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PERFORMANCE OF THE MULTIPROFESSIONAL GERONTOLOGICAL TEAM TO PATIENTS IN POST COVID-19 TREATMENT: A CASE STUDY

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ABSTRACT

Objective: To report the multiprofessional gerontological care provided in the hospital context to an elderly person with multiple complications caused by coronavirus infection. **Methods:** This is a case study with a 63-year-old male patient treated at a reference hospital for the treatment of coronavirus infection. A multidisciplinary approach was carried out, based on health care instruments for the elderly used by the gerontological team during hospitalization and post-discharge care. **Results:** There was a significant improvement in the patient's general condition, as well as in cognitive status, muscle tone and a good positive prognosis of pressure injuries (PPI) acquired during hospitalization. **Conclusion:** Thus, it is concluded that the multidisciplinary care provided was of great importance for the restoration of health and the consequent discharge of the patient, showing that care guided by gerontological guidelines are essential, as well as the process of recovery at home with post-discharge care.

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INTRODUCTION

Since the beginning of the new coronavirus pandemic (SARS-CoV-2), with the first case in December 2019, in the city of Wuhan, China, it has been observed that the elderly population is a risk group for infection, worsening and lethality caused by the virus (BEZERRA & LIMA & DANTAS, 2021), requiring special care for this age group, which, according to projections, will add up to 434 million people in the world (ZHANG et al., 2020). As published by the Pan American Health Organization (2020), 40% of COVID-19 cases develop mild symptoms (fever, cough, dyspnea, myalgia or arthralgia, odynophagia, fatigue, diarrhea and headache), 40% have symptoms moderates (pneumonia) and 15% develop severe clinical manifestations, requiring long-term hospitalization, causing several complications and sequelae resulting from both the disease and hospitalization. Patients require acute interventions including mechanical ventilation, sedation and/or prolonged bed rest, may present sequel and including reduced muscle strength and physical weakness, respiratory failure, swallowing, cognitive and mental health deficiencies (BASTOS et al., 2020; BORGES et al., 2020).

Among the main complications, in addition to respiratory, neurological sequelae were observed (WHITAKER & ANSON & HARKY, 2020), including delirium or encephalopathy, stroke, meningoencephalitis, anosmia and hypogeusia (TONG & WONG & ZHU & FASTENBERG & THAM, 2020), acute renal failure, sepsis, acute cardiac dysfunction, anxiety, depression and sleep disorders (ROGERS et al., 2020; BORGES et al., 2020). In many cases, neurological manifestations have been reported even in the absence of respiratory symptoms (PAHO/WHO; 2020). In addition to all these dysfunctions and complications resulting from COVID-19, the elderly public, in turn, presents numerous physiological changes resulting from the aging process, among which it can highlighted the changes in the integumentary system, making them more susceptible to skin lesions that can affect mainly elderly people hospitalized for long periods (GRDEN et al., 2018). Due to the numerous disorders caused by the disease in question, the affected patient needs an appropriate management that involves him in all its uniqueness and its clinical and biopsychosocial context. The multidisciplinary team must provide care, focused on the needs of the disease and the hospitalization process, promote the reestablishment and rehabilitation of functions, as well as guide the maintenance of health

after hospital discharge associated to the continuity of adequate care (DANTAS et al, 2020). Based on the above, the objective was to report the main complications caused by COVID-19 to an elderly hospitalized and the multidisciplinary gerontological care provided.

Identification: Male patient, 63 years old, weighing 93 kg, height 1.75 meters, resulting in a body mass index (BMI) of 30 kg/m². He had whole skin, hydrated, flushed and without signs of inflammation. Resident in Ponta-Grossa-PR city, married, Catholic, retired and active worker. He denies smoking and alcoholism. Follow-up by the primary health care unit (PHCU) of reference.

Clinical Context

1st Hospitalization: Patient without chronic non-communicable diseases, started with flu-like symptoms on February 6th, 2021, presenting odynophagia, dry cough, myalgia, fever and dyspnea. He was admitted to the Emergency Care Unit (ECU) on February 19th, with a rapid lucid reagent antigen test, oriented (Glasgow Coma Scale – GCS=15) with fever (38.6°), tachypneic (Respiratory rate of 35 breaths per minute) and with 67% saturation of room air with respiratory effort, requiring orotracheal intubation (OI), evolving to the use of invasive mechanical ventilation (IMV) (GCS=3). On February 20th, he was referred to the Regional University Hospital of Campos Gerais (HURCG) with a diagnosis of severe acute respiratory syndrome, with a positive result for SARS-CoV-2 (severe respiratory acute syndrome coronavirus 2). He needed to be admitted to the Intensive Care Unit (ICU), used IMV, sedatives, analgesics, neuromuscular blockers and antibiotic therapy, remaining in this condition until February 25th, evolving to the process of weaning from mechanical ventilation. On February 27th, the patient was extubated, uneventfully, requiring ventilatory support with low-flow oxygen therapy (GCS=12). On February 28th, he presented improvement in peripheral oxygen saturation, with no further need for the use of oxygen therapy. At this time, the patient also presented an improvement in the level of consciousness with a score of 13 on the GCS.

