

CLINICAL ETHICS

Factors affecting physicians' decisions to forgo life-sustaining treatments in terminal care

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J Med Ethics 2002;28:109-114

Objectives: Treatment decisions in ethically complex situations are known to depend on a physician's personal characteristics and medical experience. We sought to study variability in decisions to withdraw or withhold specific life-supporting treatments in terminal care and to evaluate the association between decisions and such background factors.

Design: Readiness to withdraw or withhold treatment options was studied using a terminal cancer patient scenario with alternatives. Physicians were asked about their attitudes, life values, experience, and training; sociodemographic data were also collected.

Setting: Finnish physicians, postal survey.

Survey sample: Five hundred general practitioners, 300 surgeons, 300 internists, and 82 oncologists.

Results: Treatments most often forgone were blood transfusion (82%) and thrombosis prophylaxis (81%). Least willingly abandoned were intravenous (IV) hydration (29%) and supplementary oxygen (13%). Female doctors were less likely to discontinue thrombosis prophylaxis ($p=0.022$) and supplementary oxygen ($p<0.001$), but more readily x ray ($p=0.039$) and laboratory ($p=0.057$) examinations. Young doctors were more likely to continue antibiotics ($p=0.025$), thrombosis prophylaxis ($p=0.006$), supplementary oxygen ($p=0.004$) and laboratory tests ($p=0.041$). Oncologists comprised the specialty most ready to forgo all studied treatments except antibiotics and blood transfusion. The family's wishes (alternative 1) significantly increased treatment activity. Young and female practitioners and oncologists were most influenced by family appeal. Advance directives (alternative 2) made decisions significantly more reserved and uniform. Different factors in the physician's background were found to predict decisions to withdraw antibiotics or IV hydration.

Conclusion: The considerable variation observed in doctors' decisions to forgo specific life-sustaining treatments (LST) was seen to depend on their personal background factors. Experience, supervision, and postgraduate education seemed to be associated with more reserved treatment decisions. To increase the objectivity of end of life decisions, training, and research are of prime significance in this ethically complex area of medicine.

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Revised version received
16 June 2001
Accepted for publication
28 August 2001

Decision making in terminal care is a demanding and stressful duty for all involved. Frequently, moreover, the situation is ethically complex, and the decisions have been shown to depend not only on patients' preferences or clinical circumstances but also on the personal characteristics of the physician.¹ Our own previous studies have shown physicians' age, gender, specialty, marital status, and experiences of severe disease in their own families to be associated with their decisions between palliative or active treatment in terminal care. Also, attitudes concerning for example withholding life-sustaining treatment (LST) and doctor-assisted suicide, and opinions on a doctors' ability to assess a patient's pain, have proved to be significant predictors of decisions.²

From the ethical and legal standpoint the withdrawal or withholding of treatment in terminal care are on a par.³ Many doctors, however, think that deciding to withdraw treatment once initiated is ethically and legally more often wrong or more difficult than deciding to start it at all.⁴ Decisions to withdraw are taken less frequently than decisions to withhold.⁵⁻⁶ Wide variation has been found in physicians' attitudes regarding continuation of specific LSTs.⁷ According to earlier studies the wishes of patients' families also have a great influence on end of life decisions.^{5,8} In addition, our own previous study showed that a physician's gender and age influenced attitudes toward euthanasia and withdrawal of LST.²

Advance directives have been developed to help patients exercise greater self determination during the last days of life.³⁻⁹ Commonly, the instructions refer specifically to refusals of

treatment, including life-prolonging treatment, when there is no hope of cure. There is considerable variation, however, in the value physicians place on these directives.⁹⁻¹¹ One third of American doctors and only six per cent of Finnish doctors report having themselves completed an advance directive.¹⁰⁻¹²

Actual clinical situations vary substantially and no orders, directives or guidelines can give direct answers to complex end of life questions. There are certainly acceptable clinical indications for the use, for example, of antibiotics, IV hydration, blood transfusion, and laboratory and x ray examinations even close to death. None the less there is reason to assume that in many terminal cases their use is less than well grounded.

The aim of this study was to assess variability in end of life decisions concerning specific treatments and its association with physicians' personal characteristics, life-experiences and training. The readiness of Finnish doctors to withhold or withdraw several modes of LST was evaluated by a hypothetical scenario describing a definitively terminal cancer patient. More specifically we sought to evaluate the influence of the family's wishes and the patient's advance directive on the decisions in question.

