

Palliative Extubation in Terminal Patients: Integrative Review

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Extubação Paliativa em Pacientes Terminais: Revisão Integrativa

Extubación Paliativa en Pacientes Terminales: Revisión Integradora

Beatriz Louro¹; Bianca Kemmilly Rodrigues Paiva²; Amanda Estevão³

ABSTRACT

Introduction: Palliative care aims to minimize the suffering of both patients and their families through a multidisciplinary work. Non-communicable chronic diseases are the leading cause of suffering and disability, leading them to palliative care. In order to alleviate suffering, palliative extubation is a procedure that avoids prolonging death by removing invasive respiratory measures such as orotracheal intubation. **Objective:** To perform an integrative review and analyze/present the impact of palliative extubation in terminal patients. **Method:** A literature review study through search performed in the databases PEDro, LILACS and PubMed, using the keywords: airway extubation, palliative care and hospice care. **Results:** For this study, 41 articles were found, being 15 relevant for the review. Studies have shown that palliative extubation is beneficial for patients and their families, even though the time of death may vary according to the existing disease. **Conclusion:** Despite the small number of studies, it was possible to observe that palliative extubation proved to be effective in the treatment based in family members reports, ensuring better quality of life and a more peaceful death without further suffering. **Key words:** Airway Extubation; Hospice Care/methods; Medical Futility; Terminally III.

RESUMO

Introdução: O cuidado paliativo tem como objetivo minimizar o sofrimento tanto do paciente como de seus familiares, por meio de um trabalho multiprofissional. As doenças crônicas não transmissíveis são a principal causa de sofrimento e incapacidade, levando-os aos cuidados paliativos. A fim de amenizar o sofrimento, a extubação paliativa é um procedimento que evita prolongar a morte, por intermédio da retirada de medidas invasivas respiratórias, como a intubação orotraqueal. **Objetivo:** Realizar uma revisão integrativa e analisar/apresentar o impacto da extubação paliativa em pacientes terminais. **Método:** Trata-se de um estudo de revisão de literatura e, para sua realização, foi realizada uma busca nas bases de dados PEDro, LILACS e PubMed, utilizando os descritores: *airway extubation*, *palliative care* e *hospice care*. **Resultados:** Para a realização deste estudo, foram encontrados 41 artigos, sendo 15 relevantes para a revisão. Estudos mostraram que a extubação paliativa é benéfica para o paciente e seus familiares, mesmo que o tempo de morte possa variar de acordo com a doença existente. **Conclusão:** Apesar do pequeno número de estudos, foi possível observar que a extubação paliativa se mostrou eficaz no tratamento, mediante relatos de familiares, proporcionando melhor qualidade de vida e uma morte mais tranquila e sem mais sofrimentos. **Palavras-chave:** Extubação; Cuidados Paliativos na Terminalidade da Vida/métodos; Futilidade Médica; Doente Terminal.

RESUMEN

Introducción: Los cuidados paliativos tienen como objetivo minimizar el sufrimiento de los pacientes y sus familias a través de un trabajo multidisciplinario. Las enfermedades crónicas no transmisibles son la principal causa de sufrimiento y discapacidad que los lleva a los cuidados paliativos. Para aliviar el sufrimiento, la extubación paliativa será un procedimiento que evita prolongar la muerte al eliminar las medidas respiratorias invasivas como la intubación orotraqueal. **Objetivo:** Realizar una revisión integradora y analizar/presentar el impacto de la extubación paliativa en pacientes con enfermedades terminales. **Método:** Este es un estudio de revisión de literatura y se realizó una búsqueda en las bases de datos PEDro, LILACS y PubMed, usando las palabras clave: extubación de vías aéreas, cuidados paliativos y cuidados de hospicio. **Resultados:** Para este estudio, se encontraron 41 artículos, 15 relevantes para la revisión. Los estudios han demostrado que la extubación paliativa es beneficiosa para los pacientes y sus familias, aunque el momento de la muerte puede variar según la enfermedad existente. **Conclusión:** A pesar del pequeño número de estudios, fue posible observar que la extubación paliativa demostró ser efectiva en el tratamiento, a través de los informes de los miembros de la familia, proporcionando una mejor calidad de vida a través de una muerte más pacífica sin más sufrimiento. **Palabras clave:** Extubación Traqueal; Cuidados Paliativos al Final de la Vida/métodos; Inutilidad Médica; Enfermo Terminal.