On March 1st, 2021, he was transferred to the infirmary, in the medical clinic, where he remained under spontaneous ventilation, in room air. He was evaluated on March 3rd by the Multiprofessional Gerontological Care Team of HURCG, formed: Nurse, Physiotherapist, Dental Surgeon, Pharmacist and Social Worker. During the physical examination, the team found generalized muscle weakness, only sitting in bed, unable to perform orthostatism and the presence of pressure injuries (PPI) acquired during ICU admission in the sacral and calcaneal region. The sacral region PPI (FIGURE 1, image A) was classified as grade 3 with irregular edges, approximate length of 90 mm, without tissue depth, containing granulation tissue, skin loss in its thickness and fat was visible, not containing characteristic odor. On the other hand, the PPI in the calcaneus (FIGURE 2, images A and B), was classified as grade 2, presenting as an intact bubble, which contained serous exudate inside, which later came to rupture due to shear, at this stage it presented partial loss of the skin in its thickness, regular and rounded edges, approximate extension of 50 mm, the wound bed was pink and moist, without a characteristic odor, showing itself to be a viable wound bed. The injuries were properly treated by the team and are better described in the intervention section. On March 11th, the patient was discharged from the hospital, with dressings performed and proper guidance regarding care, being instructed and referred to follow up with the reference PHCU, with a return appointment scheduled at the hospital one week after discharge.

Gerontological Evaluation: The patient was evaluated during the first hospitalization in the medical clinic by the gerontological care team of the HURCG, composed of multidisciplinary residents, using several scales and functional tests validated in the literature for evaluation in the elderly. The first test applied was the Clinical Functional Vulnerability Index-20 CFVI-20), used for screening the vulnerability of the elderly (DE MORAES et al., 2016). On this scale, the patient achieved a score of 23 points, being classified as frail.

Next, the Mini Mental State Examination (MMSE) was applied, an instrument widely used for cognitive screening, in which the elderly could not score, suggesting at that time a cognitive deficit (DE CASTILHOS & DE BARBA, 2018). Next, the Katz Index was performed, used to assess dependence to perform basic activities of daily living (BADL), in which the elderly person presented dependence to perform all BADL (MENDES et al, 2020). Still, the Medical Research Council (MRC) scale was applied, which assesses the degree of strength, and indicates that individuals with less than 48 points have muscle weakness (LAPROVITA OLIVEIRA et al, 2020). In this, the patient had a reduction in muscle strength, as his score was 36 points. Muscle strength was also evaluated by handgrip strength, the dynamometer used was the JAMAR brand, hydraulic, with a scale from 0 to 90 kg, and the values that demonstrate altered examination for hospitalized patients are < 27 kg for men, and the patient scored D: 12 kg and E: 11 kg, again reinforcing muscle weakness (PARRA, et al, 2019).

2nd Hospitalization

On March 18th, the patient returns for an outpatient consultation, reporting fever the day before, with complaints of pain in the sacral lesion region. After evaluation, the responsible physician verified the presence of an infectious focus in the lesion and chose to hospitalize the patient for laboratory tests, analgesia and antibiotic therapy to confirm the diagnosis and treatment. On March 19th, the gerontological care team resumes patient care, performing dressings on sacral and calcaneal lesions with a differentiated approach. On March 20th, debridement was performed by the medical team of the sacral region and a collagenase dressing was applied. On March 22nd, the test result shows infected sacral PPI, continuing the treatment with antibiotic therapy and multiprofessional care, performing orthostatism with assistance. On March 24th, still undergoing treatment with antibiotic therapy and continuity of dressings and photobiomodulation in calcaneal PPI, the patient walks around the room with the aid of a walking aid device (walker), facilitating the recovery of injuries due to changes in posture. On April 1st, the patient completes the 10 days of antibiotic therapy, with improvement in the infection and the appearance of the sacral lesion (Figure 1, image C), with a discharge plan for the following day. On April 2nd, the patient is discharged from the hospital, being reassessed by the gerontological care team, with an outpatient return scheduled, being referred to the reference PHCU and accompanied by the gerontological care team at home, for continuity of care with dressings in PPI.

