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DERLEME / REVIEW

YOĞUN BAKIMDA PALYATİF BAKIMIN GEREKLİLİĞİ

NECESSITY OF PALLIATIVE CARE IN THE INTENSIVE CARE

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ÖZ

Yaşlanan popülasyon ve yaşam süresinin artmasını sağlayan teknolojiler nedeniyle ciddi veya yaşamı tehdit edici hastalıklara sahip bireylerin sayısı giderek artmaktadır. Bu hastalıklar sırasında yaşam kalitesini arttırmak için artan bir şekilde palyatif bakım programları geliştirilmektedir. Palyatif bakımda hizmet, deneyimli ve eğitimli sağlık personeli ve gönüllülerden oluşan bir ekip tarafından sunulmakta ve her ülkenin kendi koşulları içerisinde; hastane ortamında, birinci basamak sağlık alanlarında, ev ortamında ve son dönem evleri veya hospislerde verilmektedir. Yoğun bakım üniteleri, kritik hastaların hızlı ve hayat kurtarıcı müdahaleler aldığı özgün bakım ortamlarıdır. Fizik tedavi ve rehabilitasyon programları gelişmiş ülkelerde pek çok hastanede yoğun bakım ünitelerine entegre olmuş bir bölüm olarak yer almaktadır. Yoğun bakım ünitelerinde hastaların ihtiyaçları ve komplikasyonları göz önünde bulundurulduğunda, bu hastaların yaşam kalitelerinin iyileştirilmesinin önemi akılda tutulması geren bir durum olmalıdır. Fizik tedavi ve rehabilitasyon programları ile hastalardaki optimum respiratuar ve sirkulatuar fonksiyonun sürdürülmesi, kas atrofisi ve kas kısalmasının, eklem kontraktürlerinin önlenmesi, ağrının kontrol edilmesi ve giderilmesi, fonksiyonun ve bağımsızlığın optimize hale getirilmesi, hastaların eğitimi ve bakıcının katılımı hedeflenmektedir. Fizik tedavi ve rehabilitasyon uzmanları, fizyoterapistler ve iş-uğraşı terapistleri multidisipliner palyatif bakım ekibi içerisinde hastaların mobilitesinin, bağımsızlığının ve yaşam kalitesinin arttırılmasına yardımcı olmak için birlikte çalışmaktadırlar. Maalesef palyatif bakım kaynaklarının dağıtımı sırasında fizyoterapi ve rehabilitasyon olasılıklarının yüksek oranda göz ardı edilmekte olduğu ve gerekli kaynak aktarımının yeterince yapılmadığı gözlenmektedir. Biz bu yazımızda palyatif bakımın önemli bir bileşeni olan rehabilitasyonun, yoğun bakım ünitesindeki rolünü, gerekliliğini ve sağladığı faydanın vurgulanması amaçlamaktayız.

ANAHTAR KELİMELER: Palyatif bakım, rehabilitasyon, yoğun bakım ünitesi, egzersiz, palyatif bakım takımı

ABSTRACT

The number of individuals with serious or life-threatening diseases is gradually increasing because of the aging population and technologies that enable longer life expectancy. Palliative care programs are developed in order to improve quality of life during the course of these diseases. In palliative care, service is provided by experienced and educated healthcare personnel and a team of volunteers, and in hospital, first line treatment environment, house or hospices, depending on the conditions of each country. Intensive care units (ICUs) are unique environments where patients with critical condition receive rapid and aggressive life-saving interventions. In developed countries physical therapy and rehabilitation programs are integrated parts of intensive care units in many hospitals. Considering patient needs and complications in intensive care units, the importance of improving patients' quality of life emerges as an issue to be kept in mind. Physical therapy and rehabilitation programs aim to maintain optimum respiratory and circulatory function in these patients, prevent muscular atrophy, muscular problems and joint contractures, control pain, optimize functioning and independency, educate patients and enable the participation of the caregiver. Physical therapy and rehabilitation specialists, physiotherapists and occupational therapies work together in a multidisciplinary palliative care team in order to increase patients' mobility, independency and quality of life. Unfortunately it is observed that physical therapy and rehabilitation programs are largely ignored during the distribution of palliative care resources and that necessary transfer of funds is not provided. In this study we aim to highlight the role, necessity and benefit of rehabilitation, one of the important components of palliative care, in intensive care units.

