Primary and secondary care management of women with early breast cancer from affluent and deprived areas: retrospective review of hospital and general practice records

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Abstract

Objectives To investigate whether poorer survival of breast cancer among deprived women compared with affluent women is related to their NHS care.
Design Retrospective review of hospital and general practice case records.
Setting Greater Glasgow Health Board area.
Subjects Women diagnosed with breast cancer in 1992-3 who lived in the most affluent (deprivation categories 1 and 2) and the most deprived areas (deprivation categories 6 and 7) of Glasgow (Carstairs and Morris deprivation index).
Main outcome measures Breast cancer treatment, time from general practice consultation to clinic visit and surgery, and details of hospital admissions and follow up in primary and secondary care.
Results The access to care and surgical and oncological treatment of women from affluent and deprived areas were similar. Admissions to hospital for problems not related to breast cancer were more common in those living in deprived areas (number admitted once or more: 51 (24%) *v* 13 (10%), P = 0.001). Consultation patterns in general practice by the second year after diagnosis showed women in deprived areas consulting more frequently than women in affluent areas (median (interquartile range) number of consultations (5 (2-10) *v* 7 (4-13), P = 0.01).
Conclusion Women living in affluent areas did not receive better NHS care for breast cancer than women in deprived areas. However, women from deprived areas seem to have greater comorbidity, and poorer outcomes from breast cancer among these women is probably due to factors which result in deprived communities having poorer health outcomes rather than to management of their breast cancer.

Introduction

Affluent women have a higher incidence of breast cancer than socially deprived women.[1] Several studies have shown deprived women to have poorer survival from breast cancer.[2–6] Two of these studies also investigated the relation of socioeconomic status to pathological prognostic factors at presentation and found no association.[5 6] Our study of pathological prognostic factors at presentation confirmed these findings for women with early breast cancer.[7] If pathological staging is not associated with the poorer outcome of deprived women, the question arises whether poorer outcome is the result of differing care and treatment of breast cancer among women from deprived and affluent areas.

Previous work has shown differences in the management of women with breast cancer—for example, between teaching and non-teaching hospitals[8 9] and between specialists and non-specialists.[10–12] We investigated differences in management between women of differing socioeconomic status by detailed analysis of hospital and general practice records.

Subjects and methods

The West of Scotland Cancer Surveillance Unit identified all women resident in the Greater Glasgow Health Board area in whom invasive breast cancer was diagnosed in 1992 (447 cases) and 1993 (374 cases). From this population, women were identified who lived in areas at either end of the deprivation spectrum and who were under 75 years at time of diagnosis. The Carstairs and Morris area based deprivation index was used to define deprivation (affluent: deprivation categories 1 and 2; deprived: deprivation categories 6 and 7).[13] Ethical approval was obtained from the Greater Glasgow Health Board local medical ethics committee.

In order to document fully the treatment received from the NHS by women with breast cancer, we collected data from both hospital and general practice records. Hospital records were reviewed in five hospitals to obtain information about treatment received, including breast surgery (conservation surgery or mastectomy), axillary surgery (sampling or clearance, as defined by the surgeon), and whether the women received adjuvant radiotherapy, chemotherapy, or endocrine therapy. Access to care was investigated by examining delays in the process of care after presentation, length of inpatient stays, and number and nature of outpatient visits.

We identified general practitioners of individual patients from hospital case records and contacted practices to ask permission to review case records. Data collected included details at presentation and consultations with general practitioner in the 12 months before

diagnosis and in the first and second 12 months after diagnosis.

Analysis

We analysed the data using SPSS software. Associations between treatment options and whether women lived in affluent or deprived areas were examined by χ^2 tests. The relations of time to treatment and consultation frequency to deprivation were analysed by Mann-Whitney tests.