Gerontological Evaluation: After the second hospitalization, the patient was monitored by the gerontological care team and prior to his discharge, on April 2nd, he was reassessed by the team, applying again the scales and tests to which the elderly person was submitted after leaving the ICU, in the first contact of the team with the elderly in the medical clinic. In the clinical functional assessment (CFVI-20), the elderly person was classified as pre-frail, with 10 points. In the mental state examination (MMSE), he obtained a cognition degree of 24 points, showing preserved cognitive. In functional capacity (Katz Index) it presented 5 points, classified as independent for performing basic activities of daily living (BADL) and in the assessment of muscle strength, it presented a reduction in overall muscle strength (MRC: 48 points and dynamometry D: 24 kg and E:15 kg), but when compared to the beginning of hospitalization, there was improvement.

Post Hospital Discharge: The patient was discharged from the hospital, returned home with evolution after hospitalization, performing the basic activities of daily living independently, performing posture transfers (lying to sitting and sitting to standing) without assistance and walking with minimal assistance from the walking aid device (walker). The gerontological care team continued to monitor the patient through telemonitoring (calls made weekly to the elderly, in order to clarify doubts and provide guidance) and through home care, where on April 9th and 16th they provided home care to the patient, with special dressings for sacral and calcaneal lesions. Due to the pandemic situation, the PHCU situation became

more susceptible to difficulties, due to the lack of professionals and shortage of materials. Thus, the dressings are still being performed by the hospital's gerontological care team, with an apparent improvement in the lesions (FIGURE 1 and 2, image D).

Identified Problems

- Situation of dependence of the patient, in basic activities of daily living, with family support.
- Situation of cognitive decline and motor decline.
- Overload of the patient, elderly and unable to perform the main caregiver actions.
- Presence of pressure injuries, with difficult healing due to the presence of infection.
- Lack of adequate post-discharge care.

Multiprofessional Intervention: Due to the problem of worsening the state of functional dependence, multidisciplinary care was provided to the patient during the hospital stay, with the support of the family. Each professional has an important role in the fight against COVID-19. The work of the multidisciplinary team in health care provides comprehensive care and expands the dissemination of complete information, establishing measures to control the transmission of the virus.

Nursing: By coping with the patient's clinical condition, where he developed pressure lesions with a more accentuated degree in the sacral region and in the left lower limb (LLL) in the calcaneus region (FIGURE 1 and 2). It was approached with management maneuvers within the hospital, taking into account the fight against the pandemic, and with limited resources, offering the patient a dignified and effective treatment. At first, the lesion in the sacral region was approached by the medical team, who performed manual and chemical debridement using an enzymatic debridement agent (FIGURE 1). Subsequently, the nursing team that followed up on the care of the injury. In the first hospitalization, dressings were performed by the team every 2 days, due to the need for each lesion, so at each dressing change, photobiomodulation was performed in PPI in the calcaneus. It was used by the nursing team, when handling the lesions: Warm saline 0.9% (with a temperature of 37°, which provides optimization in the healing process); purified water (0.1% undecylaminopropyl betaine, 0.1% polyhexanide, glycerol, hydroxyethylcellulose) for cleaning the wound bed, preventing biofilm formation and providing moisture for the wound; silver alginate, foam board to aid in exudate absorption and filling the entire cavity; and, rayon or rayon which is a cellulosic fiber fabric.

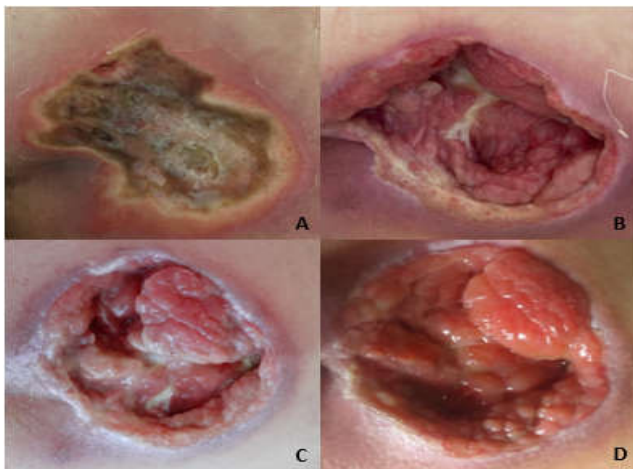


Figure 1. Pressure injury in the sacral region

In the second hospitalization, dressings were performed every 3 or 4 days depending on the assessment of the wound bed and also related to the cost-benefit of the resources implemented in this phase, with photobiomodulation being performed only in calcaneal lesions, since its application is not indicated in infected lesions. Among the

measures addressed after discharge, the main one was the training of the reference family, with the maintenance of the secondary dressing, and handling without contamination of the materials used to clean the bed and wound margin.