METHODS

Participants

A postal survey was conducted in May 1999. A questionnaire was sent to a stratified sample of 1100 Finnish physicians involved in cancer care. From the register of the Finnish Medical Association 300 surgeons, 300 specialists in internal

Table 1 Proportion (%) of physicians deciding to withdraw a treatment in the given patient scenarios according to speciality

Treatment	Scenario	All	Speciality				
			Surgery (N=175)	Medicine (N=184)	GP (N=316)	Oncology (N=54)	
Antibiotics	Original scenario (OS)	60	67	57	57	68	p<0.001
	A1 (OS + family's appeal)	40	54	38	33	36	
	A2 (OS + advance directive)	88	89	87	88	85	
Iv hydration	Original scenario (OS)	29	21	23	31	60	p<0.001
	A1 (OS + family's appeal)	18	16	16	17	34	p<0.001
	A2 (OS + advance directive)	56	44	53	60	81	p<0.001
Nasogastric tube	Original scenario (OS)	54	58	55	49	70	p=0.008
	A1 (OS + family's appeal)	43	51	45	35	56	p<0.001
	A2 (OS + advance directive)	74	74	74	71	89	P=0.043
Thrombos prophylaxis	Original scenario (OS)	81	82	87	74	93	p=0.002
	A1 (OS + family's appeal)	72	79	75	63	85	p=0.002
	A2 (OS + advance directive)	93	94	95	89	100	
Mechanical ventilation	Original scenario (OS)	79	79	82	79	93	p=0.017
	A1 (OS + family's appeal)	64	65	67	58	85	p=0.017
	A2 (OS + advance directive)	92	90	91	93	98	
Supplementary oxygen	Original scenario (OS)	13	18	10	10	23	p=0.034
	A1 (OS + family's appeal)	9	12	7	7	11	p=0.003
	A2 (OS + advance directive)	33	39	36	27	40	p=0.048

Withdraw, 4–5 on Likert scale 1–5 “definitely would not withdraw to definitely would withdraw”. Statistical significance by χ^2 test in cross-tabulation to three decision categories (Likert 1–2, 3 and 4–5). Differences between original scenario, alternative 1, and alternative 2 were all statistically significant ($p<0.001$) by Friedman's test.

medicine, and 500 health centre practitioners (GPs) were chosen at random, in each specialty. The questionnaire was also mailed to all Finnish oncologists ($n=82$). Reminders were sent in June and September.

Questionnaire

The 12 page questionnaire (40 questions, 119 variables) was designed to study doctors' treatment decisions in ethically complex terminal care situations. Seven hypothetical patient scenarios based on clinical cases were presented. One of them, involving a terminally ill cancer patient, constitutes the topic of this report. In addition, two alternative settings (A1 and A2) were presented after the original scenario (OS), see Appendix. Respondents were instructed at the outset to answer the questions in sequence from beginning to end and not to change their answers later.

Following the patient scenarios, attitudes to certain moral and ethical values and opinions on work related matters were assessed using a 10 cm visual analogue scale (VAS) from definitely disagree to definitely agree. The items concerned euthanasia, palliative care, the role of religion in ethical decisions, advance care directives, health care economics, and physicians' satisfaction with their own health and salaries. Finally, sociodemographic data were collected.

The questionnaire was tested in a pilot study in January 1999. It was sent to 45 physicians (GPs and specialists) twice, with a two week interval between mailings, in order to check the reliability of responses to the patient scenarios and the questions on attitudes and values. Thirty physicians returned two acceptable questionnaires. The kappa coefficient for an acceptable scenario or question was determined to be more than 0.40.

Statistical analysis

The answers on the 5-step Likert scale in the scenario were converted to a 3-step scale: 1–2 for “would not withdraw or withhold”; 3 for “don't know”, and 4–5 for “would withdraw or withhold”; and were cross-tabulated with physicians' gender, age, and specialty. Statistical significance in the cross-tabulations was studied by χ^2 test. Statistical significance of

differences between decisions in the OS, A1, and A2 was studied by Friedman's test. The relationships between treatment decisions (three categories) on antibiotic therapy and IV hydration in the OS and variables indicating attitudes (VAS) were examined using the Kruskal-Wallis test.

Data analysis was carried out using SPSS/Win (Version 9.0).

