

Distinct perceptions of cardiologists and palliative care physicians on heart diseases patients: knowledge integration opportunity

Percepções distintas de cardiologistas e paliativistas sobre pacientes cardiopatas: oportunidade para integração de saberes

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ABSTRACT

Introduction: Among the conditions requiring Palliative Care (PC), cardiovascular diseases have recently received increased attention. The difficulty in recognizing terminality in heart diseases has been indicated as a factor compromising the quality of end-of-life care.

Objective: The aim of this study is to evaluate the perceptions of cardiologists (C) regarding mortality expectations and the need for PC for patients with advanced and/or terminal heart disease.

Method: This is a prospective observational study in which demographic and clinical data were collected from patients admitted to a cardiology center on a single day. The cardiologists attending these patients answered a questionnaire with two "surprise questions" related to the expected mortality within a year and during the current hospitalization. Based on the response patterns, patients were classified into profiles: evolving/advanced non-terminal disease (I/II), terminality (III), and end-of-life phase (IV). Additionally, cardiologists were asked about the need for PC for each patient. A palliative care physician (P) answered the same "surprise questions" based on data from the medical records.

Result: A total of 242 patients (90% of hospitalized patients) were evaluated, of which 34 progressed to death during hospitalization. C and P classified 35.5% and 4.1% of the patients as profile IV, with accuracy in predicting death during hospitalization of 32.6% and 70%, respectively. C recognized the need for palliative care for 93 patients but requested evaluations from the palliative care specialists for only 13 (14%). There was a low rate of recognition of the need for these care services (38.4%), even when C believed that patients had a life expectancy of up to one year (profile III) or that they would die during hospitalization (profile IV).

Conclusion: P are more accurate in predicting patient deaths. Although C recognize the need for palliative care, they request consultations from the specialty (palliative care) for only a minority of patients, reinforcing the need for specific training in general palliative care competencies and greater coordination in case management, including support from an integrated multiprofessional team from both fields of knowledge.

Keywords: Palliative care, Cardiologists, Perspective, Death, Questionnaire

RESUMO

Introdução: Dentre as condições que demandam cuidados paliativos (CP), as doenças cardiovasculares têm recebido destaque mais recentemente. A dificuldade de reconhecer a terminalidade em cardiopatias tem sido indicada como fator que compromete a qualidade do cuidado de fim de vida dos pacientes.

Objetivo: Objetiva-se avaliar a percepção de cardiologistas sobre a expectativa de óbito e a necessidade de CP para pacientes portadores de cardiopatia avançada e/ou terminal.

Método: Trata-se de um estudo observacional prospectivo no qual foram coletados em um dia dados demográficos e clínicos dos pacientes internados em um centro de cardiologia. Os cardiologistas que assistiam esses pacientes responderam a um questionário com duas "perguntas-surpresa" relativas à expectativa de óbito em um ano e na internação atual. A partir do padrão de respostas ao questionário, os pacientes foram classificados em perfis: doença em evolução/avançada não terminal (I/II), terminalidade (III) e fase final de vida (IV). Além disso, foram questionados quanto à necessidade de CP para cada paciente. Um paliativista respondeu às mesmas "perguntas-surpresa" com base em dados dos prontuários.

Resultado: Avaliaram-se 242 pacientes (90% dos internados), dos quais 34 evoluíram a óbito na internação. Os cardiologistas e os paliativistas classificaram 35,5% e 4,1% dos pacientes como perfil IV, com acerto na previsão de óbito na internação de 32,6% e 70%, respectivamente. Os cardiologistas reconheceram a necessidade de CP para 93 pacientes, mas solicitaram avaliação dos paliativistas a apenas 13 (14%). Houve baixa taxa de reconhecimento da necessidade desses cuidados (38,4%), mesmo quando os cardiologistas acreditavam que os pacientes tinham expectativa de vida de até um ano (perfil III) ou que faleceriam durante a internação (perfil IV).

Conclusão: Os paliativistas são mais assertivos na previsão de óbitos dos pacientes. Apesar de os cardiologistas reconhecerem a necessidade de CP, solicitam interconsultas da especialidade (CP) para minoria dos pacientes, reforçando a necessidade de capacitação específica em competências gerais de CP, maior articulação na condução dos casos, inclusive com auxílio de equipe multiprofissional integrada das duas áreas de conhecimento.

