Breast cancer in blacks, Asians and whites in Birmingham

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Summary

A retrospective study was mounted into the frequency of breast cancer in blacks, whites and Asians attending Dudley Road Hospital in the years 1970-1981 inclusive. This figure was compared with the ethnic distribution of the surrounding population and of admissions for all causes. Breast cancer was uncommon in both ethnic minorities compared with whites, but was commoner in blacks than in Asians. These trends are similar to the World Health Organization figures for Britain, Jamaica and India. Differences in parity and breast feeding do not explain the variability of breast cancer in this study.

KEY WORDS: breast cancer, blacks, whites, Asians

Introduction

Breast cancer is the commonest cancer in women in the western nations and affects approximately 6% of the female population of Britain at some time during their life. Despite screening programmes and advances in treatment, the annual death rate for breast cancer has risen over the past 10 years from 10000 to over 12000 per year. The modest improvements in early detection and relative survival rates have been offset by an increasing age-specific incidence rate, so that the age-adjusted mortality ratios remain virtually unchanged.

Epidemiological studies have shown marked geographical variations of breast cancer, the incidence being 6 times higher in northern Europe and North America compared with Japan (Doll, Muir and Waterhouse, 1970). However, by comparing mortality rates for breast cancer in immigrants to the United States with the rates in their countries of origin, cultural patterns appear to have more influence than race in the development of the disease (Buell, 1965). Studies on Japanese immigrants to the United States

show an increased mortality with successive generations towards the level of the adopted country.

It was initially thought that breast feeding had a protective effect against breast cancer, but this effect is probably due to earlier age of first pregnancy and increased parity rather than lactation alone (Adam *et al.*, 1980). There is an increased risk of breast cancer in women with an early menarche and also with a late natural menopause (MacMahon, Cole and Brown, 1973). Positive family history of breast cancer suggests that there may be a genetic factor (Anderson, 1974). There is also evidence that diet may play a role, as a weak association has been shown between those developing breast cancer and intake of total and saturated fats (Carroll, 1975).

Not only are there large variations in world-wide incidence rates, highest in Hawaii and lowest in rural Japan, but there are also differences between regions even in the United Kingdom, although there is no clear urban-rural gradient. The international incidence figures published by the World Health Organisation show that the population of Asia and the West Indies have lower incidence rates compared with Europeans. We have investigated the incidence of breast cancer amongst Asian and black immigrants in comparison with whites in Britain. There are no ethnic national figures for breast cancer available in Britain, but immigrants form roughly one-fifth of the population of the catchment area of this hospital.

Methods

A retrospective study was conducted using the Hospital Activity Analysis (HAA) for the 12-year period 1970 to 1981, taking all new female admissions aged 30 years and over to Dudley Road Hospital. All cases of breast cancer (ICD Code 174, 8th Revision), as the principal, first, second and third diagnosis, were included. The HAA forms do not record ethnic origin so we used place of birth as a

marker of ethnic group. In previous studies, this has been shown to be a reliable guide to ethnic origin in those aged 30 years and over, and, in the records examined during this study, no false positives or negatives were found. In only 1.6% of all breast cancer cases was place of birth not recorded. Caucasians were taken from those born in the United Kingdom or Eire. Patients born in the West Indies were recorded as black and those from India, Pakistan and Bangladesh as Asian.

The catchment area of Dudley Road Hospital is approximately 375000 although this has decreased by about 10000 over the 12 years of the study, but there has been a slight increase in the number of Asian and black people (figures obtained from the Central Statistical Office for 1978). The overall incidence rate for breast cancer in this area was calculated, together with figures for the rates in the three ethnic groups. All hospital records for the Asian and black patients with breast cancer and 50 randomly selected cases from the Caucasian group were examined.

Data were not available in the breast cancer patients on the various risk factors, including age at first pregnancy and frequency of breast feeding. A parallel study was, therefore mounted into the age, parity and breast feeding habits of all women attending the obstetric department during 1979. Thus, some idea could be obtained of the risk factors in the three ethnic groups.

Results

There was little variation in the number of new cases per year or in the ethnic distribution during the study period (Table 1). The age distribution at presentation of our group was similar to that for all patients presenting in the West Midlands with breast cancer (Waterhouse, 1974), 38% being over the age of 65 years. However, there were only 3 Asian and 5 black cases over the age of 65 years.

