

Effect of Patient Age on Management Decisions in Breast Cancer: Consensus from a National Consultation

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ABSTRACT

This qualitative study investigated the attitudes, perceptions, and practices of breast cancer specialists with reference to the effect of patient age on management decisions in breast cancer, and attempted to identify national consensus on this issue. One hundred thirty-three relevant specialists, including 75 surgeons and 43 oncologists, participated in a virtual consultation using e-mailed questionnaires and open-ended discussion documents, culminating in the development of proposed consensus statements sent to participants for validation. A strong consensus was seen in favor of incorporating minimum standards of diagnostic services, treatment, and care for older patients with breast cancer into relevant national guidance, endorsed by professional bodies. Similarly, an

overwhelming majority of participants agreed that simple, evidence-based protocols or guidelines on standardizing assessment of biological and chronological age should be produced by the National Institute for Health and Clinical Excellence and the Scottish Medicines Consortium, developed in collaboration with specialist oncogeriatricians, and endorsed by professional bodies. A further recommendation that all breast cancer patient treatment and diagnostic procedures be undertaken in light of up-to-date, relevant scientific data met with majority support. This study was successful in gauging national specialist opinion regarding the effect of patient age on management decisions in breast cancer in the U.K. *The Oncologist* 2010;15:657–664

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INTRODUCTION

The management of elderly patients with breast cancer is recognized as an area of increasing concern because of the diverse state of their general health and the relative lack of evidence for treatment effect within the chemotherapy setting, compared with substantial data on surgery, radiation, and tamoxifen use. Breast cancer risk increases with age, and >80% of cases occur in women >50 years old, with the highest number of cases of breast cancer diagnosed in the 50–64 age group [1–4].

The aging population is increasing—a 65-year-old woman in the U.K., for instance, now has an average life expectancy of 19.4 years [5]. Evidence-based guidelines for the management of older breast cancer patients currently do not exist.

Many clinical trials have used arbitrary upper age limits, and very few studies included large numbers of old (>75 years) or very old (>85 years) people [6]. Data from a national consultation on prospective human epidermal growth factor receptor (HER)-2 testing indicated that, of those respondents continuing to undertake HER-2 testing selectively, a small minority included age as a stated criterion [7].

The present study, a qualitative national consultation exercise carried out in the U.K. between August 2007 and November 2008, sought to stimulate discussion on the effect of patient age on management decisions in breast cancer and to identify consensus regarding the issue of biological and chronological age that could be used to influence and help develop protocols in line with national guidance.

MATERIALS AND METHODS

The design and content of the U.K. national consultation exercise were determined by a multidisciplinary steering group comprising two breast cancer clinicians, a geriatrician, and a breast cancer charity representative (Fig. 1).

In order to explore all possible underlying issues, an open-ended, qualitative debate was deemed more valuable than a prompted, quantitative survey. Job type was recorded against all response data, which were otherwise anonymized.

Participation was invited via a third-party database of 700 breast cancer specialists providing comprehensive coverage of all U.K. cancer networks. The database was obtained through an independent commercial list hire company (Dendrite UK) to minimize selection bias. Respondents were required to provide an e-mail address to allow the consultation to be conducted via e-mail for the remainder of its duration. To increase participation, a dona-



Figure 1. Design of consultation.

tion to a charity of the respondents' choice of £50 per participant was pledged.

Respondents to the invitation process received a semi-quantitative baseline questionnaire—partly factual, partly attitudinal—developed in collaboration with the steering group and validated in a previous national consultation on prospective HER-2 testing [7], to provide an initial gauge of situation, opinions, and issues.