RESULTS

The response rate was 62%; 729 acceptable returns being included in the present study. The mean age of the respondents was 45 years with significant variation between specialty groups: 48 for surgeons and internists, 42 for GPs, and 46 for oncologists. The proportions of female doctors were 19% among surgeons, 33% among internists, 54% among GPs and 57% among oncologists. Altogether 77% of the oncologists had received postgraduate training in terminal care, while this was rare among the remainder (11–32%). Oncologists also had most professional supervision and were most often connected to societies for palliative care and pain control.²

Withdrawing treatments

Thrombosis prophylaxis and mechanical ventilation were withdrawn by almost all doctors (81% and 79%, respectively), intravenous hydration and supplementary oxygen by only a small minority (29% and 13%, see table 1). In the first alternative scenario (A1) the daughters' urgent request for “everything to be done” had a significant (Friedman's test $p<0.001$) reductive influence on readiness to withdraw in all treatments studied. The withdrawal of antibiotics and IV hydration was reduced by a third in this alternative; in other treatments the change was smaller (see table 1).

In the second alternative (A2) the advance directive markedly reduced the differences in decisions. Here, overall, physicians made fewer active decisions compared to the OS. In A2 only one tenth would have continued antibiotics, thrombosis prophylaxis, or mechanical ventilation. However, two thirds would continue supplementary oxygen and half would continue intravenous fluids. The ranking of the treatments was not altered in the alternative scenarios (see table 1).

Table 2 Proportion (%) of physicians deciding to withhold a treatment in the given patient scenarios according to speciality

Treatment/examination	Scenario	All	Speciality				
			Surgery (N=175)	Medicine (N=184)	GP (N=316)	Oncology (N=54)	
Blood transfusion	Original scenario (OS)	82	81	78	85	83	p=0.046
	A1 (OS + family's appeal)	66	73	58	67	70	
	A2 (OS + advance directive)	94	95	92	94	96	
Chest X-ray	Original scenario (OS)	59	53	60	59	79	p=0.011
	A1 (OS + family's appeal)	48	44	45	49	65	
	A2 (OS + advance directive)	81	80	84	80	85	
Laboratory tests	Original scenario (OS)	59	56	57	58	81	p=0.019 p=0.033
	A1 (OS + family's appeal)	45	48	40	42	66	
	A2 (OS + advance directive)	83	85	83	81	94	
Pleural drainage	Original scenario (OS)	56	49	59	56	70	p=0.014
	A1 (OS + family's appeal)	47	44	49	45	57	
	A2 (OS + advance directive)	80	75	86	79	81	

Withhold, 4–5 on Likert scale 1–5 “definitely would not withhold - definitely would withhold”. Statistical significance by Chi-square test in cross-tabulation to three decision categories (Likert 1–2, 3 and 4–5). Differences between Original scenario, Alternative 1 and Alternative 2 were all statistically significant ($p < 0.001$) by Friedman's test.

In the OS female doctors showed less readiness to withdraw thrombosis prophylaxis and supplementary oxygen ($p=0.022$ and $p < 0.001$, respectively). This difference was also seen in A1, where female doctors were also less in favour of withdrawing antibiotic treatment ($p=0.005$) and IV hydration ($p=0.027$). Overall, the family's appeal had greater impact on women doctors in most contexts. In A2 a gender-linked difference emerged only in the decision to withdraw supplementary oxygen; only 23% of women were for withdrawal compared to 40% of men ($p < 0.001$) in spite of the advance directive.

In assessment in three age groups (<35, 35–49, 50+) there was a clear trend for young physicians to show less readiness to forgo LST. In the OS the difference was statistically significant in antibiotic treatment ($p=0.025$), thrombosis prophylaxis ($p=0.006$), and supplementary oxygen use ($p=0.004$). These differences also persisted in A1, and here young physicians were also significantly more active in continuing IV hydration ($p=0.005$). The most outstanding difference by age, however, was in the degree to which the family's appeal influenced readiness to withdraw antibiotics. Only 24% of the youngest physicians would have withdrawn antibiotic treatment in this alternative, as against 50% in the oldest age group ($p < 0.001$). The advance directive greatly influenced young doctors; no differences were seen by age in A2.