Palavras-chave: Cardiologia; Cuidados Paliativos; Percepção; Morte; Questionários.

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INTRODUCTION

Palliative care (PC) is an approach centred on promoting comfort and quality of life for patients and their families, through early assessment and control of physical, social, emotional and spiritual symptoms in the context of life-threatening illnesses and intense health-related suffering¹. This care is provided by a multi-professional team^{2,3} throughout the stages of diagnosis, illness, finitude and bereavement⁴⁻⁶.

Although PC is widely discussed in the context of cancer, it has traditionally been less studied in cardiovascular diseases⁷, which have gained prominence in recent years in terms of the need for PC⁸.

The introduction of palliative care in the early stages of heart disease, especially heart failure, was discussed in 2004⁹ by a consensus of experts in the United States. Today, integration between the two areas of knowledge is recommended by American^{10,11} and European^{12,13} cardiology societies, which recommend the introduction of PC skills in the training of cardiologists as a measure to improve the care of these patients and improve quality of life^{14,15}, symptom control¹⁴⁻¹⁶, reduce the number of hospitalisations¹⁷ and also improve family satisfaction with the care provided¹⁸, an aspect already evidenced in cancer and dementia patients¹⁹⁻²².

Furthermore, specifically in the final phase of life, it is important to consider that the needs of patients and their families may not necessarily be related to health itself, but also to emotional support and attention to the social costs²³. These aspects reinforce the need for integrated multi-professional work, as routinely occurs in PC.

Despite the many benefits associated with the early incorporation of PC into care planning, the absence of tools that signal the progression of the disease and the transition to the terminal phase of heart disease hinder the recognition of the phase of intensified complexity and PC needs of the patients²⁴⁻²⁸. This has an impact on delaying and limiting end-of-life discussions⁵⁴ with an impact on the quality of care, family satisfaction and a significant increase in hospital costs at the end of life.

To this end, tools have been developed to help medical professionals identify these stages and the potential need for PC, especially for cancer patients²⁷⁻³⁰, as well as trying to estimate their survival. These tools include general and specific aspects related to diseases, often using the "surprise question" in their composition. On the other hand, the "surprise question" has been used in isolation in PC practice due to its practicality and simple application³¹⁻³².

This tool was first published in 2008³³ and has since been studied in various populations³³⁻³⁵, including cardiac patients³⁶⁻³⁸ and practice settings³⁹⁻⁴¹. It should be applied by any trained

professional to the physician who is most directly involved in the patient's care and is formulated as follows: "Would you be surprised if your patient died within a year? "

If the answer is yes, there is a subjective impression of longer survival and potentially less need for PC, which could, if the teams were properly trained, be conducted by the professional already caring for the patient, without the need for a PC specialist (Primary Palliative Care)^{42,43}. If the physician's answer to the "surprise question" is negative, it indicates that the prospect of death is already in sight in some way, potentially indicating greater needs and complexities of care, characterising the recommendation for PC to be given by a specialist team (Secondary Palliative Care)⁴².

In practice, the lack of specific PC training in undergraduate and postgraduate medical curricula, on the one hand leads to care considered incomplete according to the recommendation to begin PC upon diagnosis of a chronic and incurable illness and, on the other, entails the overloading of the few specialist teams that exist, especially in countries like Brazil⁴⁴.

Thus, studies show that cardiologists tend to have an inadequate perception⁴⁵⁻⁵⁰ of their patients' PC needs, requesting help from specialists in the field infrequently and often belatedly⁵¹⁻⁵³. This is partly due to the inexpressive number of available studies that use tools to predict palliative needs, specifically in heart disease patients²⁶. Recent data has shown that integration between teams has an impact on the quality of the end of life in cardiac patients in critical environments^{55,56}.

With the consolidated use of the "surprise question", evidence has emerged that, despite identifying the need for PC, this question might not be a good predictor of mortality. Alternatives were therefore sought to improve its accuracy. Therefore, more recent studies have begun to use two surprise questions to try to improve mortality forecasting and also the identification of CP needs⁵⁷⁻⁵⁹.

The aim of this study was to identify differences in prognostic perception and PC needs between cardiologists and palliative care physicians in a population of cardiac patients admitted to a specialised cardiology centre using two surprise questions.