Feedback from the questionnaire was used to inform the selection of topics for the key national discussion stage of the consultation. An open-ended discussion document was prepared providing a narrative of findings from the baseline survey and seeking national participants' views on the following issues:

1. Whether exclusion from access to optimum care for older patients with breast cancer is a national situation.
2. What steps are needed to ensure factors preventing optimum access to standard treatment for older breast cancer patients are effectively addressed.
3. What steps are required to reduce the risk to older breast cancer patients of exclusion from treatments to make the largest difference to clinical outcome.
4. How shortfalls in training and time to handle all aspects of older patients with breast cancer relevant to their management can be effectively addressed.
5. Which core disciplines should always be represented in multidisciplinary teams to evaluate whether elderly patients with breast cancer are suitable for treatment.
6. Where any differences in protocols between private sector and National Health Service (NHS) care are most likely to occur.
7. Which issues restricting recommendation of chemotherapy treatment for older breast cancer patients can be most easily addressed to achieve greatest benefit.
8. How a protocol or guideline to help standardize variation in responders' approach to assessing both biological and chronological age can best be developed.

9. What would be the ideal formal instrument or objective tool for use in assessment of elderly patients with breast cancer.
10. What should be considered best practice when assessing older breast cancer patients' health status or fitness for treatment.

Responses to the consultation phase were studied and analyzed using a categorization technique comprising unqualified agreement, agreement, or disagreement response categories. However, because this was a largely qualitative exercise, assessment of the feedback involved careful reading of each response to gauge the type and weight of the opinion, thus facilitating the drafting of three statements that were offered to the national consultation participants for validation of consensus. For each consensus statement, participants were given three options: unqualified agreement, qualified agreement, or disagreement. Those registering qualified agreement or disagreement were invited to explain their response, thereby informing modification of the consensus statement should this prove necessary.

RESULTS

Participants

A total of 195 individuals responded to the initial mailing, indicating their willingness to participate. Of these, 133 (68%) responded to at least one stage of the process (Table 1). The discussion stage of the consultation's process featured open-ended questions and thus required participants to provide free text responses. Given the labor intensiveness of this stage, taking up a significant amount of respondents' time, there was a lower rate of response to the discussion document than to the baseline survey. However many participants contributed at considerable length to the discussion stage. A breakdown of registrants and responders showed a weighting toward surgeons versus oncologists.

Baseline Survey Findings

Responses to the baseline survey (Table 2) were received from 103 participants, a 53% response rate. Of these respondents, 41% said age discrimination was a "recognized problem" that needed to be more widely addressed to enhance quality of care in older breast cancer patients, with a minority (4%) believing this was a "major concern." A similar proportion (36%) felt that age discrimination was a minor issue, whereas 20% stated it was not an issue at all.

Factors Preventing Access

Most respondents (61%) said patients at the Trust where they worked were "sometimes" prevented from gaining op-

Table 1. Breakdown of participants (surgeon/oncologist/pathologist/radiologist breakdown shown in brackets)

Total signing up to participate	195 (110/65/16/4)	100%
Respondents to questionnaire	103 (57/34/8/4)	53%
Respondents to discussion stage	60 (36/19/4/1)	31%
Respondents to consensus stage	72 (38/31/2/1)	37%
Respondents to any stage	133 (75/43/11/4)	68%
Respondents to all stages	29 (17/9/2/1)	15%

timum access to standard diagnostic and treatment services. Influencing factors included general health status or fitness for treatment (100%), level of understanding among health care professionals of normal aging (99%), disability (99%), a dearth of relevant research data (97%), and a lack of understanding of life expectancy levels (96%).

A minority (3%) felt patients were "commonly" prevented from access to standard treatment at their Trust, whereas 1% of respondents stated patients were "almost invariably" prevented from access. Over a third of respondents (35%) said patients were never prevented from access.

Most respondents (92%) stated that patients were at risk for exclusion from chemotherapy, whereas 52% said patients were at risk for not receiving biological therapy and 50% felt they were at risk for exclusion from primary surgery.