Results

In 1992 and 1993, 421 women were diagnosed with breast cancer in the deprivation categories being studied. Of these, 158 (38%) lived in deprivation categories 1 and 2 (affluent) and 263 (62%) in deprivation categories 6 and 7 (deprived); 417 hospital records were examined (99%). We present here data for women who had early breast cancer (146 women from affluent areas and 220 women from deprived areas). The general practitioner was known for 327 women in 138 practices; 278 (86%) of these records were examined (table 1).

Table 1 Numbers of hospital and general practice records examined of women with breast cancer diagnosed in 1992 and 1993 and living in affluent or deprived areas

	Affluent (n=158)	Deprived (n=263)	Total (n=421)
Hospital:			
Records requested	158	263	421
Records seen	157	260	417
Diagnosis of primary breast cancer	146	220	366
Diagnosis of locally advanced or metastatic breast cancer	10*	40	50
General practice:			
Records requested†	134	193	327
Records seen	110 (82%)	168 (87%)	278 (85%)

*One woman presented with breast cancer and ovarian cancer simultaneously and is omitted from table.
†39 records were not requested because the women had moved out of the area or their general practitioner was unknown.

Table 2 Access to care for breast cancer as measured by number of days from general practitioner's referral letter to clinic visit, from first clinic visit to surgery, and inpatient stay at time of initial surgery for women living in affluent and deprived areas

	Affluent		Deprived		
	No of women	Median (interquartile range) delay (days)	No of women	Median (interquartile range) delay (days)	Mann-Whitney test
Time from referral letter to clinic visit*	117	6 (1-13)	183	7 (4-20)	Z=–2.72 P=0.006
Time between first clinic visit and surgery*	129	16 (9-24)	203	17 (10-25)	Z=–1.53 P=0.13
Length of hospital stay at time of initial surgery	142	7 (5-8)	215	6 (5-8)	Z=–1.04 P=0.29

*Data presented only for women with available referral letter.

Table 3 Surgical treatment, radiotherapy, and adjuvant therapy received by women living in affluent and deprived areas

	No (%) in affluent area (n=146)	No (%) in deprived areas (n=220)	χ^2 test result
Breast surgery*:			
Mastectomy	64 (45)	104 (48)	χ^2=0.37, df=1 P=0.54
Conservation	78 (55)	111 (52)	
Axilla surgery†:			
Clearance	123 (95)	146 (74)	χ^2=23.73, df=1 P<0.0001
Sampling	6 (5)	50 (26)	
Radiotherapy	54 (37)	90 (41)	χ^2=0.56, df=1 P=0.45
Chemotherapy	29 (20)	30 (14%)	χ^2=2.51, df=1 P=0.11
Endocrine therapy	128 (88)	196 (89)	χ^2=0.17, df=1 P=0.67

*3 women had no surgery and in 6 cases the procedure was unclear from the hospital records.
†37 women had no axillary surgery and in 4 cases the procedure was unclear.

Access to care

Time between the date of the general practice consultation and the date on the referral letter did not differ between women living in affluent and deprived areas (affluent: median 1 day, interquartile range 0 to 2.7; deprived: median 0 day, 0 to 4; $Z = -0.34$, $P = 0.74$). Only four women received private care. The time between the date of the referral letter and the first clinic visit was one day shorter in women from affluent areas (table 2). There was, however, no significant difference between the groups in the time from clinic visit to surgery or in number of days spent in hospital at the time of original surgery.

Treatment

There were no differences in the type of breast surgery between women living in affluent and deprived areas (table 3). However, more women living in deprived areas had axillary sampling rather than axillary clearance. No significant differences were detected between women living in affluent and deprived areas with respect to radiotherapy, chemotherapy, or endocrine therapy (table 3).

Follow up

The number of hospital clinic visits was not significantly different between women living in affluent and deprived areas (mean (SD) number of visits 7.63 (2.76) for women from affluent areas and 7.98 (3.14) for women from deprived areas, $t = 1.10$, $P = 0.27$) in the first two years after diagnosis. The proportion of women requiring extra clinic appointments before the scheduled appointments did not differ between the groups. Although the numbers are small, significantly more patients from deprived areas failed to attend appointments (6 (4%) *v* 25 (12%), $\chi^2 = 5.65$, $P = 0.017$).