KEYWORDS: Palliative care, rehabilitation, intensive care unit, exercise, palliative care team

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INTRODUCTION

Palliative Interventions in Intensive Care

The number of individuals with serious or life threatening diseases is gradually increasing because of the aging population and technologies that enable longer life expectancy. Palliative care programs are developed in order to improve quality of life during the course of these diseases (1).

In palliative care, service is provided by experienced and educated healthcare personnel and a team of volunteers, and in hospital, first line treatment environment, house or hospices, depending on the conditions of each country (2). Intensive care units (ICUs) are unique environments where patients with critical condition receive rapid and aggressive life-saving interventions (3). Patients in these units are mostly under high risk of death and require both life support and intense monitorization. If they survive, they may be discharged with sequels that may affect their quality of life (4). Thus, for many patients palliative care is considered an important component independent from prognosis or treatment purpose (5,6).

In previously conducted studies, the most common physical symptoms in patients in the ICU have been reported as pain, thirst and dyspnea (7). Palliative care aims to minimize the discomfort caused by these symptoms, reduce sequels, improve the quality of life of patients and caregivers, pay attention to the rational management of cost –efficiency in patient care, and ensure the healthy course of the process in case death is accepted as a reality. In this respect, evidence-based strategies for the assessment and treatment of symptoms should not only support patient comfort in the ICU but also help to relieve stress response while providing potential physiological benefits (7).

A consensus group formed by the Robert Johnson Foundation, in order to establish standardization for palliative care in the ICU, determined the areas of patient- and family-centered decision making, communication, continuity of care, providing emotional and social support for patients and families, symptom treatment and comfort care, providing religious support, and emotional and organization support for ICU clinicians (8). However, approaches related to physical therapy and rehabilitation during symptom treatment is inadequate in clinical practice.

In a meta-analysis which evaluated the effects of palliative care interventions in the ICU, it was reported that palliative care interventions decreased the duration of hospitalization and stay in the ICU, while they did not have any effect on mortality or family satisfaction (9). It was also reported that the number of laboratory and radiological tests asked to be performed was lower in patients referred to palliative care teams in the ICUs; palliative care consultation had a positive effect on symptom determination and treatment, and more symptoms were determined compared to referred ones; and these programs may help to fill the gaps of conventional care and to detect the symptoms that may not always be detected by physical examination (10,11).

Despite all favorable effects, there are several problems in providing effective palliative care in the ICUs. According to a study conducted in 2003, these barriers include insufficient communication between healthcare professionals concerning end-of-life problems, insufficient participation of patients in discussions about their treatment, unrealistic expectations of patients and families about disease prognosis or the efficacy of ICU treatment, and lack of advance directive of patients (12). In a study conducted with fifth-year students of medicine, it was also observed that these students did not have sufficient knowledge about palliative care, the curriculum was not comprehensive enough on this subject, and healthcare professionals did not pay enough attention to this subject (13). All these study results should lead us to prepare efficient treatment programs in clinical practice and to develop undergraduate and postgraduate programs on this subject.

Palliative Physical Therapy and Rehabilitation in Intensive Care
General Effects

Physical therapy and rehabilitation programs are among supportive treatment applications used to remove functional disabilities, and in developed countries these programs are integrated parts of ICUs at many hospitals (14,15). Functional impairment is a commonly observed problem in patients in ICUs, and is associated with disease progression, decondition, treatment complications, nutrition deficiency, neurological and musculoskeletal problems and comorbidities (16-18). Functional condition also affects the number of referrals to physical therapy (19). Physical therapy and rehabilitation programs aim to maintain optimum respiratory and circulatory function in these patients, to prevent muscular atrophy, muscular problems and joint contractures, to control pain, to optimize function and independency, to educate patients and to enable the participation of the caregiver.

