The Role of Attitudes, Beliefs, and Personal Characteristics of Italian Physicians in the Surgical Treatment of Early Breast Cancer

ABSTRACT

The influence of Italian physicians' attitudes, beliefs, and personal characteristics on medical decision making is examined in the case of surgical treatment of early breast cancer. Responses to a mail survey of 657 physicians from different specialties were analyzed comparing doctors recommending a radical procedure (9%) to those preferring a conservative procedure for younger patients only (25%), and those considering conservative surgery the treatment of choice regardless of patients' age (66%). The findings suggest that the likelihood of physicians' preferring a conservative procedure is influenced by their specialty and the extent to which they feel that a patient should have a role in the treatment decision more than by differences in the beliefs of treatment outcomes. Only preferences of the small group indicating radical surgery as the sole admissible treatment can be accounted for by ignorance or distrust of results of recent trials. These findings suggest that other than scientific factors guide many doctors in their decision making; they may help to explain why the diffusion of research results into clinical practice is often disappointingly slow. (*Am J Public Health* 1991; 81:38–42)

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Introduction

The extent to which trial results influence clinical practice is a subject of growing interest and controversy. The roles of doctors' attitudes, belief and personal factors in this respect have seldom been directly assessed, however. The controversy on the optimal surgical treatment of early breast cancer is an excellent area for such an investigation. Despite the substantial body of evidence now available on the comparative efficacy of limited and radical surgery,[1–3] the acceptance of conservative procedures in general practice is slower than one could expect. Possible explanations offered include: ignorance of trial results; uncertainty in interpreting trial results[4–9]; the influence of personal or institutional-related factors.[10–12]

To shed light on the merits of these three related hypotheses, we undertook this study as part of a current research program aimed at assessing quality of care for breast cancer patients in general hospitals.[6]

Organization of Cancer Care in Italy

In Italy health care is provided largely free of charge with patients co-payment for a limited—though increasing—number of services. The national health service—launched in 1978—envisages a system where health care is provided through public facilities (approximately 1,000 general hospitals where about 40,000 doctors practice) or, indirectly, by contracting with private health providers. Relative to cancer care apart from patients seen at the few Italian cancer centers, most patients are cared for at public general hospitals. There is a great deal of variability in the type of existing organization within these hospitals: few are equipped with oncology departments staffed with board-certified oncologists; others—accounting for approximately 10 percent of the total—see patients in oncologic wards staffed by internists, surgeons, and radiotherapists with special interest in oncology; but the vast majority of hospitals have no ad hoc organization and patients are seen at different departments depending on their specific needs.

Methods

This study was conducted between October 1986–June 1987 on a sample of hospital-based physicians. Sixty hospitals taking part in an existing monitoring program on quality of cancer care were invited to participate, 65 percent agreed to do so. Participating and non-participating hospitals were similar in size (median number of beds of 888 and 870, respectively), and organization of cancer care (35 percent of both groups had radiotherapy on site and an oncology department was present in 20 percent and 30 percent of participating and non-participating cen-

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ters, respectively). Six hundred and fifty-seven questionnaires were returned corresponding to an overall response rate of 68 percent (657/970), 20 percent of which were from physicians not seeing patients with breast cancer. Surgeons had a 60 percent response; internists 68 percent, gynecologists 74 percent, radiotherapists 84 percent and oncologists 89 percent. Participation tended to be slightly higher among younger (78 percent) and female (77 percent) physicians. An additional telephone inquiry was attempted on a randomly selected one-third of the 313 nonresponders. All were successfully traced and their responses were similar to those obtained by mail.

In the questionnaire, basic data were requested about the hospital in which physicians practiced and some personal characteristics. The first section of the questionnaire described four scenarios, two dealing with treatment of primary breast lesion and two dealing with adjuvant postsurgical treatment. In this paper we shall discuss the results relative to the surgical preferences. The first scenario was phrased as follows:

> A 35-year old premenopausal patient presents with a 1.5 cm. diameter mass in the upper outer quadrant of her right breast. Axillary lymph nodes are clinically negative and there are no other signs of metastases. Assuming that whatever blood test, X-ray examinations, and nuclear scans you use are negative and that a preliminary biopsy has established the diagnosis of carcinoma, do you favor a radical surgical approach or a breast-sparing operation (limited surgery) combined with primary radiotherapy? The radical surgical approach would mean a type of radical mastectomy (i.e. Halsted or Patey), while the limited surgery would involve a quadrantectomy, plus axillary dissection and radical radiotherapy.

