

What factors influence patient preferences regarding cardiopulmonary resuscitation?

ABSTRACT—The aims of this study were to investigate the impact of medical and non-medical factors on the cardiopulmonary resuscitation (CPR) preferences of patients, to determine which of them are the most important to patients when considering CPR, and to compare the views of older (≥ 70 years) and younger (< 70 years) patients.

We interviewed 180 patients, 86 of whom were aged 70 years or older. 'I do not want to be a burden on my family' was the most important factor for older patients, and they were more ready to leave the decision to the doctor than were the younger patients. 'I want to retain my capacity to think clearly' was most important to younger patients. In general, younger patients gave higher ratings in favour of CPR than older patients. Increased age, drug abuse, dementia, pain, poor functional status and a low likelihood of success were associated with a lower preference rating for CPR in both age groups.

In most hospitals in the USA the writing of a do-not-resuscitate order requires the consent of the patient or a surrogate. In contrast, decisions regarding CPR in Britain have traditionally been made by the patient's physician without discussion with the patient or relatives [1]. However, several recent studies have shown that a significant proportion of patients want to be involved in deciding their own CPR status [2–6]. The guidelines on resuscitation published jointly by the British Medical Association and the Royal College of Nursing suggest that discussion of resuscitation with patients is appropriate in certain circumstances [7]; a similar recommendation has been promulgated by the Royal College of Physicians [8].

At present, it is not clear what factors influence patients' views regarding CPR. It has been suggested that in future elderly people may become more assertive about wanting to be involved in important decisions regarding their own care [9]. The purpose of this study was to investigate the values most impor-

tant to patients, the impact of medical and non-medical factors on resuscitation decisions, and to compare the views of older (≥ 70 years) and younger (< 70 years) patients.

Methods

Patients were recruited from the geriatric, orthopaedic and vascular surgery wards and outpatient clinics. Inpatients were surveyed only during the days prior to planned discharge. Patients with cancer, end-stage organ failure or other terminal or life-threatening illness were excluded, as were patients with a diagnosis of cognitive impairment or depression and those who scored less than 7 on the abbreviated mental test or more than 5 on the short geriatric depression scale [10,11]. Informed consent was obtained from all subjects, and they were assured that the views they expressed would not influence their current or future management. The study was approved by local ethical committees.

A standard description of the CPR procedure was read to all patients [12], and a questionnaire was then administered by an interviewer. In the first part of this questionnaire patients were asked who they felt should be involved in making resuscitation decisions. Part 2 investigated the relative importance to patients of a number of statements related to quality of life; patients were asked to select three from a list of 10 statements adapted from a guide for creating a 'values history' by Doukas and McCullough [13]. Finally, in part 3 patients were presented with a variety of situations with differing medical and non-medical factors and were asked to decide whether or not CPR should be performed; the scenarios were adapted from those devised by Ebell and colleagues [14].

Likert scales were used to rate patients' preferences in parts 1 and 3 of the questionnaire. Statistical analysis was by analysis of variance and paired or unpaired t-tests, as appropriate. A Bonferroni correction was used to correct for multiple comparisons. To detect differences in preferences between older and younger patients with a power of 80% at a significant level of 5%, it was estimated prior to the study that 85 patients would be required in each age group (≥ 70 and < 70 years).

Results

We interviewed 96 women and 84 men; 86 were aged 70 years or older (mean 80 years, SD ± 7) and 94 were younger than 70 years (mean 53 years, SD ± 12).

G E MEAD, MRCP, Research Fellow, Department of Vascular Surgery and Geriatric Medicine, University Hospital of South Manchester

S T O'KEEFFE, MRCP, Lecturer in Geriatric Medicine

C I A JACK, MD, MRCP, Lecturer in Geriatric Medicine

A M MAESTRI-BANKS, BA (Hons), Research Nurse

J R PLAYFER, MD, FRCP, Consultant Geriatrician

M LYE, MD, FRCP, Professor of Geriatric Medicine

Department of Geriatric Medicine, Royal Liverpool University Hospital

In response to the question of who should be most involved in resuscitation decisions, all patients ranked the potential participants in identical order (Table 1). However, although both groups agreed that physicians were the most important decision makers, younger patients gave a significantly lower rating to doctors and a significantly higher rating to patient and spouse involvement in resuscitation decisions.

