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## Perceptions about end of life treatment in Argentina, Brazil and Uruguay intensive care units

*Percepção dos profissionais sobre o tratamento no fim da vida, nas unidades de terapia intensiva da Argentina, Brasil e Uruguai*

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### ABSTRACT

**Objective:** To evaluate end-of-life procedures in intensive care units.

**Methods:** A questionnaire was prepared by the End-of-Life Study Group of the Argentinean, Brazilian and Uruguayan Intensive Care societies, collecting data on the participants' demographics, institutions and limit therapeutic effort (LTE) decision making process. During this cross sectional study, the societies' multidisciplinary teams members completed the questionnaire either during scientific meetings or online. The variables were analyzed with the Chi-square test, with a  $p < 0.05$  significance level.

**Results:** 420 professionals completed the questionnaire. The Brazilian units had more beds, unrestricted visit was less frequent, their professionals were younger and worked more recently in intensive care units, and more non-medical professionals completed the questionnaire. Three visits daily was the more usual number of visits for the three countries. The most influencing LTE factors were prognosis, co-morbidities, and thera-

peutic futility. In the three countries, more than 90% of the completers had already made LTE decisions. Cardiopulmonary resuscitation, vasoactive drugs administration, dialysis and parenteral nutrition were the most suspended/refused therapies in the three countries. Suspension of mechanic ventilation was more frequent in Argentina, followed by Uruguay. Sedation and analgesia were the less suspended therapies in the three countries. Legal definement and ethical issues were mentioned as the main barriers for the LTE decision making process.

**Conclusion:** LTE decisions are frequent among the professionals working in the three countries' intensive care units. We found a more proactive LTE decision making trend In Argentina, and more equity for decisions distribution in Uruguay. This difference appears to be related to the participants' different ages, experiences, professional types and genders.

**Keywords:** Terminal care; Terminally ill; Treatment refusal; Withholding treatment; Medical futility; Questionnaires

### INTRODUCTION

Saying that one of the medical roles is "to refuse treating those who were beaten by disease, understanding that medicine is impotent for these cases"<sup>(1)</sup>, Hippocrates was the first to describe the limit of therapeutic effort (LTE). However, during the current century, given the population ageing and the control of chronic-degenerative diseases added to technological improvements has progressively allowed to delay dying, thus generating the need to broaden debate on medical procedures

for end-of-life patients.

Although there is a general idea that dying at home may be less painful, seven in 10 deaths occur in hospitals, and more specifically in intensive care units (ICUs).<sup>(2)</sup> Thus, the intensive care professional needs to be prepared to accept his (her) limitation as healer in order to be ready to take care of the end-of-life patient. The intensive care professional faces LTE procedures daily, making the debate on ethic and legal matters related to this issue a priority.<sup>(3-11)</sup> There have been changes in the above mentioned Hippocrates thoughts. The current perspective is that the physician and the multiprofessional team should offer palliative care to end-of-life patients, minimizing the suffering involved in the dying process.<sup>(11-13)</sup>

However, to change the ICUs' therapeutic focus, this department's professionals must reset their procedures. Improved understanding of these new situation is the first step for effective change. Based on this, we aimed to diagnose and compare the end-of-life procedures in the Southern Cone ICUs (from Brazil, Argentina and Uruguay).

## METHODS

This was a cross-sectional study conducted by the Brazilian Society of Intensive Care Medicine (AMIB), the Argentinean Society of Intensive Care Medicine (SATI) and the Uruguayan Society of Intensive Care Medicine (SUMI). The members of these societies' End-of-Life Care Workgroup met personally to prepare a questionnaire based on the participants experience and literature review. This questionnaire aimed the diagnosis of the procedures for the dying patient in the three countries ICUs. The questionnaire had two parts. The first collected the respondents' demographic data and information on their institutions (i.e. age, professional background, affiliations, duration of the ICU work, religious beliefs, category of hospital, ICU site and number of beds). In the second part were asked questions regarding LTE. In this structured questionnaire, depending on the questions, objective responses should be marked by either yes, no, always, almost always or never. In this phase were included the following questions:

- Aspects considered for LTE decision making (age, co-morbidities, previous and "post-ICU" patient's quality of life, patients and/or family wishes, severity scores, ICU time of stay, diagnosis, prognosis, therapeutic futility, legal aspects);

- Decision responsibility for the therapy refusal/withdrawal in end-of-life critical patients (patient, family members, ICU medical head, doctor on duty, treatment doctor, medical or multiprofessional team consensus, ethics/bioethics committee, team and family members consensus);

- Therapies judged as potentially futile, which could be refused/withdrawn in the ICU (mechanic ventilation, sedation, analgesia, dialysis methods, vasoactive drugs, antibiotics, enteral nutrition, parenteral nutrition, venous hydration, cardiopulmonary resuscitation).

- Who should be communicated in case of refusal/withdrawal of futile therapy (patient, family members, multiprofessional team, ethics committee).

- Which palliative procedures would be used for an end-of-life patient (discharge from ICU, increase visits, refusal/withdrawal of futile therapies, sedation-analgesia adjustment, ventilation change).

- Which are the main barriers for therapy refusal/withdrawal decisions (religious, legal, ethical, lack of training, interpersonal conflicts).

- Which actions should be implemented for end-of-life critical patient adjustment (palliative care for end-of-life patients information leaflets, graduation and post-graduation training, class associations regulations on the subject, legal regulation, decisions documentation in the medical chart).

The questionnaire was completed during intensive care scientific meetings of the three countries (regional and/or national congresses) and also online, in the societies' sites, for a pre-established time. Members of the involved societies and part of multiprofessional teams took part in the study. The responses of the three countries respondents were compared and the variables analyzed using the Chi-square ( $\chi^2$ ) test. A  $p < 0.05$  value was considered for statistical significance.

## RESULTS

Four hundred and twenty professionals participated in the study, 217 from Brazil, 141 from Argentina and 62 from Uruguay. The ICUs where these professionals worked characteristics are shown on Table 1. Table 2 shows the study participants characteristics.

The inter-groups comparison using the  $\chi^2$  test showed a larger number of ICUs with more than 20 beds in Brazil. Additionally, fewer visits to critical patients are allowed in Brazil. Regarding the participants' demographics, the Brazilians are younger and

**Table 1 – Intensive care units characteristics in the different Southern-Cone countries**

Characteristics	Brazil N=217	Argentina N=141	Uruguay N=62	P value
Site				
North/Northeast	31 (14.3)	66 (46.8)	11 (17.7)	–
Center/West	10 (4.6)	37 (26.2)	3 (4.8)	<0.001
South/Southeast	176 (81.1)	37 (26.2)	38 (61.3)	–
Category of hospital				
Teaching	92 (42.4)	87 (61.7)	36 (58.1)	–
Others	125 (57.6)	54 (38.2)	26 (41.9)	<0.001
Type of ICU				
General/Mixed	191 (88.0)	132 (93.6)	54 (87.1)	0.3
Other	26 (11.9)	9 (6.3)	8 (12.9)	–
Number of ICU beds				
<10	81 (37.3)	68 (48.2)	31 (50.0)	–
10-20	76 (35.0)	61 (43.2)	19 (30.6)	<0.001
> 20	60 (27.7)	12 (8.5)	9 (14.5)	–
Number of visits allowed				
Once daily	63 (29.0)	22 (15.6)	10 (16.1)	–
Up to 3 times daily	137 (63.2)	103 (73.1)	43 (79.3)	0.01
Unrestricted	17 (7.8)	18 (12.7)	8 (12.9)	–