¹Medical College of ABC. Santo André (SP), Brasil. Orcid iD: <https://orcid.org/0000-0003-2801-0131>

²Federal University of São Paulo (UNIFESP). Santo André (SP), Brasil. Orcid iD: <https://orcid.org/0000-0002-1873-8148>

³Medical College of ABC. Santo André (SP), Brasil. Orcid iD: <https://orcid.org/0000-0002-7031-3235>

Corresponding author: Bianca Kemmilly Rodrigues Paiva. Avenida Príncipe de Gales, 821 - Príncipe de Gales. Santo André (SP), Brasil. CEP 09060-650. Email: biakemmilly@outlook.com



INTRODUCTION

The goal of palliative care is to minimize the patient's physical, psychological, social and spiritual suffering who is facing a life-threatening disease and its family through a multi-professional therapeutic approach¹.

Palliative treatment must be initiated as early as possible for the patients who need it simultaneously with curative treatment to best achieve the objectives as for instance, provide comfort, symptoms control, quality and prolongation of life².

Chronic non-communicable diseases (NCDs) are the main cause of death in the world, most in individuals under 70 years old. These are considered a health global problem due to the association with avoidable factors as sedentarism and tobacco use. Consequently, in order to reduce early deaths³ the Governments analyze and acknowledge national programs supported internationally.

According to global epidemiologic and demographic transitions, cancer will have an increasing impact along the decades⁴. The estimates of the National Cancer Institute José Alencar Gomes da Silva (INCA) show that for each year of the triennium 2020-2022, 625 thousand new cases of cancer will occur in Brazil. Except for non-melanoma skin cancer (nearly 177 thousand new cases), breast and prostate cancers (66 thousand for each), colon and rectum (41 thousand) are the most frequent in the population⁵.

Palliative care to terminal patients changes with the awareness that individuals are finite human beings. Life terminality is defined when the possibilities of reclaiming health conditions are to no avail and the proximity of death is inevitable and predictable. Caring for the patient and the family must address all the stages of the terminal disease in order to ensure suffering relief and avoid futile measures in face of the irreversibility of the disease⁶.

Palliative extubation is one of the forms to mitigate the suffering of terminal patients for whom death is already foreseen. This procedure prevents the prolongation of death and should be agreed with the family for the process of bereavement to start early^{7,8}.

Considering the increase of chronic non-communicable diseases (NCD), palliative care is extremely important to ensure better quality of life for the patients and their families, however, palliative extubation is still scarcely disclosed. The objective of this study is to conduct an integrative review and analyze/present the impact of palliative extubation in terminal patients.

METHOD

The study was carried out through searches in the databases PEDro, PubMed and LILACS, utilizing the

descriptors: airway extubation, palliative care and hospice care. The Boolean operator AND was used among the descriptors mentioned as search strategy.

Titles and abstracts were used to analyze the articles to obtain applicable and relevant data for the study and only the pertinent articles which analyzed the impact or mentioned the outcome of palliative extubation met the inclusion criteria.

The search for articles was carried out in June 2019. No cutoff date was determined because of the small quantity of available studies about the theme. The articles covered the period from 2001 to 2019.

RESULTS

No study in PEDro database searched with the descriptors airway extubation and palliative care, and, airway extubation and hospice care, was found.

39 studies in PubMed database with the descriptors airway extubation and palliative care were encountered, only 13 were eligible to be included in the present study. It was conducted a new search in this same database utilizing the descriptors airway extubation and hospice care, and four studies were encountered, three of them already included in the primary search, resulting in only one new study for the present article.

It was found one study in the database LILACS, utilizing the descriptors airway extubation and palliative care; a second search with the descriptors airway extubation and hospice care failed to find any study.