TABLE 1. Ethnic distribution of breast cancer cases recorded over 12-year period (1970-1981) in women of all ages

	1970-1974	1974-1979	1980-1981	Total
Caucasian	316	386	113	815
Asian	7	7	3	17
Black	10	11	9	30
Others	18	2	1	21
Total	351	406	126	883

The ethnic distribution of admissions to Dudley Road Hospital (excluding obstetrics) closely mirrors the ethnic breakdown of the catchment area (Table 2). There were fewer cases of breast cancer in either ethnic minority when compared with whites; how-

ever the disease was commoner in blacks than Asians, although Asians outnumbered blacks in the study population.

Asians and blacks presented at an earlier age compared to Caucasians but had more advanced disease (Table 3). Sixty-six percent of Asians and 48% of blacks had stage three or four cancers at presentation, compared with only 33% in the Caucasians. The figures for whites are similar to those of the Birmingham Cancer Registry (which includes all ethnic groups), where 33.9% of cases had stage three or four cancers at presentation. There was no apparent difference in the histological types of breast cancer in any of the 3 groups.

We studied the age, parity and breast feeding habits among 3996 mothers attending the obstetric department at Dudley Road Hospital during 1979 (Table 4). Approximately one-third of the Asian and Caucasian population had their first child under the age of 20 years, this figure being nearly half that of the black population. Asian immigrants also tend to have larger families, 18% having 5 or more children, but surprisingly under one-third breast-fed compared with nearly half the Caucasians and 80% of the blacks.

Discussion

Our study provides unique data on breast cancer among immigrant populations because of the large number of Asians and blacks living in this catchment area and the high proportion of admissions that were coded by place of birth. The age standardized incidence rate for breast cancer is 52.0 per 100000, and is similar to that of the Birmingham Cancer Registry which serves about one-tenth of the population of Great Britain, and registers about 95% of cases. The truncated incidence rate for women aged 35-64 years was 59.8 per 100000. This figure is lower than expected, and may be due to a large proportion of patients either under the age of 35 or over 65 years.

The incidence of breast cancer among Asian and black immigrants is low compared to that of the Caucasians and is similar to the rates in their countries of origin. There is no reason to suspect that selection may have occurred with Asians and blacks seeking medical advice outside the catchment area, although there could have been cultural barriers which prevented early presentation.

It has been proposed that higher parity influences not only the risk of breast cancer, but also lowers the age of presentation (Woods, Smith and Morrison, 1980). The mean age at presentation for all age groups in the Caucasians was older than the blacks and the Asians. None of the Asians and only 4% of the blacks were nulliparous at presentation compared to 15.3% of the Caucasians. Furthermore, a quarter of

TABLE 2. Ethnic distribution of the population of Dudley Road Hospital catchment area, and of all admissions aged 30–64 years, compared with ethnic distribution in women with breast cancer (1970–1981)

	Catchment area population male and female (Total 375000)	Female admissions, age 30–64 years (Total 32100)	Breast cancer cases (Total 551)
Caucasians (%)	79.0	75.5	89.5
Asians (%)	11.2	10.3	2.5
Blacks (%)	9.6	7.9	4.5
Others (%)	0.2	6.3	3.5

TABLE 3. Age and parity and staging of breast cancer patients at presentation (all ages)

	Mean age (years)	Parity			Stage of breast cancer			
		0	1–4	>5	I	II	III	IV
Caucasians (%)	60.7	15.3	76.5	8.2	46	21	16	17
Asians (%)	48.3	0	75	25	27	7	20	46
Blacks (%)	49.0	4	84	12	28	24	32	16

TABLE 4. Ethnic distribution, age and parity of 3996 mothers attending Dudley Road Hospital

	Number	Percentage <20 years	Breast feeding (%)	Parity (%)		
				0	1–4	>5
Caucasians	1687	36.6	45	47	40	3
Asians	1780	38.5	31	22	60	18
Blacks	415	60.5	82	41	52	7
Other	114	—	—	—	—	—

the Asians with breast cancer had 5 or more children compared with under a tenth of the Caucasians. It would appear here that the high parity in Asians is associated with an earlier age of presentation and more advanced disease. In view of the small number of breast cancer cases among the ethnic minorities, it is difficult to draw any firm conclusions, although if a breast screening programme is to be established among a community with a high immigrant population, it should probably be aimed at a lower age group.

The Asian population appear to be adopting a more westernized life-style in obstetric practise, with a rising age at first birth and decreasing frequency of breast feeding. These trends are not seen in the black population. How much these cultural changes will affect the incidence of breast cancer remains to be seen.

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