ICU – intensive care unit. Results expressed as number (%), Chi-square

**Table 2 – Characteristics of the participants in the different southern-cone countries**

Participants Characteristics	Brazil N=217	Argentina N=141	Uruguay N=62	P value
Age				
<35 years	117 (53.9)	24 (17.1)	14 (22.5)	–
35 to 50 years	78 (35.9)	88 (62.4)	41 (66.1)	<0.001
>50 years	22 (10.1)	29 (20.5)	7 (11.2)	–
Gender				
Female	109 (50.2)	82 (58.1)	20 (32.2)	–
Male	108 (49.8)	59 (41.8)	37 (59.7)	<0.001
Religious belief				
Atheist/Agnostic	65 (29.9)	40 (28.3)	25 (40.3)	–
Believes in god	152 (70.0)	101 (71.6)	45 (72.5)	0.5
Profession				
Physician	143 (65.9)	134 (95.0)	52 (83.8)	<0.001
Other	74 (34.1)	7 (4.9)	10 (16.1)	–
Board certificated	135 (62.2)	–	47 (75.8)	0.047
Time working in ICU				
Up to 5 years	94 (43.3)	0 (0)	15 (24.1)	–
5 to 15 years	75 (34.6)	81 (57.4)	26 (41.9)	<0.001
15 to 30 years	45 (20.8)	49 (34.7)	18 (29.0)	–
More than 30 years	3 (1.4)	11 (7.8)	0 (0)	–

ICU – intensive care unit. Results expressed as number (%), Chi-square.

more non-medical professionals completed the questionnaire. More male participants were seen in Uruguay, and the Argentinean professionals were older. These findings were significant.

Table 3 shows the factors influencing LTE decision making. The most frequent influencing factors were the disease's prognosis, its co-morbidities and therapeutic futility. A significant inter-countries dif-

ference was identified, with Argentinean professionals trending to decide more frequently for LTE. The medical team was identified as the main responsible for LTE decision, particularly in Brazil and Argentina (Table 4), and in Brazil other stakeholders had a larger participation. It was also found that in all countries more than 90% of the respondents had ever decided for LTE (Figure 1).

Regarding the therapeutic limit, cardiorespiratory resuscitation, vasoactive drugs administration, dialysis methods, and parenteral nutrition were the most frequently withdrawn or refused therapies in the three countries, with small differences.

A significant difference was found for mechanic ventilation withdrawal, more frequent in Argentina, followed by Uruguay (Table 5). In Table 6 are shown

**Table 3 – Factors influencing the limit of therapeutic effort decision making**

Factors influencing limit decision making (almost always)	Brazil Total = 217	Argentina Total = 141	Uruguay Total = 62	P value
Patient's age	132 (60.8)	83 (58.9)	32 (51.6)	NS
Co-morbidities	181 (83.4)	124 (87.9)	41 (66.1)	<0.001
Severity scores	130 (59.9)	70 (49.6)	18 (29.0)	<0.001
Time in the ICU	114 (52.5)	63 (44.6)	18 (29.0)	<0.001
Diagnosis	158 (72.8)	112 (79.4)	33 (53.2)	<0.001
Prognosis	190 (87.6)	132 (93.6)	42 (67.7)	<0.001
Therapeutic futility	176 (81.1)	128 (90.7)	40 (64.5)	<0.001
Previous quality of life	176 (81.1)	–	39 (62.9)	0.003
Post-ICU quality of life	160 (73.7)	–	29 (47.6)	<0.001
Legal aspects	154 (70.9)	85 (60.2)	23 (37.1)	<0.001
Patients/Family wishes	164 (75.6)	106 (75.1)	28 (45.1)	<0.001

ICU – intensive care unit.; NS – not significant. Results expressed as number (%), Chi-square.

**Table 4 – Responsibility for limit of therapeutic effort decisions**

Almost always responsible for LTE decisions	Brazil (N=217)	Argentina (N=141)	Uruguay (N=62)	P value
Medical team	176 (81.1)	117 (82.9)	34 (54.8)	<0.001
Multiprofessional team	111 (51.2)	52 (36.9)	13 (20.9)	<0.001
Ethics committee	45 (20.7)	13 (9.2)	0 (0)	<0.001
Family members	105 (48.4)	56 (39.7)	20 (32.2)	<0.001
The patient	44 (20.3)	13 (9.2)	2 (3.2)	<0.001

LTE – limit of therapeutic effort. Results expressed as number (%). Chi-square.