A: Initial appearance of the lesion, without dressing and photobiomodulation; B: Aspect of the lesion after debridement by the medical team and application of photobiomodulation and dressing; C: Aspect of the lesion on the day of hospital discharge; D: Aspect of the lesion after hospital discharge (home).



Figure 2. Pressure injury on the left calcaneus

A: Initial appearance of the lesion, without dressing and photobiomodulation; B: Appearance of the lesion after breaking the skin and eliminating exudate; C: Appearance after mechanical lesion debridement and application of photobiomodulation and dressing; D: Aspect of the lesion after hospital discharge (home).

Physiotherapy: During hospitalization, the patient was attended by physiotherapy professionals, with different approaches according to his needs. During the period he was in the ward, the patient performed active-assisted muscle strengthening exercises with progression to active and isometric (upper limbs and lower limbs) with the aid of physiotherapy at least once a day, as well as being oriented to the patient and companion on the continuation of them alone at other times of the day, trunk control training, posture change training (lying to sitting and sitting to standing), gait training with the aid of an auxiliary gait device (walker), training balance (dynamic and static), breathing exercises (ventilatory patterns, reexpansive maneuvers and intermittent positive pressure breathing -IPPB) and photobiomodulation in the pressure lesion in the left heel with a dose of 2 Joules, with punctual application throughout the lesion region, associating the red type with infrared, to improve tissue regeneration, vasodilator action and analgesia (FIGURE 3).



Figure 3. Photobiomodulation approach during hospital stay

Photobiomodulation in a pressure lesion in the left heel during hospitalization.

Dentistry: In the first evaluation carried out by the dental team, the patient was partially dentate upper and lower, with a large amount of biofilm present in dental elements, presence of active carious lesions and residual root in quadrant 4. The patient did not use removable partial dentures and presented hydrated mucous membranes and palate, with normal salivation. The patient's tongue contained a large amount of coating and his oral hygiene was considered precarious. During hospitalization, the patient was seen by the dental team in the Intensive Care Unit with the main objective of preventing the patient from presenting secondary infections associated with mechanical ventilation, which he needed in the first days of hospitalization. Later, when he went to the ward called the medical clinic, the dental care was continued, with the aim of maintaining oral health. Dental care in the intensive care unit and medical clinic consisted of dental evaluation, orotracheal aspiration with aspiration probe, to remove accumulated secretions in the mouth and oropharynx. Oral hygiene with the aid of a flexible swab soaked in a 0.12% non-alcoholic chlorhexidine gluconate solution, gases and dental floss covering dental elements, tongue, buccal mucosa and palate. Finally, mucosal hydration with essential fatty acid (EFA) was performed. Oral hygiene guidance was also provided for both the patient and companion, reinforcing the importance of removing the accumulated biofilm to prevent secondary infections originating from oral microorganisms. Figure 4 shows the materials used by the dental team to perform oral hygiene on the patient.

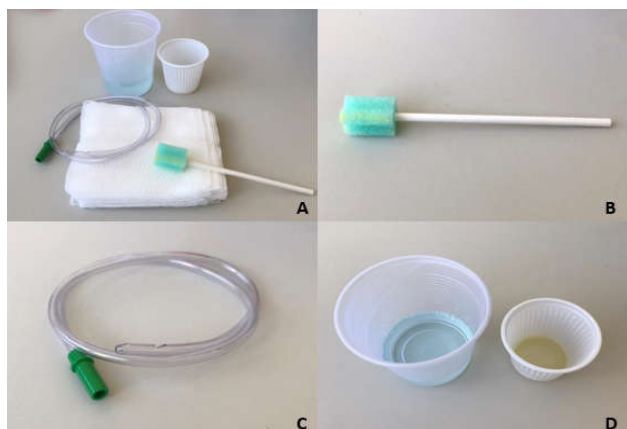


Figure 4. Materials used by the dental team

A: Oral hygiene kit containing 0.12% chlorhexidine gluconate, essential fatty acid, aspiration probe, flexible rod and gases; B: flexible rod; C: aspiration probe; D: containers containing 0.12% chlorhexidine digluconate and essential fatty acid.