METHOD

This was a prospective cohort study that included patients admitted to the emergency department, medical and surgical wards, and intensive care units (ICUs) of a specialized cardiology center in Brazil. On a pre-scheduled day, previously announced by the hospital board, two researchers trained in the application of the "surprise question" visited inpatient units, ICUs, and the emergency department to identify, for each

patient, the cardiologist most directly involved in their care.

The following inclusion criteria were adopted: patients had to be hospitalized on the day of assessment and have an identified cardiologist as the primary physician in charge of the case. In this context, the cardiologist needed to be available to answer the questionnaire. The exclusion criterion was the absence of signed informed consent by the attending physician.

On the scheduled date, each cardiologist responsible for the cases was asked about their subjective perception regarding survival and the PC needs of each of their patients. To this end, the two researchers posed two questions⁶⁰⁻⁶²:

1. *Would you be surprised if your patient died within one year?*
2. *Would you be surprised if your patient died during this hospitalization?*

Based on the response patterns to these two questions, patients were classified into three profiles⁶²:

- **I/II:** progressive disease or advanced non-terminal disease (expected survival greater than one year after discharge).
- **III:** terminal disease (expected survival less than one year).
- **IV:** end-of-life phase (expected death during hospitalization).

Since profiles I and II referred to patients with less advanced disease (profile I – progressive disease; profile II – advanced non-terminal disease), both were considered as a single group in the analysis.

If a YES response pattern was identified for question 1 and NO for question 2 (considered incoherent), the cardiologist was asked the same questions again so that he could reformulate his impression.

After answering the two questions, the cardiologist was also asked about his impression of the need for palliative care in each case: "Would this patient be suitable for assessment by the Palliative Care team? "

Board 1. Classification of patients into profiles based on the pattern of questions 1 and 2.

Profile	I/II	III	IV
Question 1	YES	NO	NO
Question 2	YES	YES	NO

Legend: Profile I/II - illness in progress or advanced non-terminal illness; Profile III - Terminal illness with life expectancy of up to 1 year; Profile IV - End of Life Phase (expectation of death during hospitalisation);
Question 1: Would it surprise you if the patient died within 1 year?;
Question 2: Would it surprise you if the patient died during this hospitalisation?
Source: Prepared by the authors.

Subsequently, each patient's profile was reviewed by a palliative care doctor, who answered questions 1 and 2 after analysing the medical records. At this point, the following data was collected: date of hospitalisation, age, gender and diagnosis of underlying disease, reason for hospitalisation, place of hospitalisation. At the end of the hospitalisation, the number of cases of each profile in which cardiologists requested assessment by the Palliative Care team and the outcome of each patient (death or discharge) were assessed. For patients who had been discharged, family members were contacted by telephone after 1 year to find out if there had been any deaths in the period.

The data was tabulated in spreadsheets using Microsoft Excel 2013, in which each patient was identified by a code: P1, P2, P3, etc.

The study was conducted after authorisation from the Research Ethics Committee of the Hospital das Clínicas of the Faculty of Medicine of the University of São Paulo (CAAE 12151319.5.0000.0068). All participants (cardiologists) signed an informed consent form after being informed of the study's objectives, methods, risks and benefits.

Data confidentiality was guaranteed by anonymising the participants and securely storing patient data in accordance with the General Data Protection Act (LGPD). Participants were informed of their right to withdraw from the study at any time, without this affecting them in any way.

Descriptive analyses were carried out in absolute numbers and percentages. For continuous variables, the median was used to analyse central measures using the Python programme (version 3.12) and Excel software. Fisher's Exact Test was used to statistically analyse the comparison between the perception of cardiologists and palliative care physicians and the request for inter-consultation for PC.

RESULTS

This study analysed the physicians' impressions of 242 patients (90% of inpatients), whose characteristics are described in Table 1.

Regarding the outcome of hospitalisation, 34 (14.05%) died during hospitalisation and 208 (85.95%) patients were discharged, of whom 164 (68.18%) were alive after one year. It was not possible to contact the family of only 10 patients (4.8%) after one year.

Figure 1 shows the distribution of patients into profiles, according to the response pattern given by the cardiologists consulted and the palliative care physician in the study. Cardiologists considered that a higher proportion of their patients would die during hospitalisation (35.50%) - profile IV. The palliative care physician classified only 4.10% of patients

in this profile. However, they considered that more patients (36.8%) would survive up to one year. For the cardiologists, this figure was 24.8%.

