

Rachel Duarte Moritz¹, Fernando Osni Machado², Maíke Heerdt³, Bruna Rosso³, Guilherme Beduschi³

Evaluation of medical decisions at the end-of-life process

Avaliação das decisões médicas durante o processo do morrer

1. PhD, Medical Supervisor of Critical Care Residence Program at Hospital Universitário (HU) and Adjunct Professor of the Universidade Federal de Santa Catarina - UFSC - Florianópolis (SC), Brazil.

2. PhD, Adjunct Professor of the Universidade Federal de Santa Catarina - UFSC - Florianópolis (SC), Brazil.

3. Medical student (2008) of the Universidade Federal de Santa Catarina - UFSC - Florianópolis (SC), Brazil.

Received from the Intensive Care Unit of the Hospital Universitário Polydoro Ernani de São Thiago da Universidade Federal de Santa Catarina - UFSC - Florianópolis (SC), Brazil.

Submitted on July 14, 2008

Accepted on May 12, 2009

Author for correspondence:

Rachel Duarte Moritz
Rua João Paulo 1929 - Bairro João Paulo
CEP: 88030-300 – Florianópolis (SC), Brazil.
E-mail: rachel@hu.ufsc.br

ABSTRACT

Objectives: To evaluate the medical decisions at end-of-life of patients admitted at HU/UFSC and to compare these decisions and the profile of patients who died in the intensive care unit (ICU) to those who died in medical (MW) and surgical wards (SW).

Methods: This is a retrospective and observational study. Demographic data, clinical features, treatment and the end-of-life care decisions of adult patients who died in wards and the intensive care unit of HU/UFSC from July/2004 to December/2008 were analyzed. For statistical analysis the Student's t, χ^2 and ANOVA tests were used: (significance $p < 0.05$).

Results: An analysis was made of 1124 deaths: 404 occurred in ICU, 607 in MW and 113 in SW. The overall hospital mortality rate was 5.9% (ICU=24.49%, MW=7.2%, SW=1.69%). Mean ages of patients were: ICU=56.7, MW=69.3 and SW=70.4 years ($p < 0.01$). Withhold-

ing/withdrawing life support was performed prior to 30.7% of deaths in the intensive care unit and 10% in the wards ($p < 0.01$). Cardiopulmonary resuscitation was not carried out in 65% of cases in ICU, 79% in MW and 62% in SW. Besides cardiopulmonary resuscitation, the more frequent withholding/withdrawing life support in the intensive care unit were vasoactive drugs and in the wards refusal of admission to intensive care unit. Do-not-resuscitate order was documented in 2.4% of cases in ICU and 2.6% in MW. Palliative and comfort care were provided to 2% of patients in ICU, 11.5% in MW and 8% in SW. Terminality of the disease was recognized in 40% of cases in ICU, 34.6% in MW and 16.8% in SW.

Conclusions: The profile of patients who died and medical decisions during the end-of-life process were different in the intensive care unit, clinical and surgical wards.

Keywords: Attitude to death; Dead; Hospice care; Treatment refusal; Bioethics

INTRODUCTION

In today's world, most deaths take place in hospitals and, more specifically, in the intensive care units (ICU). It is undeniable that life expectancy has increased and that modern medicine permits treatment and cure of innumerable diseases. However, often, technology has led to a prolongation of dying. This practice characterizes therapeutic obstinacy, viewed as an unnecessary medical practice, resultant from possibilities offered by technoscience and the will to prolong life at any cost.⁽¹⁾ In the endeavor to avoid therapeutic obstinacy, physicians working in the ICU are faced with the dilemma of maintaining or discontinuing treatments considered

futile or useless. However, healthcare professionals working in other hospital units experience different situations. Frequently they resist facing terminality of their patients⁽²⁾ and, often request admission to the ICU for patients with terminal disease. This reality has brought about a growing need to accept human finitude, the limitation of curative therapeutics and performance of hospice care to bearers of terminal diseases.

