE OF CONGENITAL ABNORMALITIES, LIVERPOOL, 1960-64

Malformation	Number ascertained	Incidence per 1,000 total births	Notes
Anencephaly	286	3.14	Includes iniencephaly Excludes anencephaly and spina bifida occulta
Spina bifida and cranium bifidum ..	306	3.36	
Hydrocephalus without spina bifida ..	50	0.55	
Other central nervous system defects ..	3	—	
Total infants with C.N.S. malformations ..	645	7.07	In addition 42 anencephalics were notified as having spina bifida and 129 cases of spina bifida as having hydrocephalus
Congenital heart disease	459	5.03	Excludes 87 infants notified as having heart murmurs but subsequently found to be normal
Mongolism (Down's syndrome)	130	1.43	
Cleft palate without cleft lip	45	0.49	} Cleft lip with or without cleft palate: 1.05 per 1,000
Cleft lip and palate	57	0.63	
Cleft lip without cleft palate	38	0.42	
Total infants with clefts	140	1.54	
Hypospadias	112	1.23	Probably under-reported
Defects of kidneys and ureters	86	0.94	
Defects of bladder	15	0.16	
Genital tract defects	26	0.28	
Total genito-urinary defects	239	2.62	
Syndactyly and polydactyly	125	1.37	Excludes infants with spina bifida; figure probably unreliable
Talipes	242	2.65	
Congenital "dislocation" of hips	61	0.67	
Other skeletal defects	189	2.07	
Total skeletal defects	617	6.77	
Intestinal obstructions	114	1.25	Includes oesophageal atresia and Hirschsprung's disease; excludes exomphalos, annular pancreas and mucoviscidosis
Exomphalos	33	0.36	Excludes mucoviscidosis
Defects of liver, pancreas and biliary tract ..	13	0.14	
Total alimentary defects	150	1.65	
Defects of ears and related parts	106	1.16	Includes pre-auricular skin tags, branchial cysts, and fistulae Includes micro- and retro-gnathia
Defects of jaw, tongue and pharynx	54	0.59	
Defects of larynx, trachea, lungs and diaphragm	55	0.60	Includes diaphragmatic hernia Figure probably unreliable
Defects of eyes	24	0.26	
Total Defective Infants	2,182	23.9	

This report summarizes the findings in the first 5 years of the study, which continues. Only children born in the first 2 years of this period (1960–61) have reached school age, but experience has shown that the number of previously undetected defects found at school entry is very small and does not significantly affect incidence figures.

The survey covers both hospital and home deliveries and is therefore a true population study. The total number of births in the survey area in 1960 to 1964 inclusive was 91,176. The incidence of the main defects and groups of defects is shown in Table I.

DISCUSSION

There is no satisfactory or agreed definition of a congenital defect and comparisons of total incidence reported from different centres are therefore of limited value. The figures here reported do not include undescended testicles, hydroceles, hernias (other than diaphragmatic), birth marks, mental defect, or defective vision or hearing. Comparative incidence of individual defects are of more value provided that clear definitions are given (e.g. whether spinal cord defects include those with associated anencephaly).

The only published British study comparable in size and method to the Liverpool series is that of McKeown and Record (1960) from Birmingham; their figures for 56,760 births in 1950 to 1952 with a 5-year follow-up are compared with the Liverpool figures in Table II.

There is a remarkable similarity between the Liverpool and Birmingham figures for the incidence of malformed infants. So far as individual lesions are concerned, the only striking difference is in anencephaly and spina bifida, both of which are appreciably more common in Liverpool. The periods covered by the two surveys are not identical, but the incidence of anencephaly and spina bifida in Birmingham was rather lower in 1960–64 than in 1950–54 (Leck, 1966).

TABLE II
INCIDENCE OF CERTAIN CONGENITAL DEFECTS
PER 1,000 TOTAL BIRTHS, WITH 5 TO 6 YEAR FOLLOW-UP

Defect	Liverpool, 1960–64 (91,176 births)	Birmingham, 1950–52 (56,760 births)
Anencephalus	3.14	1.96
Spina bifida (without anencephalus)	3.36	2.58
Hydrocephalus (without spina bifida, etc.)	0.55	1.42
Mongolism	1.43	1.69
Congenital heart disease	5.03	4.18
Cleft lip (± cleft palate)	1.05	—
Cleft lip and/or palate	1.54	1.94
All Malformed Individuals ..	23.90	23.98

The Liverpool data will be presented in detail elsewhere.

SUMMARY

The incidence of congenital malformations in Liverpool and Bootle in the 5 years 1960 to 1964 is presented in summary. Comparison is made with an earlier population survey in Birmingham. The proportion of infants malformed is similar but the incidence of neural tube defects is higher in Liverpool.

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