Agreement in the profile classification between the specialist doctors was calculated for 124 patients (51.20%): 90 from profile I/II, 24 from profile III and 10 from profile IV.

Table 2 shows the prognostic accuracy of cardiologists and palliative care doctors with regard to the occurrence of death.

Table 1. General characteristics of the sample (n = 242).

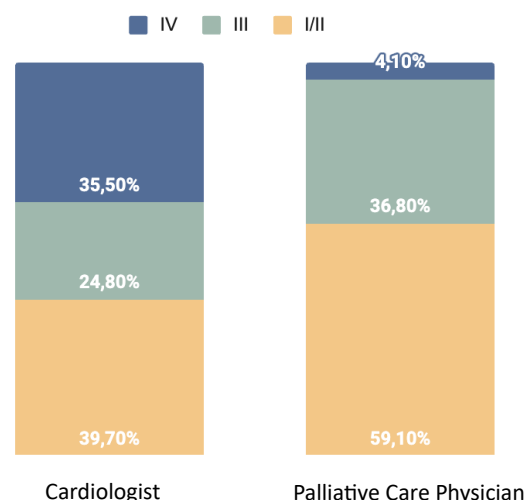
Variables	Total (n=242)	
	N	(%)
<i>Gender</i>		
Female	108	44.6 %
Male	134	55.4 %
<i>Base Disease</i>		
Cardiomyopathy*	64	26.45 %
Coronary artery disease	56	23.14 %
Heart valve disease	45	18.60 %
Lung diseases	21	8.68 %
Post-transplant	11	4.55 %
Conduction disorders and arrhythmias	9	3.72 %
Systemic arterial hypertension	8	3.31 %
Aortic aneurysm	5	2.07 %
Others	23	9.5 %
<i>Type of hospitalisation</i>		
Emergency	136	56.2 %
Elective	106	43.8 %
<i>Reason for hospitalisation</i>		
Clinical	136	56.2 %
Surgical	106	43.8 %
<i>Place of hospitalisation</i>		
Clinical ICU	44	18.18 %
Surgical ICU	38	15.70 %
Ward	128	52.89 %
Emergency Department	26	10.74 %
Others	6	2.48 %
<i>Outcome of hospitalisation</i>		
Discharge	200	82.64 %
Death	34	14.05 %
Transfer	8	3.31 %

Abbreviations: ICU – intensive care units.

*Cardiomyopathy: chagas, hypertrophic, alcoholic, dilated, hypertensive, ischaemic, peripartum, viral, congenital heart disease.
Source: Prepared by the authors.

Figure 1. Classification by profiles according to Cardiologist and Palliative care physician.

Classification by profiles according to the specialists



Legend: Profile I/II - illness in progress or advanced non-terminal illness; Profile III - Terminal illness with life expectancy of up to 1 year; Profile IV - End of Life Phase (expectation of death during hospitalisation).

Source: Prepared by the authors.

Table 2. Classification of patients into profiles by cardiologists and palliative care physicians and prognostic accuracy according to outcome during hospitalisation and 1 year after hospitalisation.

Profile	Total classifications ^a	Correct classifications ^b	Accuracy (%) [*]
<i>Cardiologist</i>			50.4 %
I/II	96	86	89.6 %
III	60	8	13.3 %
IV	86	28	32.6 %
<i>Palliative care physician</i>			60.7 %
I/II	143	122	85.3 %
III	89	18	20.2 %
IV	10	7	70.0 %

Legend: Profile I/II - illness in progress or advanced non-terminal illness; Profile III - Terminal illness with life expectancy of up to 1 year; Profile IV - End of Life Phase (expectation of death during hospitalisation).

^a Number of patients classified into profiles by the doctor.

^b Number of patients whose prognosis corresponded to the profile assigned by the doctor, i.e. patient profile I/II survived up to 1 year after discharge, patient profile III died within 1 year of discharge and patient profile IV died during hospitalisation.

^{*} Percentage of correct doctor assessment in relation to the patient's prognosis.

Source: Prepared by the authors.

The percentage of correct assessment by the palliative care physician (60.7%) was higher than that by the cardiologists (50.4%). This difference is particularly evident in the prediction of death during hospitalisation, with an accuracy rate of 70% for the palliative care doctor, compared to 32.6% for the cardiologists.

Table 3 shows the cardiologists' perception of the need for Palliative Care (PC) and the frequency with which they requested consultations with the PC team.