Knowledge of the treatment given to those dying is needed and further debates on humanization of end-of-life, an attitude that may reduce emotional distress and financial costs generated by maintenance of a futile treatment.⁽³⁻⁶⁾

This study proposes to assess medical practices adopted at the end-of-life of patients who died in the HU/UFSC and compare these practices and the epidemiological profile of those who died in the ICU with those who died in the clinical medicine (MW) and surgical wards (SW).

METHODS

A retrospective, observational, descriptive and analytical study was carried out at the Hospital Universitário da Universidade Federal de Santa Catarina (HU/UFSC), after approval by the institution's ethics committee. The hospital has 176 beds in the clinical and surgical wards and 7 beds in the ICU. It is considered to be of high complexity and a reference for general surgery and surgery of the digestive apparatus. In the HU/UFSC there is no neurosurgery or cardiac surgery, therefore patients requiring these services are referred to other hospitals. The hospital has an ample program of medical residency in the surgery as well as clinical areas. Intensive care medical residency exists since 2002.

Data registered by members of the Hospital Deaths Commission (HDC) of patients older than 14 years, who died during stay, from July 2004 to December 2008. Patients who died in the emergency or obstetrics wards were excluded.

Registered data were in the files of hospital deaths investigation prepared by members of the HDC, who authorized their use. This commission is comprised of 5 physicians, 1 pediatrician, 1 gynecologist, 1 surgeon and 2 intensivists who monthly consult statistics of the information system of the HU/UFSC and request medical charts of patients who died in the institution, recording information in an

investigation file. These professionals were trained to uniformly interpret the data and meet monthly to discuss cases.

An overall mortality rate was calculated, considered as the percent ratio between number of deaths of patients who arrived alive and the number of patients who were discharged.⁽⁷⁾ Data regarding clinical and demographic characteristics of patients were computed, such as: age, gender, length of hospital stay, admission and length of stay in the ICU, primary diagnosis, month, hour and place of death. Information pertinent to decision taking and care at end-of-life were collected from the report of physicians belonging to the HDC. Terminality of the disease was defined when there were records such as: "reserved/poor prognosis", "poor prognosis", "information to family members about irreversibility of the patient's condition", "critically ill/terminal stage", "severe condition, refractory to therapy" or when there was evidence of withdrawing and withholding therapy (WWT). Presence of a strategy for comfort was established by assessment of the records that pointed out: "palliative care", "support and comfort cares", etc. Regarding treatment during the end-of-life it was assessed if death was preceded by cardiovascular resuscitation maneuvers (CVR) and if a do-not-resuscitate order (DNR) existed. It was further registered, if there has or has not been a withdrawing or withholding of therapy such as vasoactive drugs (VAD), mechanical ventilation, dialysis methods, antibiotics, blood transfusion or blood products, nutrition and admission to ICU.

Variables were analyzed using the Chi square (χ^2), Student's *t* and ANOVA/Bonferroni tests and a *p* < 0.05 value was considered significant.

RESULTS

From July 2004 to December 2008, 21,739 adult patients were admitted to the wards and ICU of HU/UFSC. Of these 10,451 were admitted in the clinical units, 9,569 in the surgical and 1,719 in the ICU.

In this period, in the assessed units 1294 patients died. Overall mortality rate in the hospital was of 5.9%. This rate was of 1.69% in the MW, 7.2% in the SW and 24.5% in the ICU. There was a loss of 13% of data and 1126 files were analyzed.

Demographic characteristics of patients included in the study are described in table 1. Statistical analysis discloses that in the ICU there was a prevalence of

the male gender and of younger patients ($p < 0.001$).

Table 2 shows the care given to end-of-life patients in the different hospital units. A significant difference was found regarding higher frequency of WWT in the ICU. This difference was also observed regarding the non CRR in MW and non recognition of life terminality in MW.