Therefore, the current review consisted of 15 studies presented below (Table 1) according to the respective data.

The results of the search are explained in the flowchart (Figure 1).

DISCUSSION

Death shifted from an acute to a chronic process creating conflicts about the quality of life of patients with prolonged survival. Therefore, with the progress of the studies, palliative care in the treatment of chronic NCDs was improved in order to ensure physical or mental relief of suffering, for the ill and its family.

The withdrawal of invasive measures as mechanic ventilation is one of the forms to bring relief. In patients whose death is expected, palliative extubation analyzed in the present study is preferred regarding where it should occur, post-procedure time of living, sedation, among others.

Often, families barely know the importance of palliative care, making the process longer¹⁶. How the family plays an important role in the decision, a good

Table 1. Presentation of the studies utilized

Title	Author/year	Type of study	Objective of the study	Conclusion of the author	Impact of palliative extubation
<i>Pediatric Critical Care Transport as a Conduit to Terminal Extubation at home: a Case Series</i>	Noje, Bernier, Costabile et al. ⁹ , 2017	Case report	Present the routine of three palliative care transports to terminal extubation in a pediatric Intensive Care Unit (ICU).	Going home for palliative extubation is a viable alternative thanks to the improvement of transport, ways of management and cost analysis.	Home palliative extubation is viable even if transport causes unrest, meeting the family wish to stay close when end of life occurs.
<i>How Long Does (s)He Have? Retrospective Analysis of Outcomes After Palliative Extubation in Elderly, Chronically Critically Ill Patients</i>	Pan, Platis, Maw et al. ¹⁰ , 2016	Retrospective study	Analyze the palliative post-extubation time in chronic older patients.	Great part of the patients who joined the study died after palliative extubation in the hospital, most of them survived 24 hours in average without ventilation.	As much as most part of the patients has died in the hospital, it is noticed a considerable chance for the patient to go home and die after a while.
<i>Respiratory Therapists' Experiences and Attitudes Regarding Terminal Extubations and End-of-life Care</i>	Grandhige, Timmer, O'Neill et al. ¹¹ , 2016	Case report	Analyze the experience of respiratory therapists in two medical academic facilities with patients who would be submitted to palliative extubation.	Rarely the respiratory therapists are involved in meetings about terminal patients. Training and improved relation team-patient are necessary.	Palliative post-extubation symptoms could be more well controlled if the respiratory physiotherapists were supported by other professionals as physicians and nurses.
<i>Compassionate Extubation for a Peaceful Death in the Setting of a Community Hospital: a Case-Series Study</i>	Kok ¹² , 2015	Case study	Present the experience of a university hospital about the time of life of the patients post-extubation, use of palliative sedation, place where extubation will occur, who does the extubation and how long will it take to conduct the whole process since the decision until the very moment of the extubation.	Time of death varies according to the disease, in average 0.3 hour for patients with cardiac arrest out of the hospital and 97 hours in patients in advanced cancer stages.	The quality of the death is extremely important because it is argued that not all the patients who will be submitted to palliative extubation actually need sedation. Only for those who were in use of morphine for pain control.
<i>Your Own Sweet Time: Discontinuing Ventilator Support at Home</i>	Yeow ¹³ , 2015	Case report	Report the return home of a terminal patient as its family wished the palliative extubation to occur at home.	It was noticed that the family preferred to relief the suffering of its son where he was most happy. Initially, the family was dismayed in having to say farewell, but later became a peaceful moment for everyone.	The family showed as much as possible the love for the patient bringing him home where he was most happy and together with the family who could say farewell for the last time.
<i>Retirada de asistencia respiratoria en domicilio: toma de decisiones en cuidados paliativos pediátricos</i>	García-Salido, Monleón-Luque, Barceló-Escario et al. ¹⁴ , 2014	Case report	Report the patient return home for terminal palliative extubation in order to strengthen the family bond in the final phase of the life.	Home is the best environment for the extubation process and communication with the patient's family, it is actually warmer, less anguishing and quieter than in the ICU.	Direct relation between the palliative care team and the family is highly relevant for improved comfort to the patient and the family in the moment of extubation.
<i>Transport Home and Terminal Extubation by Emergency Medical Services: an Example of Innovation in End-of-life Care</i>	Clemency, Grimm, Lauer et al. ¹⁵ , 2019	Case report	Describe terminal extubation carried out by a paramedic supervised directly by a physician of the emergency team at the patient's home.	It is possible to perform palliative extubation at home if the patient and its family concur.	To actually achieve patient-focused end of life care, death out of the hospital needs to be chosen.