**Table 5 – Almost always used therapeutic limits**

Limit of therapeutic effort used almost always	Brazil N=217	Argentina N=141	Uruguay N=62	P value
Cardiorespiratory resuscitation	141 (65.0)	121 (85.8)	33 (53.2)	<0.001
Vasoactive drugs	119 (54.8)	104 (73.8)	35 (56.5)	0.001
Dialysis methods	125 (57.6)	98 (69.5)	32 (51.6)	0.022
Parenteral nutrition	111 (51.2)	94 (66.6)	37 (59.6)	0.014
Antibiotics	100 (46.1)	51 (36.1)	33 (53.2)	0.049
Enteral nutrition	109 (50.2)	22 (15.6)	30 (48.0)	<0.001
Mechanic ventilation	41 (18.9)	68 (48.2)	16 (25.8)	<0.001
Hydration	37 (17.1)	23 (16.3)	1 (1.6)	0.007
Sedation	24 (11.1)	4 (2.8)	1 (1.6)	0.002
Analgesia	11 (5.1)	2 (1.4)	1 (1.6)	0.122

Results expressed as number (%). Chi-square.

**Table 6 – Maintained therapies or therapeutic limits never used**

Therapies maintained or therapeutic limits never used	Brazil N=217	Argentina N=141	Uruguay N=62	P value
Analgesia	171 (78.8)	124 (87.9)	29 (46.7)	<0.001
Sedation	131 (60.4)	105 (74.5)	27 (43.5)	<0.001
Hydration	91 (41.9)	–	23 (37.1)	0.494
Mechanic ventilation	107 (49.3)	21 (14.8)	11 (17.7)	<0.001
Enteral nutrition	39 (18.0)	8 (5.6)	4 (6.4)	0.001
Antibiotics	43 (19.8)	43 (30.4)	2 (3.2)	<0.001
Parenteral nutrition	43 (19.8)	20 (14.2)	2 (3.2)	0.005
Dialysis methods	42 (19.4)	6 (4.2)	1 (1.6)	<0.001
Vasoactive drugs	41 (18.9)	6 (4.2)	2 (3.2)	<0.001
Cardiorespiratory resuscitation	46 (21.3)	8 (5.6)	2 (3.2)	<0.001

Results expressed as number (%). Chi-square.

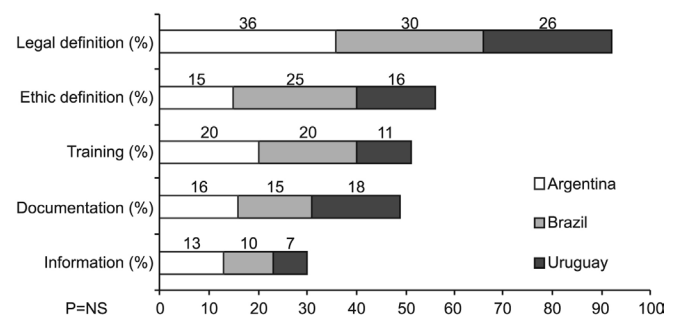
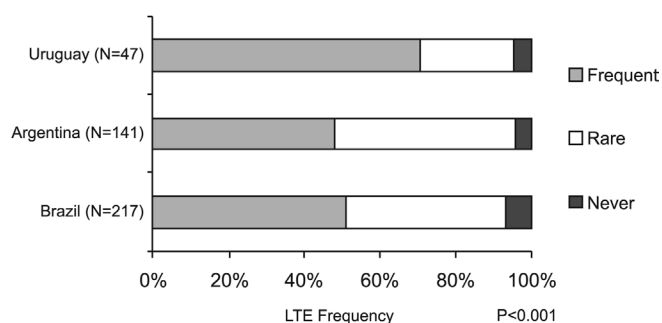
**Table 7– Measures following end-of-life diagnosis**