Clinical and demographic characteristics of pa-

tients who died in ICU with or without full treatment are shown in table 3. It was found that, in 30.7% of cases there was WWT. In these case administration of VAD was the most frequently withdrawn or withheld therapy ($n=60$). In 11 patients all medication was withdrawn but sedation/analgesia and mechanical ventilation were maintained. Inspired fraction of Oxygen was reduced to 21% in 11 patients. Other

Table 1 – Demographic characteristics of patients who died in different units of the hospital

Demographic variables	Place of admission			p Value
	Intensive care unit (N=440)	Clinical medicine unit (N=607)	Clinical surgery unit (N=113)	
Gender				
Male	250 (61.6)	330 (54.4)	55 (48.7)	$p < 0.01$
Female	156 (38.4)	277 (45.6)	58 (51.3)	
Age (years)	56.7 \pm 17.9	69.3 \pm 16.4	70.4 \pm 16.0	$p < 0.01$
Admission prior to death (days)	8.7 \pm 11.5	11.4 \pm 12.0	10.0 \pm 11.0	NS

NS – not significant. Results shown in N (%) or mean \pm standard deviation. Chi square or ANOVA.

Table 2 – Practice adopted during the end-of-life process in different sectors of the hospital

Practices during the end-of-life process	Intensive care unit (N=404)	Clinical medicine unit (N=607)	Clinical surgery unit (N=113)	p Value
Withdrawing/withholding of therapy	124 (30.7)	63 (10.4)	11 (9.7)	< 0.01
With no cardiorespiratory resuscitation maneuvers	262 (65.0)	480 (79.0)	70 (62.0)	< 0.01
Do not resuscitate order	10 (2.4)	16 (2.6)	0	NS
Acknowledgement of life terminality	163 (40.0)	210 (34.6)	19 (16.8)	< 0.01
Hospice care	8 (2.0)	70 (11.5)	9 (8.0)	< 0.01

NS – not significant. Results shown in N (%). Chi square.

Table 3 – Clinical and demographic characteristics of patients who died in the intensive care unit with or without full treatment

Variables	Patients without full treatment (N=124)	Patients with full treatment (N=280)	p Value
Gender			
Male	75 (60.4)	173 (61.8)	NS
Female	49 (39.6)	107 (38.2)	
Age (years)	61 (\pm 16.80)	55 (\pm 18.05)	< 0.01
APACHE II	28 (\pm 8.63)	29 (\pm 10.0)	NS
ICU length of stay (days)	10 (\pm 12.83)	5 (\pm 6.96)	< 0.01
Diagnosis at admission			
Acute illness (sepsis, AMI, ARF)	30 (24.1)	56 (20.0)	NS
Chronic illness (COPD, liver disease)	60 (48.4)	73 (26.0)	< 0.01
AIDS or neoplasm	24 (19.3)	15 (5.4)	< 0.01
Others	10 (8.0)	136 (48.6)	< 0.01

APACHE – *Acute Physiologic and Chronic Health Evaluation*; ICU – intensive care unit; AMI – acute myocardial infarction; ARF – acute respiratory failure; COPD – chronic obstructive pulmonary disease; AIDS – acquired immunodeficiency syndrome; NS – not significant Results expressed in N (%) or mean \pm standard deviation. Chi square or ANOVA.

withdrawn or withheld therapies were: dialysis (24 cases), non-optimization of treatment (8 cases), antibiotics (8 cases) and total parenteral nutrition (1 case). Regarding diagnosis for admission, WWT was more common in patients diagnosed with chronic disease, acquired immunodeficiency syndrome (AIDS) or neoplasm ($p < 0.001$).

Twenty seven patients were discharged from ICU prior to death. These patients were considered victims of terminal disease and were referred to the wards as they could not benefit from intensive treatment and the purpose was to provide greater comfort. Four of these patients died in the SW and 23 in the MW.

DISCUSSION

Evidence that in the 21st Century death primarily takes place in the hospital setting and more specifically in the ICU,^(3,8,9) forced professionals of these institutions to learn how to live with and manage the individual during the end-of-life process.

Life expectation of the Brazilian population tends to increase,^(10,11) and it should not be forgotten that diagnosis of the baseline pathology and age of the patient are the most important risk of death predictors.⁽¹²⁾ In hospitals, patients who die in the wards are historically older than those who die in the ICU.^(4,13-15) Nowadays, chronic diseases are responsible for the majority of deaths,^(16,17-21) and acceptance of therapeutic limitation of cancer patients is more common.⁽²²⁾ Similar results were signaled in this work where it was found, that even in the ICU, where ideally patients with a recovery potential are admitted, 42.6% of admissions terminate in death. These were of patients with chronic disease such as neoplasms, liver disease, AIDS and chronic obstructive pulmonary disease. For these patients WWT was more common.