to be continued

Table 1. continuation

Title	Author/year	Type of study	Objective of the study	Conclusion of the author	Impact of palliative extubation
<i>Ventilator Withdrawal: Procedures and Outcomes. Report of a Collaboration Between a Critical Care Division and a Palliative Care Service</i>	O'Mahony, McHugh, Zallman et al. ¹⁶ , 2003	Case study	Describe the procedure of palliative extubation and review the patients' responses.	Usually, the families barely know about the importance of palliative care and the process eventually takes longer.	It is not advisable to present to the patients' family a conclusive prognosis because the article described the continuation of palliative care post-extubation
<i>Withdrawal of Ventilatory support outside the intensive care unit: guidance for practice</i>	Laddie, Craig, Brierley et al. ¹⁷ , 2014	Cross-sectional study	Review a pediatric palliative care study which removed the ventilatory support out of the ICU in order to improve the respective orientations for that practice.	The withdrawal of the ventilatory support out of the ICU is challenging and needs several resources. And how new studies help the family to decide the preferred place for the extubation.	All the patients who were submitted to palliative extubation were near their families and time to death differed. Communication and planning of team members with the family are crucial for the procedure efficacy.
<i>Pediatric Extubation: "Pulling the Tube"</i>	Sine, Sumner, Gracy et al. ¹⁸ , 2001	Case report	Report moments prior to palliative extubation and the importance of a good approach of the team with family members.	Every health facility needs to develop methods to meet the necessities of each child, family and team. Everyone, regardless of time or disease is entitled to a dignified death.	The family plays an extremely important role in the decision because they must believe they are preventing his child suffering.
<i>Interdisciplinary Pediatric Palliative Care Team Involvement in Compassionate Extubation at Home: From Shared Decision-Making to Bereavement</i>	Postier, Catrine, Remke ¹⁹ , 2018	Case series report	Demonstrate the importance of the pediatric palliative care in two cases.	It is extremely important the presence of a multi-disciplinary personnel that form the palliative care team.	Demonstrated the transport issue in a difficult access countryside area, jeopardizing the arrival of the physicians post-extubation since the team did not expect the patient would survive 2 days.
<i>Factors associated with palliative withdrawal of mechanical ventilation and time to death after withdrawal</i>	Huynh, Walling, Le et al. ⁷ , 2013	Retrospective study	Identify factors associated to palliative extubation and time until death post-extubation.	The conclusion is that patients most dependent of support therapy (with FiO ₂ higher than 70% and use of vasopressors) lead to less time until death.	Patients of this study survived 165 days post-extubation at the most. However, most survived 10 hours after the procedure.
<i>Survey of Respiratory Therapists' Attitudes and Concerns Regarding Terminal Extubation</i>	Willms e Brewer ²⁰ , 2005	Monitoring study	Identify the extent of the involvement of the respiratory physiotherapists in the process of palliative extubation.	Most of the interviewees participated effectively of the palliative extubation and believe the presence of the physician is extremely important, creating a procedure standard.	The respiratory physiotherapists of the present study believe their role in the extubation is to ensure the quality of life and bring relief of suffering.
<i>Home Extubation in a Neonate</i>	Loganathan, Simpson, Boucher et al. ²¹ , 2018	Case report	Report a case where extubation occurred in home environment and explain the processes involved.	The physicians concurred that the best way is to go home, but they believe they need more resources for better efficacy. It is perceived that the bereavement process is more intense for those who died in ICU than those who died at home.	Extubation occurred in the mother's lap and the baby died hours after the procedure. After six weeks, the staff met with the family who expressed their gratitude for the opportunity of spending more time with their infant at home prior to death.