Most women had consulted their general practitioner in the year before diagnosis, but there was no difference between those living in affluent and deprived areas (92 (86%) *v* 141 (88%), $\chi^2 = 0.26$, $P = 0.61$). In the 12 months after diagnosis, all women consulted more often than before diagnosis, but women living in deprived areas consulted more frequently than women living in affluent areas (table 4). The frequency of consultations in the second year after diagnosis was still greater than before diagnosis, with women in deprived areas continuing to consult more often than women in affluent areas. This difference was particularly striking in women who consulted more than once a month. During the first year after diagnosis, 31 (29%) women living in affluent areas consulted their general practitioner more than once a month, compared with 67 (41%) women living in deprived areas ($\chi^2 = 4.49$, df = 1, $P = 0.034$). In the second year after diagnosis, 17 (16%) women living in affluent areas were continuing to consult more frequently than once a month compared with 41 (27%) women living in deprived areas ($\chi^2 = 4.44$, df = 1, $P = 0.035$).

Table 4 Number of general practice consultations before and after diagnosis of breast cancer for women living in affluent and deprived areas

	Affluent		Deprived		
	No of women	Median (interquartile range)	No of women	Median (interquartile range)	Mann-Whitney test
Year before diagnosis	107	4 (1-7)	160	5 (2-8)	Z=–1.88, P=0.06
1st year after diagnosis	108	10 (5-13)	162	11 (6-16)	Z=–2.03, P=0.04
2nd year after diagnosis	107	5 (2-10)	152	7 (4-13)	Z=–2.49, P=0.01

In the first two years after the end of initial treatment, there was no difference in hospital admissions for problems related to breast cancer between women from affluent and deprived areas (number admitted once or more: 13 (10%) *v* 34 (16%), $\chi^2 = 2.62$, df = 1, P = 0.106). However, women from affluent areas were less likely to be admitted than women from deprived areas (13 (10%) *v* 51 (24%), $\chi^2 = 11.1$, df = 1, P = 0.001) for problems unrelated to breast cancer.

Discussion

We found no difference in access to hospital care or in surgical and non-surgical management of women from affluent and deprived areas with breast cancer, but women in deprived areas had more hospital admissions with problems unrelated to breast cancer and a higher general practitioner consultation rate, indicating that these women had a greater degree of comorbidity.

Our sample size was limited as we included only women under 75 years who lived in deprivation categories 1, 2, 6, or 7 and who had breast cancer diagnosed in 1992 or 1993. The decision to limit numbers in this way was pragmatic. It allowed detailed data from hospital (general and oncology) and general practice records to be collected by one researcher (UM), thus ensuring uniformity, and reduced the possibility of bias from changes in management.

Collecting data from general practice records was problematic as record keeping is not consistent between practices. Some practices were reluctant to participate, and we were able to examine only 86% of general practice records. Although the study was retrospective, the retrieval of hospital records was excellent, even for deceased patients.

Access to care

The largest component of delay between noticing symptoms and attendance at hospital clinic has been suggested to be patient delay.[14] Although we are unable to comment on any delay before consultation in primary care, there was no significant delay in referral after presentation to general practitioners. The significant difference in the number of days between referral and clinic visit probably occurred because the hospital where many of the patients from affluent areas were seen had two clinics for new patients each week, whereas the other four hospitals had one clinic a week. In any case, the difference was not clinically important and did not cause a delay in surgery.

The numbers of days spent in hospital at the time of surgery were also similar. A study in south east England found that more women from deprived areas are admitted as emergencies and that more women from affluent areas are admitted as day cases.[15] Information on emergency admissions is not available from our study, but the women from affluent areas did not have a shorter stay than those from deprived areas. Our data do not support the suggestion by Pollock and Vickers that "primary care is failing patients from deprived areas."[15]

Treatment

We found no difference in the hospital management of women living in affluent areas and deprived areas in terms of type of breast surgery performed or whether they received radiotherapy, chemotherapy, or endocrine therapy. These results suggest that socioeconomic status was not a factor in these decisions.