Care to patients with terminal disease, without a possibility of curative therapy, rests primarily upon acceptance of human finitude and acknowledgement of medical incapacity to "always cure". Therefore, it is important to make hospice care strategies available, of which first priority must be given to control of pain and discomfort of patients and assisting well-being. It is noteworthy that withdrawal of futile therapies that only prolong the end of life, are part of the hospice care focus.^(19,20) In this study it was found that WWT, excluding non-CRR, was more common in critically ill patients, highlighting that sedation

and analgesia were maintained for all these patients. These are considered end of life palliative actions.

Works reviewed show that healthcare professionals are capable of recognizing symptoms associated to imminence of death, in the majority of patients. However, they often fail to broach the subject with the ill denying them a prescription for adequate relief of symptoms.^(9,20) The same was true for this study. It is important to mention that many physicians do not optimize hospice care, mainly pain control, fearing a possible side effect of sedation analgesia drugs. In many occasions, prescription of opioids is avoided for fear of chemical dependency or respiratory depression. It must be considered that the physician prescribes these drugs for analgesia and that all drugs have side effects, often not easily perceived. Therefore, medical responsibility rests with the intention and not with the results of treatment.⁽²¹⁾

In this work it was found that often physicians wrote in the medical chart "reserved prognosis, family members aware", to infer that these patients were victims of terminal disease and should not be resuscitated in case of a cardiorespiratory arrest. In contrast, it was perceived that CRR maneuvers were performed in a minority of patients (32%). It is noteworthy that patients who died in the wards received all the available medication, although their admission to the ICU had not been considered, which indirectly reveals that the assisting physicians acknowledged terminality of the disease. However, this fact was not duly informed in the patients' charts, suggesting that physicians were apprehensive about the ethical-legal impact of these practices. It must be highlighted that any and all medical acts must be registered in the medical chart and that nonmaleficence is one of the main principles of Bioethics. Withholding futile treatment and giving hospice care, the physician will unquestionably be following this principle.⁽²¹⁻²³⁾ The importance of a therapeutic strategy of comfort for the dying person and family members, must be kept in mind.^(21,24-26)

A study throughout Brazil disclosed that most intensivists had already taken part in discussions about WWT.⁽²⁷⁾ The ETHICUS⁽²⁸⁾ study stressed that the practice of withdrawing/withholding treatment took place in 76% of deaths in European ICU, reaching to more than 80% in the United States. It is remarkable that, in this study, disregarding the non-CRR, the action most frequently denied to patients in the wards was admission to the ICU. Stressing that patients

who had admission to the ICU denied and those who died in the wards, after discharge from the unit were victims of pathologies considered irreversible. It may be inferred that these patients had been referred to the ward to be together with their family members, in a more dignified manner with more comfort and emotional support at end-of-life.

In Brazil the physician-patient relations were based upon a paternalist and conservative model.⁽¹⁶⁾ Similar to countries in Southern Europe they are characterized by greater perseverance, fewer limitations and reduced frequency of communication about decisions with patients and family members, when compared to countries in Northern Europe.^(26,28) This situation justifies a lower incidence of WWT in this Brazilian ICU, when compared to the European or North-American. Furthermore, measures of therapeutic limitation are still not fully incorporated into medical practice due to legal constraints set forth by the Brazilian Penal Code, written in the forties, when ICU did not even exist.⁽²⁹⁾ Probably due to this shortcoming in the legislation and to cultural issues, Brazilian physicians prefer to give verbal and informal orders not to resuscitate.⁽³⁰⁾ However, Deheinzelin⁽¹⁸⁾ states that the verbal do-not-resuscitate order may conflict with Bioethical principles, regarding the patient's autonomy. These principles define that every human being has the right to be informed about the therapeutic modes available for his clinical situation and about the prognosis of his disease.⁽³¹⁾

In view of these results it is concluded that the profile of patients who died and the clinical practices adopted during the end-of-life, were different in the clinical wards, surgical wards and in the ICU.