to be continued

Table 1. continuation

Title	Author/year	Type of study	Objective of the study	Conclusion of the author	Impact of palliative extubation
<i>Palliative Extubation: Case Analysis in an Intensive Care Unit</i>	Rebelatto e Moritz ²² , 2017	Cohort study	Evaluate the clinical-demographical profile of patients extubated palliatively in the university hospital ICU.	The conclusion was that most of the patients submitted to palliative extubation were older adults, affected by neurological diseases and mean of 2.5 days from the extubation until death.	All the patients of the present study were in ICU under the effect of analgesic when extubation occurred. It was noticed that the patients survive from minutes to days, but more than half died after 24 hours after the procedure. It is believed that post-extubation living time is related to the severity of the disease and not the ventilator withdrawal.

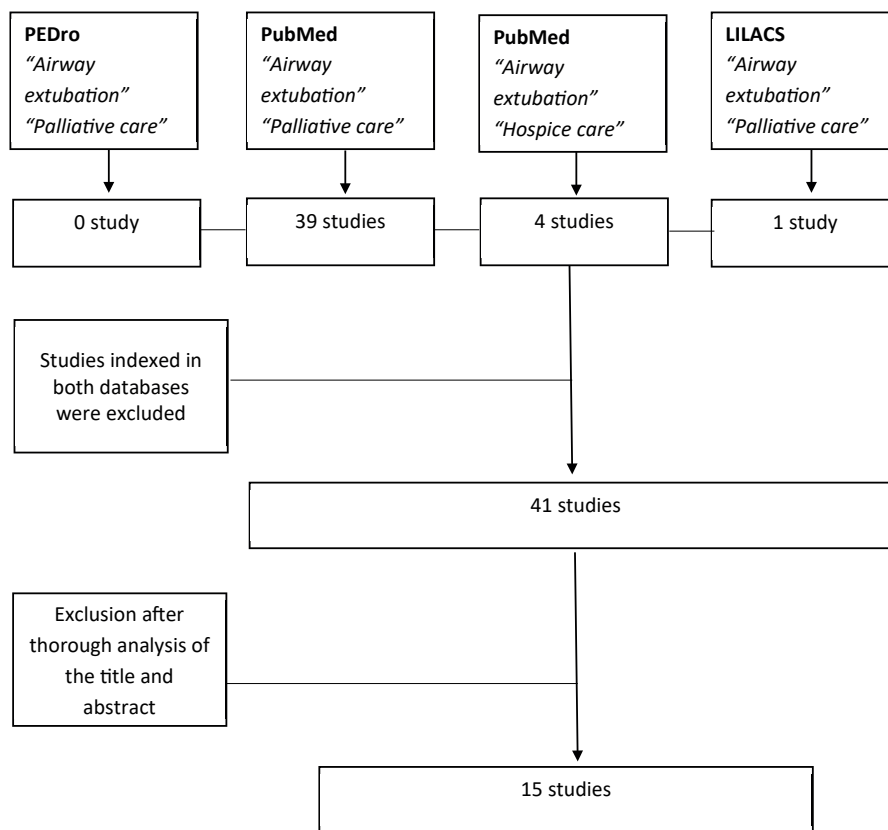


Figure 1. Flowchart of the studies identified

team and a place that meets everyone’s needs are crucial for a peaceful death of the patient, mitigating the suffering of all the involved¹⁸.

According to a study conducted in the Intensive Care Unit (ICU) of a university hospital, great part of the patients submitted to palliative extubation consists of older adults affected by neurologic diseases, their post-procedure time of life ranges from minutes to days, but most of them died after 24 hours. Rebelatto and Moritz²² believe the time of life post-extubation is related to the

severity of the disease and not to the withdrawal of the ventilatory support.