We did, however, find a difference between the two groups with respect to axillary surgery. Closer inspection of the data shows that although axillary clearance was the operation of choice throughout the city, in one hospital almost half of axillary procedures were described as sampling (clearance 31 (52%), sampling 29 (48%)). This hospital saw women only from deprived areas, thus confounding the results. Since this study the variation has been eliminated, with more than 90% of women with breast cancer having axillary clearance (H Burns, personal communication, 1999) in keeping with recommendations in several recent clinical guidelines.[16–18]

Follow up

We found no differences between women living in affluent and deprived areas in terms of the total number of times seen at clinic. Although the numbers are small, more patients from deprived areas seemed to fail to attend appointments. This may relate to ease of access to hospital rather than lack of concern about follow up.

Analysis of the number of hospital admissions in the two years after diagnosis of breast cancer showed that admissions to hospital for conditions unconnected with breast cancer were more common in women living in deprived areas than among women from affluent areas. Consultations in primary care in the two years after diagnosis were greater for all women than before diagnosis, but were greatest for women living in deprived areas. Both the greater admission rate to hospital for conditions unrelated to breast cancer and the higher consultation rate in general practice may be an indication of greater comorbidity in women from deprived areas. This may explain the poorer survival figures that have been reported for all causes.[19]

Conclusion

The only differences in the management of women from affluent and deprived areas identified in this study could be explained by differences in hospital policy or were unlikely to have any significant impact

What is already known on this topic

Breast cancer is commoner in affluent than deprived women

Survival, however, is greater among women from affluent areas than those from deprived areas

This is not explained by pathological stage at presentation

What this study adds

Access to hospital care for breast cancer is not related to social status

The NHS delivers health care equitably to women with breast cancer who live in affluent and deprived areas

Poorer survival of women living in deprived areas may be related to the presence of more comorbidity in deprived areas

on outcome. The NHS (in Glasgow, at least) seems to deliver health care equitably to women with breast cancer. The poorer survival of women from deprived areas with breast cancer may not be due to their breast cancer or its management but to other factors which result in deprived women (and also men) having a reduced life expectancy compared with affluent groups.[19] In particular, the relation of comorbidity and deprivation requires further investigation.

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Listening to the patient

Such is the rich diversity of culture in Britain today, that it is likely that most doctors will at some time use the services of an interpreter. It is likely that psychiatry relies most on the effective use of interpreters—after all, language and communication are essential components of a psychiatrist's trade.

Although the advantages of having an interpreter are obvious, there are also pitfalls. For instance, certain words and sentences in different languages may not bode well for literal translation into English (and vice versa) and it is also possible that certain nuances of the exchange may be lost in literal translation. Working in an inner city hospital I had got used to dealing with interpreters. Two years ago, however, I was taught an important lesson about listening carefully to interpreters.

I had recently had referred to me a young boy who was born in Bangladesh and had settled in Britain. The referral stated that he had become withdrawn and depressed. It also stated that his mother spoke Bengali. I was interested in seeing the family since I can understand Bengali, but I cannot speak it and so an interpreter was booked.

I introduced myself and then inquired about the specific problems. The interpreter immediately translated my English into Bengali for the mother. The mother replied to my question in perfect English. The interpreter immediately translated the reply into Bengali for me. I then asked my next question in English and the interpreter translated this into Bengali.

This carried on for at least 10 minutes with all concerned oblivious to the farce going on until the young boy burst out laughing and shouted, "Why don't you just speak to each other in English?" The mother and the interpreter paused and laughed. The session then continued without the interpreter, although inwardly I cringed at how stupid I must have looked.

I saw the boy and his mother for several more sessions as the boy became more confident and his problems eventually resolved. I am glad to say that I have not made the same mistake with interpreters since and that this young boy taught me an important lesson in that sometimes we become so automatic in our interview technique that we forget to actually listen to what is being said.

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