Table 2 shows the percentage of patients who chose each value. It is striking that 'I want to maintain my capacity to think clearly' was chosen by more patients in the younger group while 'I want to be treated with dignity when I can no longer speak for myself' was more important to older patients. 'I do not want to be a burden on my family' was the most important value for older patients, and was also chosen by almost half the patients in the younger group.

All the medical and non-medical factors assessed in this study were regarded as important by patients when considering resuscitation decisions (Table 3). Thus, advancing age, drug abuse, dementia, pain, cancer and impaired functional status all lessened the likelihood of recommending resuscitation. In particular, patients were less likely to choose resuscitation if there was little chance of success or if the patient was likely to have severe cognitive impairment after resuscitation. In general, younger patients gave higher ratings in favour of CPR than older patients, although the differences were small for most situations.

All patients in the younger group and 78% of patients in the older group would opt for resuscitation in their current state of health. The responses to the various clinical situations of older patients who would wish to be resuscitated were much the same as those who would not wish it.

Discussion

Few British doctors discuss resuscitation decisions with patients [3,15]. However, considerations of patient choice and rights are increasingly important in health care in Britain. In particular, when poor quality of life rather than a low likelihood of success is the reason for not considering CPR, unilateral medical decisions regarding CPR may no longer be justifiable [16]. It is clear from this and other studies that although patients see the doctor as the most important decision maker for CPR decisions, many of them wish to have some say in the decision [2-4].

The reasons doctors are reluctant to discuss resuscitation with patients probably include embarrassment, the risk of upsetting patients and the fear of being bound by what the doctor feels may be an inappropriate answer. Although patients are, in fact, rarely upset by discussions regarding CPR [2,3,12], there have been reports of severe distress in vulnerable patients [17], and it is therefore important to tailor the discussion to the individual patient. Our study, like others, excluded acutely ill patients, and it remains unclear

Table 1. Mean Likert ratings for patient preferences as to who should be involved in resuscitation decisions (1 = not important; 5 = very important). The Bonferroni corrected *p* value for statistical significance in unpaired *t*-tests = 0.008.

| Individuals involved | Patients | |
|----------------------|----------|---------|
| | Older | Younger |
| Doctor | 4.8 | 4.4* |
| Patient | 2.9 | 3.9* |
| Spouse | 2.8 | 3.4* |
| Children | 2.5 | 2.4 |
| Nurse | 1.4 | 1.5 |
| Clergy | 1.3 | 1.2 |

**p* < 0.0010.

whether preferences expressed at a time of relative health are maintained during acute illness [18,19]. There is a broad consensus in Britain that doctors are not obliged to discuss CPR when resuscitation would be futile, although there is controversy on how to define futility [16,20].

Table 2. Percentage of patients choosing each value (totals equal 300% because each patient had three choices).

| Value | Patients (% choosing) | |
|---|-----------------------|---------|
| | Older | Younger |
| I do not want to be a burden on my family | 62 | 47 |
| I want to be treated with dignity when I can no longer speak for myself | 41 | 15 |
| I want to avoid pain and suffering | 40 | 53 |
| I want to maintain my capacity to think clearly | 36 | 61 |
| I want to leave good memories of my last days to my loved ones | 33 | 22 |
| I want to be able to make my own decisions | 22 | 37 |
| I want to experience a comfortable dying process | 21 | 14 |
| I want to be with my loved ones before I die | 18 | 30 |
| I want to be treated in accordance with my religious beliefs and traditions | 15 | 9 |
| I want to feel safe and secure | 12 | 12 |

Table 3. Impact of medical and non-medical factors on DNR decisions (1 = definitely should not resuscitate; 5 = definitely should resuscitate). The Bonferroni corrected p value for statistical significance in unpaired t-tests comparing older and younger patients = 0.002.