Although the cardiologists thought that 93 patients (38.4%) needed PC, only 14 patients (15%) had a PC consultation requested.

DISCUSSION

No studies were found that comparatively measured the perception of cardiologists and palliative care physicians about the survival of patients with heart disease, especially using the same analysis tool.

However, there are studies that show that the perception of palliative care physicians has only been compared to that of emergency physicians⁶⁴ and paediatric cardiologists⁶⁵. The perspectives of these specialists in relation to palliative care doctors reveal a disagreement in communication approaches and in the perception of the need for palliative care, respectively.

In this study, we observed a significant difference between the experts in their perception of the end of life (profile IV). Cardiologists and palliative care physicians considered 35.50% and 4.10% of patients to be at this stage of the disease, respectively. It is noteworthy that with regard to end-of-life patients, the experts agreed in only 10 cases, which indicates that there are more heterogeneous perceptions among them with regard to the end-of-life phase. This discrepancy may be attributed to differences in the training of these professionals in relation to specific skills and the clinical approach of each speciality⁶⁶⁻⁷⁰.

Insufficient training in palliative care among cardiologists is demonstrated by the low rate of recognition of the need for such care (38.4% of cases), even when they believed that the patients had a life expectancy of up to one year (profile III) or that they had died during hospitalisation (profile IV). Although the indication for Palliative Care is most commonly remembered in the final phase of life, several studies recommend that all patients suffering from life-threatening conditions should be assessed by the palliative care team from the moment of diagnosis^{3,4,14,16,71}.

The request for interconsultation for palliative care occurred in only 13 of the 93 patients that the cardiologists believed needed this support. Joint action with palliative care

Table 3. Cardiologists' perception of the need for Palliative Care and requests for interconsultation with the speciality.

Scenarios	Interconsultation request		
	YES	NO	Total
<i>Need for PC*</i>			
YES	13	80	93
NO	1	148	149

*p-value < 0.01.
Abbreviations: PC: Palliative Care.
Source: Prepared by the authors.

physicians in this context is important to provide adequate support for the suffering of patients and their families^{4,14-16,72-74}.

When it comes to predicting the outcome of death, the palliative care doctors' ability to predict death during hospitalisation was significantly higher (70%) than that of cardiologists (32.6%). This finding is justified by differences in training and specific skills between the two specialities, especially in aspects related to the end of life and symptom control. These differences are recognised by trainee cardiologists⁷⁵ and by the European Society of Cardiology in recent care guidelines for congestive heart failure⁷⁶.

These guidelines recommend that PC competences should be part of the training programmes for cardiology doctors and nurses. In addition, the guidelines recommend that referral for PC in the event of an indication for heart transplantation should take place on a protocol basis⁷⁷.

In line with this perspective, as of the latest curriculum guidelines for medical courses in Brazil, in 2022⁷⁸, teaching palliative care became compulsory in undergraduate medical courses.

In summary, this study indicates that cardiologists and palliative care doctors have different perceptions of the survival prognosis of the heart patients under their care. This can jeopardise the implementation of care planning that is more appropriate to the severity of the patients and the quality of the care provided.

It is hoped that these data will contribute evidence on the need to include palliative care competences in the training of cardiologists. As long as this is not a reality, bedside discussions, lectures and the participation of palliative care physicians in cardiology congresses should be encouraged. It is understood that there should be greater interdisciplinary collaboration between the two areas, as well as gradual training in palliative care for nurses and other health professionals.

This study has limitations: only hospitalised patients were assessed, and only in one specialised cardiology centre,

which limits the generalisability of the results to other contexts and practice settings. Furthermore, the length of experience and characteristics of the participating cardiologists (clinicians, intensivists or surgeons) were not assessed. This could lead to a better understanding of the disparity in impressions between the two specialities.

The highlights of this study include an unprecedented analysis in Brazil of the assessment of PC needs by cardiologists compared to the assessment made by PC specialists. The knowledge and systematic use by cardiologists of prognostic prediction tools that are common in palliative care practice can contribute to a greater refinement of these professionals' impressions of the end of life and aspects related to the suffering of their patients.

CONCLUSIONS

No studies have been identified that comparatively measured the perceptions of cardiologists and palliative care (PC) physicians regarding the survival of patients with heart disease, particularly when using the same analytical tool. However, existing studies have compared the perceptions of palliative care physicians only with those of emergency physicians⁶³ and pediatric cardiologists⁶⁴. The perspectives of these specialists, when contrasted with those of palliative care physicians, reveal discrepancies in communication approaches and in the recognition of PC needs, respectively.