Another 42% of all respondents said patients were at risk for exclusion from axillary node surgery, whereas 41% cited radiotherapy following breast-conserving surgery. Over a quarter (26%) stated that patients were at risk for not receiving treatment for metastatic breast cancer and 20% cited lack of biomarker testing. A minority of respondents felt patients were at risk for being excluded from triple assessment (clinical examination plus mammography/ultrasound scan plus fine needle aspiration/core biopsy) (7%), hormone or endocrine therapies (2%), and steroid receptor testing (1%).

Evaluation of Older Patients

Most respondents (61%) were confident that they could evaluate social and emotional dimensions of patients when making management decisions, although a minority (20%) felt "fully equipped" to handle all aspects of patients relevant to their management. Of the remainder, 9% said a lack

Table 2. Data from preconsultation baseline survey

BCCG preconsultation questionnaire analysis	March 23, 2009	
	Total	%
Q1. Do you feel that older breast cancer patients (aged ≥ 65) are prevented from optimum access to standard diagnostic and treatment services at the Trust or area where you work?	<i>n</i> = 103	
Almost invariably	1	1%
Commonly	3	3%
Sometimes	63	61%
Never	36	35%
Q2. In your experience, to what extent do the following factors play a part in preventing optimum access to treatment for older breast cancer patients?	<i>n</i> = 67	
Tumor characteristics	61	91%
General health status or fitness for treatment	67	100%
Geographical location	67	100%
Socioeconomic status of patient	66	99%
GP referral patterns	65	97%
Level of understanding, among health care professionals, of normal aging	66	99%
Dearth of relevant research data	65	97%
Patient ethnicity	66	99%
Views and attitudes of oncologists and breast surgeons	66	99%
Disability	66	99%
Level of patient knowledge/education	64	96%
Level of social support (career/advocate)	66	99%
Lack of understanding of life expectancy levels	64	96%
Other	5	8%
Q3. In your experience, which of the following aspects of breast cancer care are older patients at risk for being excluded from?	<i>n</i> = 86	
Triple assessment	6	7%
Primary surgery	43	50%
Axillary node surgery	37	43%
Radiotherapy following breast-conserving surgery	35	41%
Steroid receptor testing	1	1%
Chemotherapy	79	92%
Hormone therapies	2	2%
Biological therapy	45	53%
Biomarker testing (e.g., HER-2)	17	20%
Treatment for MBC	22	26%
Q4. In your view, to what extent, if at all, is age discrimination an issue that needs to be addressed to enhance quality of care in older breast cancer patients?	<i>n</i> = 101	
A major issue	4	4%
A recognized problem that needs to be more widely addressed	41	41%
Only a minor issue	36	36%
Not an issue at all	20	20%

Abbreviations: BCCG, Breast Cancer Consensus Group; GP, general practitioner; HER-2, human epidermal growth factor receptor 2; MBC, metastatic breast cancer.

of relevant training meant that they were not fully confident about effectively evaluating social and emotional dimen-

sions of patients, whereas 9% believed that there was a lack of time for them to adequately manage the complexity of these dimensions and clinical factors.

Three quarters of respondents worked in a multidisciplinary team evaluating whether patients were suitable for treatment. Most teams included a breast surgeon (96%), clinical oncologist (91%), and specialist nurse (90%). The majority of teams (62%) included a medical oncologist, whereas 42% included an anesthetist. A geriatrician was included in 8% of teams.

Differences Between NHS and Private Sector

Most respondents (66%) stated that, in their experience, patients were “usually”—but not always—managed to the same protocols in the private sector as in the NHS, with 32% perceiving that private and NHS patients were “invariably” managed to the same protocols. A minority (1% in each case) stated that patients were “rarely” or “never” managed to the same protocols.

Chemotherapy in Older Patients

Factors restricting a recommendation of treatment with chemotherapy for patients with early-stage disease were: poor general health or fitness for treatment (cited by 100% of respondents), comorbidity (99%), lack of relevant data in the elderly (97%), and reluctance of carers to suggest chemotherapy to patients (95%).