| Potential situation | Patients | |
|--|----------|---------|
| | Older | Younger |
| A 90 year old man with a heart attack | 3.6 | 3.8 |
| A 70 year old man with a heart attack | 4.8 | 4.9 |
| A 50 year old man with a heart attack | 5.0 | 5.0 |
| A 25 year old man with AIDS due to drug abuse | 2.3 | 2.1 |
| A 30 year old woman with AIDS from a blood transfusion | 2.7 | 3.1 |
| A 72 year old woman with severe dementia and pneumonia | 1.9 | 2.3 |
| A 73 year old man who is mentally alert and has pneumonia | 4.5 | 4.9* |
| A 65 year old woman with terminal cancer and severe pain | 1.7 | 1.5 |
| A 65 year old woman with terminal cancer but minimal pain | 3.1 | 2.7 |
| An 80 year old woman who is confined to a wheelchair and has pneumonia | 3.5 | 4.1 |
| An 82 year old man who is otherwise well but has pneumonia | 4.4 | 4.5 |
| A 65 year old woman with terminal breast cancer | 3.2 | 2.8 |
| A 65 year old woman with terminal heart failure | 3.6 | 3.8 |
| An 82 year old man living in a nursing home | 3.6 | 3.5 |
| An 83 year old man cared for by his wife at home | 4.1 | 4.4 |
| A 71 year old man with a severe illness if after recovery: | | |
| he would be back to normal | 4.9 | 5.0 |
| he would be always short of breath | 3.9 | 3.4 |
| he would be in constant pain | 2.3 | 2.6 |
| he would be unable to walk or dress without help | 4.1 | 3.8 |
| he would be very confused | 1.5 | 1.8 |
| A 73 year old woman if the chances of surviving were: | | |
| excellent (90–100%) | 4.9 | 5.0 |
| good (70–80%) | 4.7 | 5.0 |
| fair (50%) | 4.3 | 4.8* |
| poor (20–30%) | 3.5 | 4.1* |
| very bad (0–10%) | 1.6 | 2.3* |

All differences between matched situations within age groups were significant ($p < 0.001$) by paired t-test or ANOVA, as appropriate.

* $p < 0.001$ for comparison between older and younger patients.

DNR = do not resuscitate.

Patients do not have the medical and prognostic expertise of doctors and, in general, they (and their relatives) are prone to overestimate the likely success rate with CPR [21]. This is not surprising since we have found that television dramas are the most common source of information regarding resuscitation [2]. However, there is good evidence from the USA that education of patients about the likely outcome of resuscitation in different clinical situations can modify the preferences of patients [22,23].

The results of our study suggest that patients take a variety of medical and non-medical factors into account when considering resuscitation preferences. Although the ratings for resuscitation in many of the

potential situations may seem overoptimistic, it is clear that a low probability of success or the likelihood of a poor outcome greatly reduces patients' wishes for resuscitation. Thus, it is important to give adequate prognostic information when discussing CPR with patients [24]. Simple predictive rules to assist in this task are now available [25].

There was a strong feeling amongst elderly patients in particular that they do not want to be a burden on their family, whereas younger patients were more concerned about maintaining their capacity to think clearly and making their own decisions. Differences between what people hold valuable may account for some of the other differences between older and

younger patients. The most striking difference was in rating the importance of the patient as a participant in CPR decision making. This may indicate that in future elderly patients will be more assertive about playing an active role in decisions regarding their own health; alternatively, it can be argued that the greater burden of ill health in elderly people leads to a modification of views. Only longitudinal research can answer this question.

Acknowledgements

We are grateful to the consultants who allowed us to approach their patients and to Mark Ebell MD, Department of Family Medicine, Wayne State University, MI, USA, for permission to use and adapt clinical situations from his work.