Oncologists evinced significantly the greatest readiness to withdraw all treatments but antibiotics in the OS (see table 1). The difference was greatest in the case of IV hydration; 60% of oncologists would withdraw it, compared to 21% of surgeons, 23% of internists, and 31% of GPs ($p < 0.001$). This difference by speciality was also seen in A1, again in all cases but antibiotic treatment. In this alternative surgeons were most in favour of withdrawal ($p < 0.001$). Throughout a trend was seen for the family's appeal to have least influence on the surgeons. On the other hand, oncologists showed a marked change in decisions in A1, in spite of the proneness to forgo characterising this specialty group in the OS. A written advance directive evened out the differences between specialties. However, in the case of IV hydration, nasogastric tube, and supplementary oxygen, oncologists were still significantly more in favour of withdrawal.

Withholding treatments

Blood transfusion was the measure most readily withheld (82%). Chest x ray, laboratory tests and pleural drainage, were

forgone by only a slight majority of doctors (see table 2). The family's wishes (A1) again significantly reduced readiness to withhold in all measures studied (Friedman's test $p < 0.001$), and the advance directive (A2) significantly increased readiness to withhold all treatments and made them uniform.

In the OS female doctors were more likely to withhold x ray and laboratory tests ($p=0.039$ and $p=0.057$, respectively). In A1 women were again more likely to withhold x ray examination, but in contrast less likely to forgo blood transfusion ($p=0.025$).

There was a trend towards fewer withholding decisions among the youngest doctors in all measures studied. In the OS 48% of the youngest group would have withheld laboratory tests, compared to 62% of the oldest ($p=0.041$). The family's appeal influenced every age group fairly uniformly, maintaining the trend for young doctors to be most active in treatments. Only 53% of young doctors would have withheld blood transfusion, compared to 73% of their oldest colleagues, when the family insisted that all was to be done ($p=0.009$). The advance directive evened out the differences between age groups.

In the OS 79% of oncologists would have withheld chest x ray examination compared to 53–60% of other specialists ($p=0.011$) and 81% of them would have withheld laboratory tests as against 56–58% of the remainder ($p=0.019$, table 2). Oncologists were more likely to withhold pleural drainage in the OS ($p=0.014$). Only the attitude to blood transfusion was more or less uniform in the OS. The family's appeal for “everything to be done” again influenced every specialty group towards less withholding of treatments. The trend among oncologists to greater readiness to withhold remained. In these withholding decisions there was also a tendency for surgeons to be less influenced by the family's wishes. The advance directive had a great and uniform influence on the readiness to withhold treatments among all specialists.

Antibiotic and intravenous hydration treatment

A more detailed analysis of the background factors involved in decisions to use antibiotics and intravenous hydration is presented, because their use is of particular importance in everyday ethical considerations in terminal care.

More marked disapprobation of active euthanasia (expressed on VAS 0–10cm) was significantly ($p=0.041$) associated with the decision to continue antibiotics (median VAS 8.7 (lower quartile 6.5, upper quartile 9.7) versus median 8.1 (4.7,

9.3) of those who were for withdrawal). A similar reaction was seen in opinions on the influence of religion on end of life decisions (median 4.4 (0.8, 6.8) for physicians who decided to continue antibiotics, 4.6 (1.5, 6.8) for those who didn't know, and 2.5 (0.5, 7.0) for those who would withdraw, $p=0.045$). Physicians who would have withdrawn antibiotic therapy were more satisfied ($p=0.005$) with their profession than those who would give this treatment (median 8.2 (7.3, 9.1) versus 7.6 (6.5, 8.7)). No such differences in these attitudes or opinions were found in relation to decisions on IV hydration. On the other hand, the decision to use IV hydration in the OS was clearly related to physicians' postgraduate training in terminal care: a withdrawal decision was made by 40% of those with such training compared to 25% of those without ($p<0.001$).

Attitudes to withdrawal of LST in general were logically more condemnatory among physicians who would withdraw either antibiotics (median 1.4 (0.5, 4.2) versus 0.9 (0.4, 2.0), $p=0.005$) or IV hydration (median 1.2 (0.5, 2.6) versus 0.7 (0.3, 1.9), $p=0.001$). The item "I feel burn out" prompted less agreement among doctors who withdrew, and this was also true both in the case of the decision to maintain antibiotics (median 1.4 (0.6, 3.3) versus 1.9 (0.9, 4.0), $p=0.014$) and the decision on hydration (median 1.2 (0.5, 3.2) versus 1.8 (0.9, 3.8), $p=0.027$).