In another subsequent study, it was observed that great part of the patients analyzed died in the hospital where the palliative extubation occurred. Most of them also survived 24 hours in average after the procedure, consistent with the study previously reviewed¹⁰.

Patients dependent from support therapy as ventilation with FiO2 bigger than 70% and vasopressors take less time until death after extubation. In this study, patients

survived 165 days at the most, but the majority lived less than 10 hours after the procedure⁷. For Kok¹², time of death varies according to the existing illness, in the study varied from 0.3 hour (the patient suffered cardiac arrest) to 97 hours (in patients in advanced cancer stages). It was also discussed that the quality of death is extremely important, the sedation was applied in the moment of extubation only for the patients who were already in use of some medication for pain, as morphine.

For better quality of death, Truog et al.²³ described that all the patients should receive anticipatory sedation to avoid suffering and pain since there is no need to wait for a sign of distress to administer the medication because it could cause more suffering for the patient and its family.

Further to sedation or not, it is arguable the withdrawal of the orotracheal tube of these patients. Matzo and Orwig²⁴ concluded there is no protocol for the withdrawal because it varies according to each situation, values, beliefs, and comfort of the patient. Some patients can develop glottis edema, hypersecretion or obstruction of the airways, factors that can lead to respiratory distress after extubation. Factors like facial esthetics for the last farewell of the family lead to the withdrawal of the tube, offering a last moment with better visual memory of the patient. Because of the paucity of studies, it should be pondered what is best for the patient to relief its suffering.

For Grandhige et al.¹¹, rarely the respiratory physiotherapists are involved in the meetings of the team and the family which explains why this professional is not present in this process. And many of the symptoms occurring in the act of extubation as respiratory distress could be avoided.

In counterpart, Willms and Brewer²⁰ showed that most of the respiratory physiotherapists participated of the procedure and believe it is extremely important for a more standardized care. The professionals believe their presence improves the quality of life of the patient, relieving the suffering.

Overall, the return home of a terminal patient is well reported in the studies for being quieter, warmer and less anguishing than in an ICU¹⁴. But despite studies reporting the house as the best place, a cross-sectional study shows that the procedure out of the ICU is extremely challenging needing several resources and new studies to improve the practice¹⁷.

In addition, a more recent study of Clemency et al.¹⁵ proved the possibility of palliative extubation at home since the patient and the family concur, if possible. Returning home became a viable alternative only after transport improvement, how the patient management will occur and cost analysis (ICU and home), even if professionals and family have concerns about transport home⁹.

Simultaneously with other studies that analyzed the advantage of going home for the patient and its family, Loganathan et al.²¹ also reported as the preferred choice, but believe more resources are needed for improved efficacy of the procedure. This study reports as well that the bereavement process of the family in an ICU is excruciating when compared with families who remained with the patient in the home environment until death. Even with the benefits of home palliative extubation, as also reported in Yeow¹³ study, which demonstrated a peaceful moment for the family, because the patient was taken to the place where it was happy.

In a case report of Postier et al.¹⁹ transport of the patient who lived in a rural area of difficult access was complicated also for the healthcare professionals and even without prognosis of life after extubation, it survived two days.

CONCLUSION

Considering the increase of patients with NCDs it is clear that palliative care is extremely important to them to ensure improvement of the quality of life of the ill and the family.

The analysis revealed that according to the family narrative, palliative extubation is the better option for all because the end of life becomes more subtle, diminishing the suffering in general.

In the context described and considering the importance of palliative extubation, new studies are suggested to evaluate the effects and possible protocols for this process. Consequently, this study will contribute for the elaboration of protocols about the theme and for the efficacy of the indication and application of this therapy in palliative care management.

CONTRIBUTIONS

Beatriz Louro contributed substantially for the elaboration, conception and/or design of the study, collection, analysis and interpretation of the data and in critical review. Bianca Kemmilly Rodrigues Paiva contributed for the critical review. Amanda Estevão contributed substantially for the elaboration, conception and/or planning of the study, collection, analysis and interpretation of the data and wording of the manuscript. All the authors approved the final version to be published.

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DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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