SESSION I

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Tuberculosis in Brent

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Summary

An analysis has been made of the problem of tuberculosis in the Borough of Brent.

There have been changes in the population structure, the groups from which cases are drawn and the types of disease.

There has been an increase in the incidence of tuberculosis in immigrants of African and Asian origin, with more non-pulmonary disease.

Pulmonary disease in these groups has different clinical characteristics from those of disease in natives of the British Isles.

Introduction

This symposium begins with an introduction to the problem we have in the Borough of Brent so that you may see why there is a particular local interest in the subject of tuberculosis. We have analysed a total of 939 newly-diagnosed cases of tuberculosis, 415 seen in 1964 and 65, and 524 seen in the 3 years 1968-70. During this time the population of the Borough has been static at approximately 283,000, and the number of cases of tuberculosis has fallen slightly from about 200 new cases a year to 170. However, within this overall pattern of a slightly declining incidence and a static total population there have been several major changes. The population structure has changed, the groups from which our cases are drawn have changed, and the types of disease we are seeing have also changed.

It has been very difficult to obtain accurate figures for our population. The 1966 one-in-ten sample census underenumerated total immigrants by about 2%, those from the Caribbean by about 12%, and those from Asia by about 5%, and we therefore corrected the population totals accordingly. In 1966, 80% of the population were born either in the United

Kingdom or Eire, 8% came from Caribbean countries, 1% from Africa, 3% from Asia and the remaining 8% from a wide variety of other countries, mainly in Europe. In 1970, the Local Authority's estimates are that those born in the United Kingdom and Eire now form only 76% of the population, while the proportion of those of Caribbean origin has risen to 11% and those of Asian origin to 4%.

The importance of this change in population structure is shown in Table 1, giving a breakdown of our cases of tuberculosis by country of origin. In 1965-65 the greater proportion of our work (64% of the cases) was in patients born in the United Kingdom or Eire. By 1970 only 33% of the patients were from Britain and Eire. The number of cases in patients of Asian origin had increased from thirty-two in 1964 to sixty-nine in 1970, when, although this group comprised only 4% of the population, it produced 40% of the cases. On the other hand, the number of cases of tuberculosis in our Caribbean population has shown a pattern of decline similar to that of the local born population.

TABLE 1. Country of origin of the 939 cases of tuberculosis

Area of origin	1964		1965		1968		1969		1970	
	No.	%	No.	%	No.	%	No.	%	No.	%
Britain	90	41	84	43	62	36	63	34	35	21
Eire	53	24	40	20	26	15	30	16	21	12
Europe	13	6	13	7	9	5	5	3	4	2
Caribbean	15	7	26	13	10	6	10	5	12	7
Africa	16	7	6	3	7	4	23	13	24	14
Asia	32	15	27	14	57	33	50	27	69	41
Other	0	0	0	0	0	0	3	2	4	2
Total	219		196		171		184		169	

When analysis of type of disease is undertaken further changes in pattern become apparent. There has been a striking decline of cases of pulmonary

tuberculosis (Table 2) in patients born in the British Isles from 125 to forty-five, with a parallel decline in the Caribbean group. The number of cases of pulmonary disease in patients of African and Asian origin have however shown little change. For non-pulmonary tuberculosis there has also been a decline in incidence among those born in the British Isles; the numbers in the Caribbean groups have probably not changed to an important extent, but there has been an enormous increase in the numbers of non-pulmonary tuberculosis in those of African or Asian origin, from three in 1964 to thirty-seven in 1970.

TABLE 2. Analysis of pulmonary and non-pulmonary tuberculosis according to year of diagnosis and country of origin

Area of origin	1964	1965	1968	1969	1970
Pulmonary					
Britain } Eire	125	114	77	81	45
Caribbean	14	21	7	7	8
Africa } Asia	45	31	31	45	56
Non-pulmonary					
Britain } Eire	18	10	11	12	11
Caribbean	1	5	3	3	4
Africa } Asia	3	2	33	28	37

The rise in numbers of cases of non-pulmonary tuberculosis has also been accompanied by a diversification of the disease sites (Table 3). Of the 219 cases in 1964, 196 were pulmonary, and other sites were rarely affected. In 1968, 69 and 70, cases of meningitis, pericarditis, peritonitis, disease in the alimentary tract, skin and breast appear.

TABLE 3. Distribution of all cases of tuberculosis by site

Site of tuberculosis	1964	1965	1968	1969	1970
Lungs	196	176	121	138	115
Glands	10	7	32	27	35
Bone	6	1	6	7	6
Genito-urinary	7	10	9	4	4
Meningitis	0	2	1	3	0
Peritonitis	0	0	3	3	2
Breast	0	0	0	2	0
Caecum	0	0	0	0	4
Skin	0	0	0	0	2
Pericarditis	0	0	0	0	1
Total	219	196	171	184	169

The development of tuberculosis in immigrants has clearly been an important problem in our community. About half of the cases in immigrants present within 5 years of entry into this country (Table 4). This proportion was particularly high for immigrants from Africa and Asia (85 and 76% respectively) in 1964-65, and had not decreased by 1968-70, as it had in all the other immigrant groups.