DISCUSSION

General findings

There was considerable variation in the extent to which different specific life-supporting options were forgone, this was so in the case of both withholding and withdrawing decisions. The doctor's gender, age, and specialty markedly influenced decisions. The wishes of the patient's family that "all be done" significantly increased the treatment activity of all doctors, and an advance directive led to markedly fewer life-supporting decisions. Doctors' personal attitudes, experience and training also had a marked influence on their decisions. Oncologists were the most conservative specialty.

All postal surveys entail a risk of selected responses, although the response rate in this survey was higher than the average for surveys among doctors.¹³ There is also a risk that responses to hypothetical scenarios may diverge from actual measures taken. Actual patterns of practice may be influenced by factors not directly reflected in a written scenario, for example patient-physician interaction, social desirability response,¹⁴ and other biases of subconscious origin.¹⁵ According to Moskowitz *et al*,¹⁶ however, keeping in mind such limitations, written simulations afford an effective research instrument in elucidating the decision making process.

The majority of doctors would have continued treatment in many of the options. This relatively high level of activity is possibly attributable to the fact that doctors fear legal or social consequences and are therefore more active in making decisions for their patients than they would be for themselves in similar circumstances.^{10, 17} Variation in this respect probably explains a considerable proportion of differences in decisions. Our previous studies confirmed that legal concerns are more important for young and female doctors.²

Factors influencing withdrawal or withholding decisions

There was great variation in the extent to which different specific life-supporting options were forgone. Our study provides no direct support for the earlier findings⁴ that doctors deem withdrawal of a previously started treatment to be more wrong than withholding. This, however, needs further studies with various scenarios. The most prominent difference between the cases of withdrawing and withholding decisions was that female doctors, being less in favour of many withdrawal decisions, showed even greater activity in withholding than men. This is possibly due to the different

contents of the treatment options in our scenario; female doctors may be thought to have made more "reasonable" decisions to withhold futile examinations of no immediate significance for the patient's life, and on the other hand to have made more "emotional" and "principled" decisions to continue life-sustaining treatments. Such a conception is supported by our previous finding that female physicians are more condemnatory in their attitudes to euthanasia and are more religious.²

Antibiotics would be withdrawn by the majority of respondents in the original scenario, which reflects greater concern for overuse than the earlier study.⁴ However, decisions varied. Our finding that the attitude to withdrawal of antibiotics was significantly associated with attitudes toward euthanasia and religion supports the conception that maintenance of antibiotic treatment is a matter of principle; disapprobation may be considered to play an important role in decision making in this particular context.

In one palliative care unit antibiotics have been used for 71% of infections.¹⁸ This is not necessarily overuse, since antibiotics have many benefits even for dying patients. They have been found, for example, to provide good pain control in certain types of terminal cancer.¹⁹ In end of life decision making it should also be remembered, however, that infection is a common cause of death in cancer patients, often perceived as a natural part of the dying process.²⁰

In accord with earlier findings^{7, 21} intravenous hydration was here an option very seldom withdrawn. This may be explained by the notion common among doctors that giving fluid relieves thirst and thus reduces suffering. There would appear, however, to be no demonstrable association between severity of dehydration symptoms and fluid intake.²² Doctors with little experience in terminal care may also be unaware of the evidence that dying patients do not experience hunger, and that dehydration may in fact reduce suffering in the terminal hours of life.²³

Earlier studies support our finding that specialty affects the frequency of decisions not to treat.^{1, 21} The influence of training and experience on decisions seems to depend on the specific treatment considered (see table 1). In the case of withdrawing IV hydration, specialty proved to be more important than in the case of antibiotic treatment. Oncologists in particular opted for different solutions than others. Our finding that postgraduate training greatly promotes readiness to forgo IV hydration also supports the idea that knowledge alters attitudes. Training and experience probably make for a more realistic appreciation of the prognoses and the efficacy of the treatments used in end of life situations; non-treatment decisions in terminal care are estimated to shorten the life of the patient in most cases by less than a week.²¹

It was also interesting to note that the response "I feel burn out" was linked to decisions on both antibiotic treatment and IV hydration. This association possibly implies that physicians who feel overtired are prone to make decisions less likely to call for justifications. In such cases continuation of treatment can be considered to be a solution which it is easier for them to make. For example, making a decision to continue active treatment is a relatively easy decision to make because then the doctor does not have to explain to the family why the treatment was forgone.