After checking one of the two options (1 = I favor a radical surgery approach; 2 = I favor a limited surgery approach), responders rated the superiority of the alternative treatment modes in achieving the following outcomes: local control, disease-free survival, avoidance of morbidity, good cosmetic results, and long-term survival. A 5-point scale was used for each outcome: 1 = limited surgery plus irradiation is vastly superior to radical surgery; 5 = radical surgery is vastly superior to limited surgery plus irradiation; 3 = the two treatment modes are equally effective.

A second case presentation referred to an older patient (i.e. 60 years) with identical clinical information to see whether doctors deemed patient age a critical factor in treatment indication. The same treatment choices and efficacy judgment were required.

In the second section, physicians were asked to comment on findings from a pattern of care study conducted in Italy in 1984 documenting that only approximately one out of four patients eligible for limited surgery actually had limited surgery.[6] Doctors were asked to report why in their opinion a radical procedure was still the preferred treatment option by choosing among a list of possible explanations reported into the questionnaire. A free text format was also included so that they could add other reasons if they were not satisfied by the list.

The final section of the questionnaire contained a series of statements designed to measure physicians' attitudes toward involving patients in treatment decisions. Responders indicated on 5-point scales the extent to which they agreed or disagreed with 10 phrases such as "asking patients to participate in treatment decisions produces unnecessary stress for them," or "patients who participate in treatment decisions are less anxious and depressed during recovery." Statements were worded so that, for some, agreement indicated attitudes favoring participation and, for others, an unfavorable attitude. The scale was similar to the one used in a previous study in the United States.[10]

Analysis of the role of physicians' willingness to involve patients in treatment decisions was done both by considering answers to individual statements and by analyzing the overall score based on the scale; the Kruskal-Wallis test was used for statistical analysis.[13] In the computation of this test, all of the scores from all samples combined are ranked. The sum of the ranks in each sample is found, and the test determines whether these sums of

TABLE 1—Distribution of Physicians' Sociodemographic and Practice-related Characteristics according to Therapeutic Preferences

	R N = 33 (9%)		C-R N = 112 (25%)		C N = 298 (66%)	
Demographics	n	(%)	n	(%)	n	(%)
Age (years)						
≤35	9	(27)	37	(33)	120	(40)
36–50	18	(55)	56	(50)	139	(47)
>50	6	(18)	19	(17)	39	(13)
Sex						
Male	29	(88)	104	(93)	260	(87)
Female	4	(12)	8	(7)	38	(13)
Hospital Size (beds)						
≤400	4	(12)	23	(20)	65	(22)
401–1000	15	(46)	50	(45)	113	(38)
>1000	14	(42)	39	(35)	120	(40)
Patient Volume**						
<20	9	(28)	30	(27)	68	(23)
20–50	13	(41)	48	(44)	106	(36)
>50	10	(31)	32	(29)	118	(41)
Availability In-house Radiotherapy Equipment						
No	14	(42)	44	(39)	106	(36)
Yes	19	(58)	68	(61)	192	(64)
Specialty* (p = 0.0003)						
Internal medicine	6	(9)	22	(31)	42	(60)
Surgery	23	(11)	61	(29)	127	(60)
Radiotherapy	2	(3)	3	(5)	54	(92)
Medical oncology	1	(2)	12	(21)	43	(77)
Gynecology	1	(2)	12	(27)	31	(71)

R = radical surgery regardless of patient's age;
C-R = conservative only in younger patients;
C = conservative surgery regardless of patient's age.
*Information not available in three cases.
**Information not available in nine cases.

ranks are so disparate that they are not likely to have come from samples which were all drawn from the same population.[13] Results of this type of analysis are those reported in Table 2.

Results

Table 1 shows the distribution of physicians' sociodemographic and practice-related characteristics according to therapeutic preferences. Two-thirds felt that a conservative procedure was the appropriate treatment independently of patients' age; only 33 (9 percent) preferred the traditional radical procedure regardless of age. Almost all the radiotherapists favored the conservative procedure regardless of patients' age while more than one-fourth of doctors from other specialties deemed the conservative procedure appropriate only for younger patients. Surgeons and internists were more often supportive of the traditional radical technique.

A greater willingness to involve patients in the decision-making process was associated with preference for conservative surgery (Kruskal-Wallis test = p = 0.011 for difference in overall patient participation score among the three groups). Detailed analysis of physicians' answers to individual statements component of the overall score indicated that doctors recommending conservative surgery regardless of patient age (the "C" group in the tables) had a consistently different pattern of attitudes (see Table 2) compared to those indicating radical surgery as the optimal treatment.