Measures following end-of-life diagnosis (almost always)	Brazil N=217	Argentina N=141	Uruguay N=62	P value
Sedation-Analgesia changes	194 (89.4)	137 (97.2)	41 (66.1)	<0.001
Limit of therapeutic effort	169 (77.9)	115 (81.5)	28 (45.2)	<0.001
Mechanic ventilation change	106 (48.8)	80 (56.4)	33 (53.2)	0.339
Unrestricted visits	172 (79.3)	121 (85.8)	39 (62.9)	0.001
Discharge from ICU	102 (47.0)	86 (61.0)	20 (32.3)	<0.001

ICU – intensive care unit. Results expressed as number (%), Chi-square.

the never withdrawn or refused therapies. Analgesia and sedation were the less withdrawn therapies in the three countries, and in Brazil mechanic ventilation is less frequently withdrawn versus the other countries.

The intensive care professionals' attitudes following end-of-life diagnosis can be seen on Table 7. Figure 2 shows that the professionals overall considered lack of legal definitions as the main barrier for the LTE decision process, followed by lack of ethical clarity and training of the involved personnel.

**Figure 2 – Main barriers for therapeutic limit decision making.**

LTE – limit of therapeutic effort. Results expressed as number (%). Chi-square

**Figure 1 – Limit of therapeutic effort frequency in the three countries.**

## DISCUSSION

This study, with more than 81% of the participants being intensive care physicians from Brazil, Argentina and Uruguay, made clear the need of broader debate, leading to a widened understanding of the new intensive care paradigms.

It was identified that in Brazil, as compared to the other countries, the population evaluated was younger, and consequently had a shorter ICU experience, as well as had a larger number of non-medical professionals. It is interesting that, nevertheless the Catholic religion predominance in the studied countries, 30%

of the professionals declared to be atheist or agnostic, suggesting ICUs workers skepticism.

The characteristics of the ICUs where the completers worked had differences related to each country's specificities. In Brazil, less flexibility regarding visits to critically ill patients was identified.

The analysis regarding the LTE decision making allowed concluding that the disease's prognosis, the patients' co-morbidities, and the therapeutic futility were the main contributing factors for therapies refusal or withdrawal in the three countries. It is interesting to add that legal definition, although pointed as the main barrier for LTE decision making, was ranked six by the Brazilian and Argentinean professionals, and seven by the Uruguayans.

The physician is ethically and technically trained to provide the best possible care. In this study, the professional more frequently mentioned as responsible for LTE decisions was the physician. According to Nunes<sup>(13)</sup> actions' ethics is not determined by the external behavior, but by the inner component – and this means that the action results from targets the person has establishes for him/herself, thus involving freedom of action. So, the main determinant is the intention, which moves forward to deliberation and decision making. It could be inferred that nevertheless the physician respects legal rules, the decision making is mainly based on the patient's clinical aspects.

In this study we could identify that, although no specific legal rules are established for LTE, most of the respondents (more than 90%) had already decided for limiting therapy during their professional lives. Brazilian studies confirm this.<sup>(2,14,15)</sup> It is important to emphasize the existence legal support for refusing artificial resources. It is not considered a crime refusing therapies not effectively beneficial to the patient, which are exclusively therapeutic obstinacy. The procedure indication or contraindication is matter of medical decision, and should be discussed with the patient, when possible, and family members, in order to assure dignity for the end-of-life process.<sup>(16)</sup>

Much has been written in the last two decades regarding intensive care therapy withdrawal; better understanding on LTE and palliative care has been gained with the years. However, there are still cultural and legal barriers making difficult the end-of-life patient management. Classically, the therapies most acknowledged as futile or useless are vasoactive drugs and dialysis methods.<sup>(14,15,17-23)</sup> In the last years, the acceptance of withdrawing mechanic ventilation

as a palliative ICU measures is growing.<sup>(9,24)</sup> Also is currently discussed the relevance of appropriate intensive care professionals' training in end-of-life patients management competencies. Proactive measures allowing the patient a painless and less discomfort death is mandatory, as well as appropriate support for the family members.<sup>(12,13,25,26)</sup>

In this study, the most commonly refused or withdrawn therapies, in the three countries, were cardiorespiratory resuscitation, vasoactive drugs administration and dialysis methods. Analgesia, sedation and venous hydration are the most frequently maintained therapies. A difference was identified regarding mechanic ventilation withdrawal, done almost always by 48.2% of the Argentinean professionals, 25.8% of the Uruguayans and 18.9% of the Brazilians. Regarding the measures adopted following the end-of-life condition diagnosis, change in sedation-analgesia was the most prevalent measure in the three countries. The results appear to indicate that the Argentinean professionals feel more comfortable to act proactively for the end-of-life critical patient care.