The primary limitation of this work is that it is a retrospective study where inference regarding the assumed practices relied on the quality of the information record in the HDC and subjective interpretation of professionals who analyzed the medical charts.

Regarding implications of this study for clinical practice and scientific research, knowledge of the profile of patients who die in hospitals, of the primary diagnoses at admission and of the quality of care received, might foster organization of a model of adequate assistance to individuals with advanced and terminal disease at all levels of attention.⁽³²⁻³⁷⁾

The authors suggest that teaching about hospice care be encouraged, that research be made on the various aspects involved in end of life care and that

in the ICU, programs of optimization of end of life care be implemented.

CONCLUSION

The profile of patients who died and the medical practices adopted during the end of life were different in the clinical and surgical wards and in the intensive care units.

RESUMO

Objetivos: Avaliar as condutas médicas adotadas durante o morrer de pacientes que foram a óbito no HU/UFSC. Comparar essas condutas e o perfil epidemiológico dos que morreram na unidade de terapia intensiva (UTI) com o dos que morreram nas enfermarias de clínica médica (ECM) ou cirúrgicas (ECC).

Métodos: Estudo retrospectivo e observacional, onde foram anotados os dados demográficos, clínicos e terapêuticos dos pacientes adultos que morreram nas enfermarias e na unidade de terapia intensiva do HU/UFSC, no período de julho/2004 a dezembro/2008. Para análise estatística foram utilizados os testes: *t Student*, χ^2 e ANOVA (significante $p < 0.05$).

Resultados: Foram analisadas 1124 mortes: 404 ocorreram na UTI, 607 na ECM e 113 na ECC. A taxa de mortalidade hospitalar foi 5,9% (UTI=24,5%, ECM=7,2%, ECC=1,69%). A idade média dos doentes foi: UTI=56,7, ECM=69,3 e ECC=70,4 anos ($p < 0,01$). A recusa/suspensão de terapêutica precedeu 30,7% dos óbitos na unidade de terapia intensiva e 10,0% nas enfermarias ($p < 0,01$). Não houve reanimação cardiorrespiratória em 65% dos casos na UTI, 79% na ECM e 62% na ECC. Excluindo-se reanimação cardiorrespiratória, a recusa/suspensão de terapêutica mais freqüente na unidade de terapia intensiva foi droga vasoativa; já nas enfermarias foi a não internação na unidade de terapia intensiva. Ordem de não reanimar foi documentada em 2,4% dos casos na UTI e em 2,6% na ECM. Condutas paliativas e de conforto foram prestados a 2,0% dos pacientes na UTI, 11,5% na ECM e 8,0% na ECC. A terminalidade da doença foi reconhecida em 40,0% dos casos na UTI, 34,6% na ECM e 16,8% na ECC.

Conclusões: O perfil dos pacientes que morreram e as condutas médicas adotadas durante o processo de morrer foram diferentes nas enfermarias clínicas, cirúrgicas e na unidade de terapia intensiva.

Descritores: Atitude frente à morte; Morte; Cuidados paliativos; Recusa do paciente ao tratamento; Bioética