During the period hospitalized in the medical clinic, the patient and companion were oriented and assisted with a multidisciplinary care plan developed by the gerontology care team, which was composed of bed-leaving stimuli, continuation of the sitting to prevent possible complications, such as the onset of new injuries, maintain or improve cognition and autonomy (time/space and functionality guidelines), constant skin hydration, dressings, oral hygiene and lip hydration, position changes, proper positioning in bed, care with falls, continuity of therapeutic exercises, among others.

DISCUSSION

The elderly are highlighted in the COVID-19 pandemic, due to the potential risk of the population, related to infection, aggravation and lethality by the virus, either because of the changes in which the body suffers with age or because the body's defense system is less responsive when compared to adult population in general (VALENCA et al, 2017). In the present study, it can be observed that the evaluated individual was elderly, who was infected by COVID-

19, suffering from an aggravation of the disease, requiring hospitalization. In view of the worldwide impact caused by the pandemic, several sequelae left in individuals who were hospitalized due to contamination by SARS-CoV-2, which requires a multidisciplinary team in patient care for adequate treatment of the different manifestations left by COVID-19 (NIELSEN, 2020). According to the World Health Organization-WHO (2020), the main complications that can be noted are the presence of pulmonary fibrosis with decreased lung volume, requiring ventilatory support, presence of pressure injuries (PPI), generalized muscle weakness, associated infections the oral cavity, loss of autonomy, delirium, anxiety, depression, strokes, diabetes, among others. In the present study, complications were found in the evaluated individual, corroborating the WHO study (2020), with generalized muscle weakness, presence of pressure injuries in the sacral and calcaneal regions, delirium, loss of autonomy and the development of type 2 diabetes. Hospital admission rates and length of stay increase with age, as does the presence of chronic conditions. When the elderly individual is hospitalized, they become more susceptible to the occurrence of various adverse events with a higher prevalence of development of PPI, associated to a longer period of immobility, which can result from prolonged and intense pressure on the skin in regions with prominence bone combined with shear and moisture, and also the possible consequences caused by prolonged hospitalizations, whether due to the need to use mechanical ventilation or acquired generalized weakness.

The onset of PPI can aggravate the patient's condition, which may lead to hospital readmissions, increased hospital costs, economic, social and family expenses, in addition to the appearance of associated chronic conditions. Thus, the great importance of preventing these complications, with adequate care through multiprofessional health care to reduce hospitalizations from primary care and reduction of readmissions with appropriate guidance from tertiary care. The pandemic moment reinforced the need for multiprofessional gerontological care, with actions to care for the elderly, aiming at providing assistance for better well-being, autonomy and quality of life for this public (DE ALMEIDA HAMMERSCHMIDT & SANTANA, 2020). The multidisciplinary team aims to increase the effectiveness and quality of care in the health area, through assistance provided to individuals affected by COVID-19, providing a faster and more satisfactory recovery. The performance of the multidisciplinary team was essential in the case of the approached individual, to improve the patient's muscle strength, consequently improving the frailty, which presented general weakness due to hospitalization in the ICU and the use of medications, being important to rescue his independence, which managed to recover the ability to perform (BADL) during hospitalization and improve cognitive impairment through attention, in addition to assisting in posture transfers, resulting in improvement in PPI, which evolved positively through special dressings and photobiomodulation. Continuing treatment even after discharge is extremely important so that individuals do not need to be hospitalized again. In this study, the elderly person needed a new hospitalization due to the lack of employees and care provided by the health network in the community, a network that is also overloaded. Brazilian health services have been facing difficulties for some time, such as lack of professional participation, work overload, infrastructure, devaluation of some knowledge and misunderstanding of the methods used (PINHEIRO & AZAMBUJA & BONAMIGO, 2018). The result of this occurrence was the infection that developed in the wound bed in the sacral region, and generated more days of hospitalization for treatment with intravenous antibiotics. At the last hospital discharge, the gerontological team was given the opportunity to monitor the patient's recovery at home, with positive development (Figure 1 image D and figure 2 image D).

Final Considerations

It is concluded that the multidisciplinary care provided was of great importance for the restoration of health and the consequent discharge of the patient, showing that care guided by gerontological guidelines

are essential, as well as the process of recovery at home with post-discharge care provided by the team.

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