Besides this marked difference in personal attitudes, the groups also differed in their perceptions of the efficacy, risk and overall desirability of the two treatments (Table 3). Almost all doctors in favor of the more radical procedure (94 percent) thought it was superior in terms of local control, particularly for the older woman while doctors always favoring limited surgery most of time claimed comparable effectiveness of the two treatments in all but cosmetic results.

In the intermediate group (i.e. those preferring conservative surgery in the younger but radical in the older patient) the relationship between reported therapeutic preference on one side, and attitudes and beliefs about outcomes on the other, was less easy to interpret. Patients' age seemed, although to a limited extent, to influence perception of treatment effectiveness in this group. Physicians' answers were more like those of the radical

TABLE 2—Distribution of Scores (mean ranks) in Individual Statements Exploring Physicians' Willingness to Involve Patients in Treatment Decisions according to Therapeutic Preferences

Negatively worded statements	R	C-R	C	p value
	Mean Ranks			
Patients may lose confidence in their physician if they believe that he/she has no firm opinion about the best treatment	221.1	227.9	219.8	.80
Encouraging patients to participate may do more harm than good	197.6	210.5	229.0	.15
Patients can't possibly make good decisions because they don't understand information	215.1	200.2	230.9	.05
Asking patients to participate in treatment decisions produces unnecessary stress	198.3	194.6	234.9	.003
Even if they receive enough information most patients are too upset to make a decision	216.8	197.5	231.8	.03
Positively worded statements	**R**	**C-R**	**C**	**p value**
Patients who participate in treatment decisions make a better adjustment to the disease	225.1	253.6	209.8	.003
Patients should have a greater influence on treatment decisions than their doctor	243.2	241.8	212.2	.05
Patients who participate in treatment decisions are less anxious and depressed	245.3	244.4	210.9	.02
If given comprehensible medical information pts. can make good decisions about treatment	248.9	249.4	208.6	.004
Most patients want to be involved in treatment decisions	217.8	249.2	212.2	.02

R = radical surgery regardless of patient's age;
C-R = conservative only in younger patients;
C = conservative surgery regardless of patient's age.
Significance tests use Kruskall-Wallis One-Way Analysis of Variance.[13] See text for further information.

TABLE 3—Proportions of Doctors with Different Beliefs about the Yield of Radical and Conservative Surgery according to Specific Treatment Outcomes

Type of Treatment Outcome	Perceived efficacy	Therapeutic preferences: R 35y old	R 60y old	C-R 35y old	C-R 60y old	C 35y old	C 60y old
Prevention of local recurrence	C>R	6	3	10	10	8	7
	C=R	9	3	62	42	77	76
	R>C	84	94	28	48	15	17
Disease-free interval	C>R	—	—	4	4	4	4
	C=R	18	9	83	63	93	93
	R>C	82	91	13	33	3	3
Risk of morbidity	C>R	6	6	28	21	24	25
	C=R	24	24	55	49	59	59
	R>C	70	70	17	30	17	16
Cosmetic results	C>R	94	76	95	84	96	94
	C=R	3	19	3	13	2	4
	R>C	3	5	2	3	2	2
Long-term survival	C>R	3	3	6	4	4	4
	C=R	24	12	82	63	94	93
	R>C	73	85	12	33	2	2

R = radical surgery regardless of patient's age;
C-R = conservative only in younger patients;
C = conservative surgery regardless of patient's age.

Legend:
C>R = Doctors considering conservative surgery superior to radical;
C=R = Doctors that attribute the same effectiveness to the two treatments;
R>C = Doctors considering radical surgery superior to conservative.

TABLE 4—Physicians' Explanations of the Limited Popularity and Preference for Execution of Conservative Surgery in Younger Patients Documented in a Nationwide Pattern of Care Study in 1984 (Italy) (see ref. 6)

	R		C-R		C	
	n	(%)	n	(%)	n	(%)
Trial results still controversial	14	(42)	53	(47)	53	(18)
Technical difficulty of cons. surgery recommends its performance mostly in younger patients	7	(21)	20	(18)	21	(7)
Cons. surg. is limited by the availability of radiotherapy equipment	10	(30)	40	(36)	122	(41)
Surgeons are still reluctant to accept trial results	2	(6)	11	(10)	101	(34)
Cosmesis not yet sufficiently considered	2	(6)	7	(6)	25	(8)
Others	2	(6)	7	(6)	26	(9)

R = radical surgery regardless of patient's age;
C-R = conservative only in younger patients;
C = conservative surgery regardless of patient's age.
Column percentages exceed 100 because doctors could give more than one answer.
x^2_{10} d.f. = 25.6 $p < 0.03$

group particularly with respect to the decision pattern for the older patient (Table 3).