In this study, we observed a significant difference between specialists in their perception of the end-of-life phase (profile IV). Cardiologists and palliative care physicians classified 35.5% and 4.1% of patients in this stage, respectively. Notably, agreement between specialists regarding patients at the end of life occurred in only ten cases, indicating heterogeneous perceptions concerning the final phase of life. This divergence may be attributed to differences in training, particularly in competencies related to end-of-life care and the clinical approach inherent to each specialty^{65–69}.

The insufficient training in PC among cardiologists is evidenced by the low recognition rate of the need for such care (38.4% of cases), even when they believed that patients had a life expectancy of less than one year (profile III) or would die during hospitalization (profile IV). Although PC referral is most often remembered at the end-of-life phase, several studies recommend that all patients experiencing suffering related to life-threatening conditions be assessed by PC teams from the time of diagnosis^{3,4,14,16,70}.

Referral for PC consultation occurred in only 13 out of 93 patients for whom cardiologists acknowledged the need for this support. In this context, the joint action of palliative care

specialists is essential to adequately address patient and family suffering^{3,4,14-16,45,71}.

Regarding mortality prediction, the accuracy of palliative care physicians in forecasting death during hospitalization was significantly higher (70%) compared with cardiologists (32.6%). This finding is explained by differences in training and specific competencies between the two specialties, particularly in end-of-life and symptom management. Such differences are acknowledged by cardiologists-in-training⁷² and highlighted in recent guidelines from the European Society of Cardiology for the management of congestive heart failure⁷³.

These guidelines recommend that PC competencies be incorporated into cardiology training programs for physicians and nurses. Additionally, they advocate for systematic PC referral in cases of heart transplant indication⁷⁴. In line with this perspective, since the most recent revision of Brazilian national medical curriculum guidelines in 2022⁷⁵, PC education has become mandatory in undergraduate medical training.

In summary, this study indicates that cardiologists and palliative care physicians hold distinct perceptions regarding the survival prognosis of cardiac patients under their care. This divergence may compromise the implementation of care plans aligned with disease severity and the quality of patient care. These findings underscore the need to integrate PC competencies into cardiology training. Until such integration becomes a reality, bedside discussions, lectures, and the participation of palliative care specialists in cardiology conferences should be encouraged. Greater interdisciplinary collaboration between the two fields, as well as progressive PC training for nurses and other healthcare professionals, is essential.

This study has limitations: it evaluated only hospitalized patients in a single specialized cardiology center, restricting the generalizability of findings to other settings. Additionally, the experience level and clinical backgrounds of the participating cardiologists (clinical, intensive care, or surgical) were not assessed, which could provide further insight into the divergence of perceptions between the two specialties.

As strengths, this study provides an unprecedented analysis in Brazil of cardiologists' assessment of PC needs compared with evaluations conducted by PC specialists. Familiarity with and systematic use of prognostic prediction tools—commonly applied in PC practice—by cardiologists may enhance the accuracy of their prognostic impressions regarding end-of-life trajectories and the suffering experienced by their patients.

CONTRIBUTION OF THE AUTHORS

Julee Quispe contributed to the tabulation of results, data analysis and interpretation, visualisation, initial drafting of

the manuscript, final revision and critique of the manuscript. Bruna de Almeida Cristofolini contributed to the tabulation of results, data analysis and interpretation, visualisation, initial drafting of the manuscript, final revision and critique of the manuscript. Laura Mestriner Tavares de Carvalho contributed to the tabulation of results, data analysis and interpretation, visualisation and initial drafting of the manuscript. Carolina Corritori Coviello contributed to the tabulation of results, data analysis and interpretation, visualisation and initial drafting of the manuscript. Daniel Battavini dei Santi contributed to the design of the study, data collection, tabulation of results and methodology. Ricardo Tavares de Carvalho contributed to the design of the study, methodology, guidance and supervision, final revision and critique of the manuscript.

CONFLICT OF INTEREST

We declare no conflict of interest.

FUNDING

We declare that there is no funding.

DECLARATION OF DATA AVAILABILITY

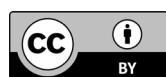
Research data is available in the body of the document.

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