REFERENCES

1. Moritz RD. Dilemas éticos sobre o fim da vida. *Rev Bras Ter Intensiva*. 2003; 15(1):3-4.
2. Moritz RD, Nassar SM. A atitude dos profissionais de saúde diante da morte. *Rev Bras Ter Intensiva*. 2004;16(1):14-21.
3. Rego S, Palácios M. A finitude humana e a saúde pública. *Cad Saúde Pública = Rep Public Health*. 2006;22(8):1755-60.
4. Ahmad S, O'Mahony MS. Where older people die: a retrospective population-based study. *QJM*. 2005;98(12):865-70.
5. Soares M, Terzi RG, Piva JP. End-of-life care in Brazil. *Intensive Care Med*. 2007;33(6):1014-7.
6. Hall RI, Rocker GM. End-of-life care in the ICU: treatments provided when life support was or was not withdrawn. *Chest*. 2000;118(5):1424-30. Comment in: *Chest*. 2000;118(5):1238-9.
7. Brasil. Ministério da Saúde. Secretaria de Assistência à Saúde. Padronização da nomenclatura do censo hospitalar. Série A, normas e manuais técnicos, 2a ed Revista. Brasília: MS, 2002. Brasília: Ministério da Saúde; 2002.
8. Fins JJ, Miller FG, Acres CA, Bacchetta MD, Huzzard LL, Rapkin BD. End-of-life decision-making in the hospital: current practice and future prospects. *J Pain Symptom Manage*. 1999;17(1):6-15.
9. Becker G, Sarhatlic R, Olschewski M, Xander C, Momm F, Blum HE. End-of-life care in hospital: current practice and potentials for improvement. *J Pain Symptom Manage*. 2007;33(6):711-9.
10. Brasil. Ministério da Saúde. Departamento de Informação e Informática do SUS. Datasus [Internet] (Nascidos vivos e mortalidade). [atualizada em 2008 Maio 08, citado 2008 Maio 8]. Disponível em <http://www.datasus.gov.br/>.
11. Castro MSM, Travassos C, Carvalho MS. Fatores associados às internações hospitalares no Brasil. *Ciênc Saúde Coletiva*. 2002;7(4):795-811.
12. Martins M, Travassos C, Noronha JC. Sistema de Informações Hospitalares como ajuste de risco em índices de desempenho. *Rev Saúde Pública = J Public Health*. 2001;35(2):185-92.
13. Toscani F, Di Giulio P, Brunelli C, Miccinesi G, Laquintana D; End-of-Life Observatory Group. How people die in hospital general wards: a descriptive study. *J Pain Symptom Manage*. 2005;30(1):33-40.
14. Rady MY, Johnson DJ. Admission to intensive care unit at the end-of-life: is it an informed decision? *Palliat Med*. 2004;18(8):705-11.
15. Moritz RD, Pamplona F. Avaliação da recusa ou suspensão de tratamentos considerados fúteis ou inúteis em UTI. *Rev Bras Ter Intensiva*. 2003;15(1):40-4.
16. Maia FOM, Duarte YAO, Lebrão ML, Santos JLF. Fatores de risco para mortalidade em idosos. *Rev Saúde Pública = J Public Health*. 2006;40(6):1049-56.
17. Carson SS, Bach PB. Predicting mortality in patients suffering from prolonged critical illness: an assessment of four severity-of-illness measures. *Chest*. 2001;120(3):928-33.
18. Deheinzelin D. Limitação e suspensão de tratamento: é hora de agir. *Rev Assoc Med Bras (1992)*. 2006;52(6):378.
19. Pastrana T, Jünger S, Ostgathe C, Elsner F, Radbruch L. A matter of definition--key elements identified in a discourse analysis of definitions of palliative care. *Palliat Med*. 2008;22(3):222-32.
20. Twomey F, McDowell DK, Corcoran GD. End-of-life care for older patients dying in an acute general hospital--can we do better? *Age Ageing*. 2007;36(4):462-4. Comment in: *Age Ageing*. 2007;36(6):704; author reply 704-5.
21. Villas-Bôas ME. A ortotanásia e o Direito Penal Brasileiro. *Bioética*. 2008;16(1):61-83.
22. Van den Block L, Bilsen J, Deschepper R, Van der Kelen G, Bernheim JL, Deliens L. End-of-life decisions among cancer patients compared with noncancer patients in Flanders, Belgium. *J Clin Oncol*. 2006;24(18):2842-8.
23. Piva JP, Carvalho PRA. Considerações éticas nos cuidados médicos do paciente terminal [Internet]. [atualizada em 2008 Maio 02, citado 2008 Maio 2]. Disponível em: <http://www.portalmedico.org.br/revista/bio2v1/consideracoes.html>
24. Nunes L. Ética em cuidados paliativos: limites ao investimento curativo. *Rev Bioética*, 2008; 16(1):41-50.
25. Bitencourt AGV, Dantas MP, Neves FBCS, Almeida AM, Melo RMV, Albuquerque LC, et al. Condutas de limitação terapêutica em pacientes internados em Unidade de Terapia Intensiva. *Rev Bras Ter Intensiva*. 2007;19(2):137-43.
26. Sprung CL, Woodcock T, Sjøkvist P, Ricou B, Bulow HH, Lippert A, Maia P, et al. Reasons, considerations, difficulties and documentation of end-of-life decisions in European intensive care units: the ETHICUS Study. *Intensive Care Med*. 2008;34(2):271-7. Erratum in: *Intensive Care Med*. 2008;34(2):392-3.
27. Moritz RD, Costa A, Matos JD, Machado FO. O comportamento do médico intensivista brasileiro diante da decisão de recusar ou suspender um tratamento. *Rev Bras Ter Intensiva*. 2001;13(1):21-8.
28. Sprung CL, Cohen SL, Sjøkvist P, Baras M, Bulow HH, Hovilehto S, Ledoux D, Lippert A, Maia P, Phelan D, Schobersberger W, Wennberg E, Woodcock T; Ethicus Study Group. For the Ethicus Study Group. End-of-life practices in European intensive care units: the Ethicus Study. *JAMA*. 2003;290(6):790-7. Comment in: *JAMA*. 2003;290(6):820-2. *JAMA*. 2003;290(22):2938-9; author reply 2939-40. *JAMA*. 2003;290(22):2939; author