As a whole, joint examination of the beliefs of the intermediate group (Table 3) and their willingness to involve patients in treatment decisions (Table 2) suggests that—independently of perceived treatment effectiveness—less consideration for patients' expectations was probably the factor influencing choice of a radical procedure for an older patient in whom negative cosmetic consequences were judged less important. This interpretation is supported indirectly considering the distribution of physicians' opinions of reasons why the diffusion of conservative surgery is still limited (Table 4). The majority in the radical group (42 percent) claimed conflicting trial results as the reason for this, but 34 percent of doctors in the conservative group felt that prevailing practice could be accounted for by surgeons' reluctance to accept trial results (Table 4).

Discussion

Decisions about alternative treatments involve implicit and explicit weighing of trade-offs among different outcomes (survival, morbidity, functional status, etc.). Our study suggests that beliefs about treatment outcomes derived from clinical trials are not always the most important factors in decisions for some doctors. This is not a new finding as other studies exploring determinants of physicians' practice[10–14] have found associations of specialty, age, and practice-related characteristics with practice patterns.

The grouping of doctors according to their therapeutic preferences is of particular interest for analyzing the consistency between perceived outcomes of treatment and the decision pattern. At one extreme, we found a small group (9 percent) whose therapeutic preference—although based on a miscomprehension, or non-acceptance, of recent scientific literature—was consistent with perceived outcomes of treatment: doctors chose a radical procedure because they thought it was more effective than limited surgery. If we take their answers as a true reflection of their opinions, and not as the result of a preference-dependent selection of that segment of the literature fitting their own preconceptions, exposure to the relevant scientific literature would be the appropriate remedial action.

At the other extreme, those choosing limited surgery appeared to be guided by the consideration that if this approach is just as effective as a radical procedure, the less mutilating treatment should be preferred.

Although the beliefs of the "intermediate" (i.e. radical-conservative) group about treatment effectiveness were similar to those of the "conservative group," radical surgery was still their preferred treatment for a 60 year old patient. While we cannot rule out that this was due to some anticipated contraindication for limited surgery in the older patient, their lack of consideration for the patient's right to share in the decision-making appears a more convincing explanation of their different behavior. When facing the same scientific uncertainty less "paternalistic" doctors (i.e. those attaching greater importance to patients' opinions) appear to be influenced by patient-centered outcomes (i.e. cosmetic) more than those who think they know what is in their patients best interest, thus relying more on physician-centered end-points (i.e. disease free-survival, total survival).

The original sample was drawn from among physicians working at a group of general hospitals participating in a program of quality of care evaluation.[6] Even if for some reason participating hospitals were not fully representative of all Italian physicians, this does not affect the internal validity of our findings. Furthermore, our findings favorably compare with other surveys on specialists[14] and non-specialists[10,17,18] in different countries. Studies from the UK,[18] USA,[10] and Canada[14] all consistently showed that surgeons, and to a limited extent also internists not specialized in oncology, are still more often in favor of radical procedures.

Data on actual practice would be stronger evidence of treatment preferences, but they are seldom available. Given that our study was done in a group of hospitals where a monitoring program on care given to breast cancer patients was going on,[6] it may be interesting to look at some comparisons between the two sources of information. Consistent with the key role of surgeons' opinions in the decision about surgery, we found—within a group of more than 1,000 cases of newly diagnosed patients in 1984–85[6]—that limited surgery was offered only to 25 percent of eligible patients. Also, data on actual practice confirmed the age-dependent orientation of doctors in that the more conservative operation was given to 34 percent of women younger than 50 years and compared to 21 percent among older patients.[6]

The public health implications of our study depend on the path of therapeutic decisions, which in turn depend on health care organization in different countries. In Italy, where cancer care is still seldom interdisciplinary, especially in community hospitals, it is worrisome that as many as 40 percent of surgeons—i.e. the specialists who decide about surgery—still favor radical surgery for an older patient and 11 percent even for a younger patient. This should not be seen as totally surprising since at the time this survey was carried out official recommendations of the Italian Breast Cancer Task Force were still in a

transition period. They left open the choice of the most appropriate treatment indicating as acceptable both limited surgery and a more radical procedure (i.e. the Patey type of "modified" radical mastectomy).

Where cancer care is multidisciplinary (like in the US or Canada), it is likely that the more modern opinion held by other specialists is already forcing surgeons to change opinion and consequently practice. Less easy to predict is the extent to which changes in doctors' perception of patients' rights in treatment decision will affect prevailing practice in the near future. Considerations of this sort should be kept in mind when comparing results of patterns of care studies and physicians' surveys. □

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