Other factors included: a perception of inaccuracy of “Adjuvant! Online” data for breast cancer in patients aged >70 years (94%), negative perceptions among older people regarding chemotherapy (94%), poor general medical and geriatric medicine skills among surgeons (93%), the absence of a trained nurse to advise on the assessment of older cancer patients (92%), and tumor characteristics associated with age (81%).

Comorbid Conditions

Other than poor general health, the key factor in assessing fitness for chemotherapy in patients was comorbidity. Comorbid conditions considered by respondents when making decisions regarding treatment in patients were heart disease and chronic obstructive pulmonary disease, each cited by all respondents. Nearly all respondents also cited diabetes (98%), hypertension (98%), arthritis (98%), renal failure (98%), stroke (98%), and previous malignancy (96%).

Comorbidity being a frequently used reason to not provide older women with treatments was seen as a very important factor. Older women being more likely than younger women to not want therapy was also cited as an important issue.

Regardless of comorbidity, respondents’ main areas of

toxicity concern were (in order of perceived importance): heart (cited by 89% of respondents), bone marrow (67%), and kidney (47%). Around a quarter (23%) of respondents cited neurological toxicity concerns.

Assessment for Treatment

Biological and Chronological Age. Most respondents (73%) took the biological and chronological age of patients into account when considering treatment and management. The majority of respondents (88%) measured frailty to assess biological age, whereas 75% measured cognition; 72% measured cardiac function to assess biological age, whereas a similar proportion (67%) measured respiratory function. Another 41% of respondents looked at diabetes status in assessing biological age.

Another 15% of all respondents reported they did not assess biological age but took general health and functional factors into account, whereas a similar proportion (12%) based age-related decisions solely on biological age when considering treatment and management.

Suitability for Cytotoxic Treatment. Virtually all respondents (97%) assessed patients' general health status or fitness for treatment to determine patients' suitability for cytotoxic therapy. Most (91%) assessed patients' preference to determine their suitability, whereas a similar proportion (90%) assessed life expectancy. Most respondents (83%) assessed physical functioning to determine suitability for cytotoxic therapy whereas 78% measured psychological well-being, 72% assessed social support, 70% determined cognitive function, 70% looked at tumor characteristics associated with age, and 59% assessed nutritional status.

Assessment Tools. Over half of all respondents (51%) used the American Society of Anesthesiologists physical status measurement; the same proportion used the Karnofsky performance status score and 20% of respondents used the Mini Mental Exam. A minority of respondents used the instrumental activities of daily living (IADL) and ADL (10% in each case), whereas 4% used the Barthel index.

Response from Open-Ended Discussion Stage

Treatment Access

Feedback from the discussion document was received from 60 (31%) participants. Analysis of responses to the discussion stage showed a general consensus that older breast cancer patients were, in certain areas, excluded from optimum access to standard diagnostic and treatment services, with

most respondents acknowledging this as a national situation.

Of the minority of respondents who did not agree that this was a national problem, most suggested that age per se might not be the issue. The main concern might be comorbidity rendering patients unfit for treatment. This suggestion was acknowledged by many of those who agreed that there was a national problem, but there was a general consensus that even when taking the patient's age into account where it has evidence-based relevance, decisions should be holistic, multidisciplinary, evidence based, and made in partnership with the patient.

Asked what steps need to be taken to ensure that the most important issues preventing access to treatment for patients are effectively addressed, most respondents cited a need for reliable randomized studies in elderly patients to compare the advantages and disadvantages of treatment. A quarter of respondents advocated entering elderly patients into studies to establish the benefit of chemotherapy in this population and reduce the risk for exclusion.

Half of the respondents cited the risk for patients being excluded from primary surgery as the most important treatment issue to address, because this would make the largest difference to clinical outcome. Many of these respondents suggested that the most important way of reducing this risk was to ensure the elderly were subject to multidisciplinary team review.