Regarding the barriers limiting LTE mentioned by the respondents, the lack of legal definition was the main aspect, followed by the need of ethical definition and professionals training. For appropriate care of the end-of-life patient, several aspects are involved. The social acceptance of death and the lack of accurate death prediction methods make difficult the decision making. Lack of palliative care training, and the difficulty for communicating "bad news" are barriers to overcome.<sup>(26,27)</sup>

As this study main fault, the demographic differences (age, profession, gender, experience) between the participants may have influenced the results. Additionally, those completing the questionnaire were taking part in events or visiting their societies' sites, and this may represent a bias for the results' analysis. The decision of categorizing the variables in three groups made an appropriate statistical analysis complex. This is another limiting factor to be stressed.

Even though the pointed methodological faults, the authors take the liberty of suggesting that, given the relevant number of limit of therapeutic effort decisions in ICUs, plans for end-of-life patients' palliative care should be implemented.

## CONCLUSIONS

This study results allow concluding that, nevertheless regional and cultural differences, the end-of-life limitation of therapeutic effort measures are frequent-

ly used by the ICU professionals in the three countries. The study shows a trend to more proactive LTE measures in Argentinean ICUs, and more equity in the decisions distribution in Uruguay. Although further evidence is needed, this difference may be related to the differences regarding age, experience, type of professional and gender.

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## RESUMO

**Objetivo:** Avaliar as condutas tomadas nas Unidades de Terapia Intensiva (UTI) com os pacientes críticos terminais.

**Métodos:** Os membros do grupo de estudo do final da vida das sociedades Argentina, Brasileira e Uruguia de Terapia Intensiva elaboraram um questionário no qual constavam avaliações demográficas sobre os participantes, sobre as instituições em que os mesmos trabalhavam e decisões sobre limite de esforço terapêutico (LET). Neste estudo de corte transversal os membros da equipe multiprofissional das sociedades responderam o questionário durante eventos científicos e, via *on line*. As

variáveis foram analisadas através do teste qui-quadrado sendo considerado significativa  $p < 0,05$ .

**Resultados:** Participaram do estudo 420 profissionais. No Brasil as UTI tinham mais leitos, foi mais rara a permissão irrevogada de visitas, os profissionais eram mais jovens, trabalhavam a menos tempo na UTI e houve maior participação de não médicos. Três visitas/dia foi o número mais frequente nos três países. Os fatores que mais influenciaram nas decisões de LET foram prognóstico da doença, co-morbidades e futilidade terapêutica. Nos três países mais de 90% dos participantes já havia decidido por LET. Reanimação cardiopulmonar, administração de drogas vaso-ativas, métodos dialíticos e nutrição parenteral foram as terapias mais suspensas/recusadas nos três países. Houve diferença significativa quanto à suspensão da ventilação mecânica, mais frequente na Argentina, seguida do Uruguai. Analgesia e sedação foram as terapias menos suspensas nos três países. Definições legais e éticas foram apontadas como as principais barreiras para a tomada de decisão.

**Conclusão:** Decisões de LET são frequentemente utilizadas entre os profissionais que atuam nas UTI dos três países. Existe uma tendência da ação de LET mais pró-ativa na Argentina, e uma maior equidade na distribuição das decisões no Uruguai. Essa diferença parece estar relacionada às diferenças de idade, tempo de experiência, tipo de profissional e gênero dos participantes.

**Descritores:** Assistência terminal; Doente terminal; Recusa do paciente ao tratamento; Suspensão de tratamento; Futilidade médica; Questionários

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