Influence of family's wishes and advance directive

The family's appeal that "everything possible be done" effected a significant reduction in withdrawal and withholding of treatments, in line with earlier findings.^{5, 8, 24} Overall, the influence was greatest in the case of antibiotics (see table 1), supporting the conception that these drugs are often used in terminal care for other than precisely antimicrobial purposes. In end of life decisions doctors are often not only treating the disease and the patient but also themselves or the patient's

family.²⁵ Female and young doctors and oncologists were most markedly influenced by the family's appeal. Empathy and greater emotional sensitivity among female practitioners could explain the difference, but the matter requires further investigation. In the case of young doctors, uncertainty may be partly the reason for deciding according to the family's wish. The oncologists in this study, having significantly more postgraduate training and supervision,² may take a more holistic view in caring for the whole family.

In the second alternative (A2), involving an advance directive, forgoing treatments was significantly more frequent compared to the original scenario. Doctors also made particularly uniform decisions. None the less, IV hydration was still continued by half of the doctors. Here the oncologists were the only group to differ; only one fifth of them would have continued parenteral hydration and they would also more readily have withdrawn feeding by nasogastric tube. This may again be attributable to their greater experience, training and supervision in terminal care, as shown in our previous study.² In that parallel study the oncologists were the group least influenced in their decisions by an advance directive.² Considering that they were in general the most ready to forgo treatments it may be thought that their decisions would in any case have been in accord with those directives. The advance directive increased the proportion of young doctors who would forgo treatments to the same level as among older colleagues. This would suggest that an advance directive had a greater impact on, and would be more helpful in, young doctors' decision making.

CONCLUSIONS

The doctor's responsibility to make decisions in the patient's best interests and to respect the patient's rights makes it crucial to weigh precisely the justification of every treatment mode in an end of life situation. In terminal care the primary aim is to give care and comfort, and unnecessary and ineffective treatments may in fact have the opposite effect. The patient has a right to assume that the decisions made are objective—that is, clearly dependent solely on his or her situation and not on the physician's personal characteristics or sporadic training. Our results show that experience and training, as well as personal life-values and attitudes to terminal care, markedly influence decision making in this situation. Specific postgraduate education should be undertaken by all physicians involved in end of life care. Research aiming at a better knowledge of prognoses and the real efficacy of treatments is also important. Supervision by older and more experienced colleagues, especially where ethically complex decisions in terminal care are involved, should be available.

ACKNOWLEDGEMENTS

In this research we cooperated in the European Network of Teaching Cancer Care in General Practice. The coordination of this network is done by the Department of General Practice/Family Medicine, Division Public Health, Academic Medical Center/University of Amsterdam, The Netherlands. The whole project is financially supported by the EU's Europe Against Cancer Program. The Medical Research Fund of Tampere University Hospital, the Pirkanmaa Cancer Society, The Finnish Medical Association and The Research Institute of The Evangelical Lutheran Church of Finland also supported this work.

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APPENDIX

Scenario: A 62 year old male patient with pulmonary cancer and metastases is under your care in a hospital ward. He is receiving high-dose morphine medication. Due to respiratory failure he became comatose last night. He also suffers from severe anaemia and has abundant pleural exudation and fever.

Which of the following treatments already started (*) or planned would you withhold or withdraw. There is no possibility to discuss the matter with the family and there is no advance directive.

Would you withhold or withdraw any of the following treatment modes; express your decision on the scale 1–5

In the following two alternatives extra information is provided in the same patient scenario:

(A1) The patient's daughters come to you distressed and crying, expressing their hope that everything possible will be done to save their father's life. Which of the following treatments already started (*) or planned would you withhold or withdraw in this situation? (Same alternatives as above)

(A2) There is a written advance directive in the patient's medical chart in which he expresses his wish that all active treatment be withdrawn, if there is no hope of recovery. Which of the following treatments already started (*) or planned would you withhold or withdraw in this situation? (Same alternatives as above)

Table

	I definitely would not		Yes I definitely would		
a) antibiotics (*)	1	2	3	4	5
b) mechanical ventilation (*)	1	2	3	4	5
c) blood transfusion	1	2	3	4	5
d) pleural drainage	1	2	3	4	5
e) chest X-ray examination	1	2	3	4	5
f) laboratory examination	1	2	3	4	5
g) iv hydration (*)	1	2	3	4	5
h) naso-gastric tube (*)	1	2	3	4	5
i) thrombosis prophylaxy (*)	1	2	3	4	5
j) supplementary oxygen (*)	1	2	3	4	5

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