On the matter of addressing the shortfall in the number of respondents who felt fully equipped to handle all aspects of patients relevant to their management, most respondents advocated integration of elderly care physicians into multidisciplinary teams.

Half of all respondents were opposed to geriatricians participating in multidisciplinary meetings, many believing it would not be feasible to ensure their attendance because of a lack of time. A significant minority of respondents favored geriatricians' participation at such meetings, whereas among those opposed there was wide support for their contribution on a case-by-case consultation basis.

Over half of the respondents pointed to a difference in standards between private and NHS care. Some respondents pointed out that more treatments may be offered in the private sector because patients might feel they can demand therapies when they are paying and may be more persuasive if they are highly educated, wealthy, or from a higher social class.

Chemotherapy Trials

A strong consensus emerged advocating independent clinical trials of chemotherapy in elderly patients. Asked which

Table 3. Draft consensus statements**Consensus statement 1**

In order to ensure uniform and optimum access to diagnostic and treatment services, evidence-based minimum standards of diagnostic services, treatment, and care for older patients with breast cancer should be incorporated into relevant guidance from the National Institute for Health and Clinical Excellence and the Scottish Medicines Consortium, and endorsed by professional bodies.

These standards should be used by all health care professionals involved in breast cancer management, and clinical audit programs should record the proportion of treatments adhering to this guidance in order that all such patients can expect equal treatment by 2010.

The recommended treatment should be reviewed in the light of new evidence in 2013 as it originates from up-to-date research and future drug and therapy development.

Consensus statement 2

All breast cancer patient treatment and diagnostic procedures should be undertaken in the light of up-to-date, relevant scientific data.

Particular organizations such as the National Cancer Research Institute, National Cancer Research Network, Office for Strategic Coordination of Health Research, individual research bodies such as Wellcome, Medical Research Council, Cancer Research UK, and the Government's research and funding priorities should address the issue of how to specifically aim clinical trials at older women with breast cancer and investigate associated matters, such as removing the upper age limits for eligibility into clinical trials and taking measures to encourage recruitment by 2013.

Clinical audit programs should record the ages and numbers of patients treated in clinical trials, and radical or palliative care.

Consensus statement 3

A simple and evidence-based protocol or guideline (on standardizing the approach to assessing both biological and chronological age of breast cancer patients when considering treatment and management) should be produced by the National Institute for Health and Clinical Excellence and the Scottish Medicines Consortium, developed in collaboration with specialist oncogeriatricians, and endorsed by professional bodies.

This protocol should be used by all health care professionals involved in breast cancer management, and clinicians should be encouraged to use the guideline by linking clinical audit programs that record the proportion of treatments adhering to this guidance to specific postgraduate activities and integrating them into formal clinical governance arrangements by 2013.

issues restricting the recommendation of treatment with chemotherapy could be easily addressed to achieve the most benefit to patients, three quarters of the respondents cited a lack of relevant data in the elderly population.

Assessment for Treatment

A consensus was also evident in favor of a protocol or guideline to standardize the approach to the assessment of biological and chronological age. Asked how best this protocol could be developed, some respondents said guidelines should be evidence based and simple and must be tested to allow formulation of a standard protocol. Many respondents advocated the help of geriatricians in the development of such guidelines.

Asked what the ideal objective tool for assessing patients' health status or fitness for treatment should be, more than a third of respondents cited specific approaches including comprehensive geriatric assessment and cognitive function and physical condition assessment tools. A significant minority said more research was needed to make a judgment. Many respondents suggested that this development should be within the context of clinical trials.

There was no clear consensus on what should be considered best practice when assessing patients' health status or fitness for treatment.

Consensus Stage

After full analysis and consideration of the consultation stage feedback, we drafted, for national voting, three consensus statements (Table 3) that were felt to accurately reflect the weight and breadth of the opinion received.