TABLE 4. Numbers of cases of pulmonary tuberculosis in immigrants diagnosed within 5 years of entry to this country

Area of origin	Cases in 1964-65			Cases in 1968-70		
	Total*	Within 5 years of entry		Total*	Within 5 years of entry	
		No.	%		No.	%
Eire	69	36	52	65	19	29
Europe	21	7	33	16	3	19
Caribbean	30	10	33	28	4	14
Africa	20	17	85	55	47	85
Asia	46	35	76	162	112	69
Other	0	0	0	6	1	17
Total	186	105	56	332	186	56

* With known interval since entry.

In addition to these details of the cases of tuberculosis in immigrants, we also have some information on the tuberculin sensitivity of immigrants who attended the Chest Clinic in 1968-70 but who were diagnosed as not suffering from tuberculosis. All immigrants who attend within 2 years of entry are routinely given a Heaf test at the Clinic. The results have been classified by area of origin and by age. All immigrant groups showed similar proportions of positive results (including Heaf grade 1). At ages 15-24 years about 65% were positive, rising to 88% above age 35 (Table 5).

Analysis of the patients with pulmonary disease (Table 6) shows that in the immigrants the disease tends to be less extensive and the sputum tends to be negative. Despite the decline in the total number of patients born in the United Kingdom and Eire, the numbers of these patients with extensive sputum-positive disease remain high.

The available information on tuberculosis case rates is summarized in Table 7. As already explained, there is some uncertainty about the population numbers on which these rates are based. The incidence in the Caribbean population was similar to that in the British population throughout the period, but in the African and Asian groups the incidence was seven times higher in 1964-65 and twenty to twenty-eight times higher in 1968-70, than the British rate.

Our results thus document a substantial increase in the incidence of tuberculosis in immigrants of African and Asian origin, with a greater variety of site of disease and a marked increase in non-pulmonary disease. These more vulnerable immigrant groups do not appear to be characterized by a higher incidence of tuberculin positivity in the absence of clinically diagnosed tuberculosis, and when they do develop pulmonary disease it tends to be less extensive and less often to be sputum-positive than in the British born. They are also the

TABLE 5. Results of Heaf tuberculin tests in recent immigrants without tuberculosis

Area of origin	Age (years)								
	15-24			25-34			35 or more		
	No. tested	Positive No.	Positive %	No. tested	Positive No.	Positive %	No. tested	Positive No.	Positive %
Eire	46	31	67	10	4	40	4	3	75
Europe	18	12	67	6	5	83	3	3	100
Caribbean	9	4	44	4	3	75	1	0	0
Africa	69	46	67	36	27	75	31	24	77
Asia	76	54	71	47	34	72	66	62	94
Other	15	5	42	4	3	75	3	3	100
Total	233	152	65	107	76	71	108	95	88

TABLE 6. Cases of pulmonary tuberculosis according to extent and sputum positivity

Area of origin	Sputum-negative				Sputum-positive			
	Extent of disease				Extent of disease			
	1		2 or 3		1		2 or 3	
	1964-65	1968-70	1964-65	1968-70	1964-65	1968-70	1964-65	1968-70
Britain	54	46	18	19	25	14	60	63
Eire	28	10	5	7	9	10	34	34
Europe	11	3	1	1	5	1	5	7
Caribbean	18	12	1	0	4	3	11	7
Africa	12	15	2	4	1	7	5	8
Asia	25	47	6	6	8	19	13	26
Total	148	133	33	37	52	54	128	145

Table 7. Relative incidence of tuberculosis in immigrant groups

	1964-65				1968-70			
	Estimated population*	Cases of tuberculosis	Annual rate/1000	Ratio to British rate	Estimated population*	Cases of tuberculosis	Annual rate/1000	Ratio to British rate
British (including Eire)	226,500	267	0.30	1	216,700	237	0.36	1
Caribbean	22,700	41	0.44	1	32,500	32	0.31	1
Africa	2700	22	2.04	7	2500	54	7.20	20
Asia	7600	59	1.97	7	9000	176	6.52	28
Other	23,920	26	0.27	1	23,000	25	0.35	1

* See Introduction, p. 691.

more recent immigrant population groups. It seems likely that in these groups there is a higher incidence of breakdown of pre-existing lesions, and possibly of infection of the remaining susceptible members of the population. We have no information as to which of these is mainly responsible for our clinically diagnosed cases, nor about the factors leading to breakdown of pre-existing lesions. Presumably the social stresses of the least privileged immigrant

groups are important and perhaps also dietetic factors which tend to lower resistance.

Whatever the full explanation, we live in Brent with a small epidemic of tuberculosis. We are not as yet adequately identifying the groups at risk or adequately seeking our cases amongst them. But we hope that this identification of our problem will help us to tackle it more effectively.