References

- 1 Baskett PJF. The ethics of resuscitation. *Br Med J* 1986; **293**:189-90.
- 2 Mead GE, Turnbull CJ. Cardiopulmonary resuscitation in the elderly: patients' and relatives' views. *J Med Ethics* 1995; **21**:39-44.
- 3 Hill ME, McQuillan G, Forsyth M, Heath D. Cardiopulmonary resuscitation—who makes the decision? *Br Med J* 1994; **308**:1677.
- 4 Morgan R, King D, Prajapati C, Rowe J. Views of elderly patients and their relatives on cardiopulmonary resuscitation. *Br Med J* 1994; **308**:1677-8.
- 5 Heap MJ, Munglani R, Klinck JR, Males AG. Elderly patients' preferences concerning life-support treatment. *Anaesthesia* 1993; **48**:1027-33.
- 6 Gunasekera NPR, Tiller DJ, Clements LT, Bhattacharya BK. Elderly patients' views on cardiopulmonary resuscitation. *Age Ageing* 1986; **15**:364-8.
- 7 British Medical Association/Royal College of Nursing, in association with the Resuscitation Council, UK. *Statement on decisions relating to cardiopulmonary resuscitation*. London: BMA/RCN, 1993.
- 8 Williams R. The 'do not resuscitate' decision: guidelines for policy in the adult. *J R Coll Physicians London* 1993; **27**:139-40.
- 9 Edgren E. The ethics of resuscitation; differences between Europe and the USA—Europe should not adopt American guidelines without debate. *Resuscitation* 1992; **23**:85-90.
- 10 Hodkinson HM. Evaluation of a mental test score for the assessment of mental impairment in the elderly. *Age Ageing* 1972; **1**:223-38.
- 11 Yesavage JA. Geriatric depression scale. *Psychopharmacol Bull* 1988; **24**:709-11.
- 12 O'Keeffe ST, Noël J, Lavan JN. Cardiopulmonary resuscitation preferences in the elderly. *Eur J Med* 1993; **2**:33-5.
- 13 Doukas DJ, McCullough LB. *Handbook of geriatric assessment*. Rockville, Colorado: Aspen Publications, 1988:111-24.
- 14 Ebell MH, Doukas DJ, Smith MA. The do-not-resuscitate order: a comparison of physician and patient preferences and decision-making. *Am J Med* 1991; **91**:255-60.
- 15 Davies KN, King D, Silas JH. Professional attitudes to cardiopulmonary resuscitation in departments of geriatric and general medicine. *J R Coll Physicians London* 1993; **27**:127-30.
- 16 Florin D. Do not resuscitate orders: the need for a policy. *J R Coll Physicians London* 1993; **27**:135-8.
- 17 Schade SG, Muslin H. Do not resuscitate decisions: discussions with patients. *J Med Ethics* 1989; **15**:186-90.
- 18 Potter JM, Stewart D, Duncan G. Living wills: would sick people change their mind? *Postgrad Med* 1994; **70**:818-20.
- 19 Everhart MA, Pearlman RA. Stability of patient preferences regarding life-sustaining treatments. *Chest* 1990; **97**:159-64.
- 20 Doyal L, Wilsher D. Withholding and withdrawing life sustaining treatment in elderly people: towards formal guidelines. *Br Med J* 1994; **308**:1689-92.
- 21 Liddle J, Gilleard C, Neil A. The views of elderly patients and their relatives on cardiopulmonary resuscitation. *J R Coll Physicians London* 1994; **28**:228-9.
- 22 Schonwetter RS, Teasdale TA, Taffet G, Robinson BE, Luchi RJ. Educating the elderly: cardiopulmonary resuscitation decisions before and after intervention. *J Am Geriatr Soc* 1991; **39**:372-7.
- 23 Miller DL, Jahnigen DW, Gorbien MJ, Simbarti L. Cardiopulmonary resuscitation: how useful? Attitudes and knowledge of an elderly population. *Arch Intern Med* 1992; **152**:578-82.
- 24 Wagg A, Kinirons M, Stewart K. Cardiopulmonary resuscitation: doctors and nurses expect too much. *J R Coll Physicians London* 1995; **29**:20-4.
- 25 O'Keeffe S, Ebell MH. Prediction of failure to survive following in-hospital cardiopulmonary resuscitation: comparison of two predictive instruments. *Resuscitation* 1994; **28**:21-5.

Address for correspondence: Dr S T O'Keeffe, Department of Geriatric Medicine, Royal Liverpool University Hospital, Prescot Street, P O Box 147, Liverpool L69 3BX.