- reply 2939-40.
29. Aguiar AMFM. A ortotanásia e a Resolução CFM nº 1.805/2006. Jus Navigandi [Internet]. 2007;11(1468). [citado 2008 Julho 5]. Disponível em: <http://jus2.uol.com.br/doutrina/texto.asp?id=10119>.
 30. Yaguchi A, Truog RD, Curtis JR, Luce JM, Levy MM, Mélot C, Vincent JL. International differences in end-of-life attitudes in the intensive care unit: results of a survey. *Arch Intern Med*. 2005;165(17):1970-5.
 31. Jacobs LG, Bonuck K, Burton W, Mulvihill M. Hospital care at the end of life: an institutional assessment. *J Pain Symptom Manage*. 2002;24(3):291-8.
 32. Van den Block L, Deschepper R, Drieskens K, Bauwens S, Bilsen J, Bossuyt N, Deliens L. Hospitalisations at the end of life: using a sentinel surveillance network to study hospital use and associated patient, disease and healthcare factors. *BMC Health Serv Res*. 2007;7:69.
 33. Willard C, Luker K. Challenges to end of life care in the acute hospital setting. *Palliat Med*. 2006;20(6):611-5.
 34. Lorenz KA, Lynn J, Dy SM, Shugarman LR, Wilkinson A, Mularski RA, et al. Evidence for improving palliative care at the end of life: a systematic review. *Ann Intern Med*. 2008;148(2):147-59. Comment in: *Ann Intern Med*. 2008;148(2):I42.
 35. Qaseem A, Snow V, Shekelle P, Casey DE Jr, Cross JT Jr, Owens DK; Clinical Efficacy Assessment Subcommittee of the American College of Physicians, Dallas P, Dolan NC, Forciea MA, Halasyamani L, Hopkins RH Jr, Shekelle P. Evidence-based interventions to improve the palliative care of pain, dyspnea, and depression at the end of life: a clinical practice guideline from the American College of Physicians. *Ann Intern Med*. 2008;148(2):141-6. Comment in: *Ann Intern Med*. 2008;148(2):I42.
 36. Hegedus K, Zana A, Szabó G. Effect of end of life education on medical students' and health care workers' death attitude. *Palliat Med*. 2008;22(3):264-9.
 37. Truog RD, Campbell ML, Curtis JR, Haas CE, Luce JM, Rubenfeld GD, Rushton CH, Kaufman DC; American Academy of Critical Care Medicine. Recommendations for end-of-life care in the intensive care unit: a consensus statement by the American College [corrected] of Critical Care Medicine. *Crit Care Med*. 2009;21(2):141-147