Voting on these statements (Table 4) showed a clear consensus to all of statements 1, 2, and 3. Qualifying comments were made by a number of respondents, particularly to statements 1 and 3.

DISCUSSION

This study highlights the high level of awareness of and interest in the problem of identifying optimal treatment for older women with early breast cancer, and the level of enthusiasm for finding solutions. Two major trials set up to help find such solutions, the Adjuvant Cytotoxic Chemotherapy in Older Women (ACTION) [8] and Chemotherapy Adjuvant Studies for Women at Advanced Age trials [9],

Table 4. Levels of consensus

	Consensus response– statement 1	Consensus response– statement 2	Consensus response– statement 3
Total respondents	72	72	72
Unqualified agreement	49 (68%)	61 (85%)	50 (70%)
Agreement	19 (26%)	11 (15%)	19 (26%)
Disagreement	4 (6%)	0 (0%)	3 (4%)

have unfortunately not answered the question of the benefit or otherwise of adjuvant chemotherapy for this age group, because these trials were closed prematurely because of low recruitment, indicating that it is not possible to run a placebo-controlled chemotherapy trial.

However, a recent U.S. trial showed that i.v. cytotoxic combination chemotherapy produces superior disease control with acceptable side effects, compared with simple oral chemotherapy in an older population, defined by a lower age limit of 65 years [10]. That trial does strengthen the case for conducting a study, or even a prospective audit, of adjuvant chemotherapy in the elderly population with particular attention to the presentation assessment of patients' general health and a careful assessment of toxicity and impact on quality of life.

A study based on the closed ACTION randomized controlled trial is currently being designed, which will involve prospective audit of characteristics of approximately 300 patients >70 years old who are offered chemotherapy at multiple U.K. centers, and their subsequent tolerance of chemotherapy.

The Endocrine ± Surgical Therapy for Elderly women with Mammary cancer trial has also closed prematurely as a result of slow recruitment, and there are currently no trials in the European Organization for Research and Treatment of Cancer, National Cancer Institute, or National Cancer Research Network portfolios specifically targeting this population, despite the absence of evidence on which to base treatment recommendations.

A closer collaboration between oncologists and geriatricians, highlighted by many participants in this study, would ensure that an aging cohort is less likely to be deprived of timely and appropriate clinical input from specialists in both disciplines. Greater opportunities for older patients to enter into trials would help to provide much-needed data on the benefits and risks of chemotherapy to this group of patients. Although there is little evidence as to the most appropriate assessment tool to determine those most likely to benefit from individual treatment options, this should not discourage the full as-

essment of physical, psychological, and social needs of the elderly patient with breast cancer.

Although there was a high level of agreement to statements 1 and 3, consensus was not absolute, and further work in these areas needs to be undertaken before these two proposals can be implemented. The U.K. Medical Research Council general practice research database is the world's largest database of anonymized medical records from primary care. It appears particularly urgent to apply this model of clinical audit program to record the treatment of older patients. This national consultation did not yield any clear consensus on what should be considered best practice when assessing patients' health status or fitness for treatment. This issue needs to be further explored in the future.

CONCLUSION

As an action research exercise, this national consultation was qualitative in nature and did not produce hard data; further studies are required to robustly quantify national opinion. However, the valuable qualitative information obtained by this exercise has provided a relatively clear national snapshot of practices and attitudes with regard to the effect of patient age on breast cancer management. Evidence-based discussions may be preferable to variably informed opinions; however, this consensus was informed by a wide population of those closely involved in breast cancer management.

The risk for self-selection in this type of research cannot be entirely excluded: those more motivated to establish change in breast cancer management for elderly patients may have been more likely to participate in the consultation. However, those who feel that management of these patients is not an area for concern might equally take the opportunity to express their opinions, and these drivers most likely counteract each other. Likewise, the provision of a charity donation incentive, while helping to increase the response rate, also served to buffer the risk for self-selection.

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