Standard physical therapy and rehabilitation programs in the ICU consist of mobilization, muscle training and respiration physiotherapy approaches (20). Physical therapy and rehabilitation specialists, physiotherapists and occupational therapies work together in a multidisciplinary palliative care team in order to increase patients' mobility, independency and quality of life (21). Montagnini et al. (19) report that physical therapy and rehabilitation programs in hospital-based palliative care units help to treat the most common functional disabilities such as decondition, pain, imbalance and weakness. Functional tasks evaluated by physiotherapists are reported as bed mobility, turning (right and left side lying from supine position), positioning to prevent pressure sores, bridging, rising from supine to sitting position, changing from sitting to supine position, transfers, ambulation or walking training (22). Occupational therapists evaluate and provide treatment programs in functional areas like daily life activities, work tasks, self esteem, occupation, recreation, adaptive equipment use, and discharge planning (23).

Nevertheless, due to the intensity of patients in ICU units and of their problems, important issues may be overlooked in the practice of physical therapy and rehabilitation programs. In respect to the efficient treatment of patients, rate of initiation of physical therapy and rehabilitation programs and rate of treatment benefit may be increased by forming a bedside checklist (24).

Early physical activity, exercise and rehabilitation of patients in the ICU have recently been an evidence-based focal point for interdisciplinary ICU teams (25). Despite this evidence, rehabilitation provided in the ICU is generally inadequate (26-28). If rehabilitation can be integrated into palliative care in early stage, it can increase patient's maximum functionality and quality of life (29). Especially the increased physical activity and the ability of participating in daily activities may relieve patient's symptoms and have a dramatic effect on the level of perceived independency (30,31).

Rehabilitation and palliative care are very similar in many aspects. Both applications use a multidisciplinary team that focus specifically on each individual's needs (32). Both aim to increase quality of life, not to eliminate or cure the target disease (33). Rehabilitation help to maintain and improve functionality even in the advanced stage of disease and to slow down functional remission through applications such as strengthening, ambulation, range of motion, improving daily life activities and pain therapy. In both rehabilitation and palliative care, the importance of patient- and family-centered care is emphasized, and the focus is on achieving improvement through a multidisciplinary approach (34). Rehabilitation starts with the determination of the patient's level of disability and previous functionality, and it is individualized for each patient (23).

Some studies define mobilization as the first step of rehabilitation (35), while others adopt easy effortless physical activities (sitting in bed, physical activities in bed, passive joint movement, passive bicycle movement, neuromuscular electric stimulation-NMES) as

the first approach (36,37). Therapeutic exercises include passive movement, assisted active movement, assisted movements with and without resistance (38). Step-by-step flow charts have been prepared for gradually increasing physical activity and mobilization in critical patients. These steps are directed by clinical assessments that include cardiorespiratory and neurological state, cooperation level, pain, delirium, sedation, presence of catheter and other devices (mechanical ventilation, dialysis, cardiac assistance and extracorporal membrane oxygenation) and functional state (muscle strength, joint mobility, obesity, or surgery-related conditions) (36,39-41).

It has been reported that quality of life can be significantly improved by placing a call button beside patient beds in critical care units and thus notifying the staff about patients' needs. In patients who are medically more stable, it may be appropriate and beneficial to transfer the patient from bed to a chair so that she/he can socialize with family members (21). In a study conducted by Yoshioka with 239 hospice patients, a 27% improvement was observed with rehabilitation in mobility scores measured by Barthel mobility index (42). On the other hand, the fact that functional state is correlated with the result of underlying disease should not be overlooked.

Exercise and mobilization in ICUs should be applied by taking the patient's pathology and general condition into consideration and under strict monitorization (43). It is very important that cooperation level and cardiorespiratory reserve of patients are accurately assessed, and factors that prevent early mobilization are carefully followed (44). For patients in a state of deep sedation, passive techniques such as passive joint mobilization, positioning, passive bicycle movement and NMES may be appropriate (45,46). Specific measurements of functions like muscle strength and joint mobility are also factors to be considered before initiating early activities (25). In several studies it has been shown that functional assessment tools has been successfully used in monitoring the progression of patients (25). Barthel (47), functional independence measure (48), and

Table 1: Criteria for safety in palliative care[50]

Red Flags	• Heart rate (Recent myocardial ischemia, Heart rate <40 and >130 beats/min) • Blood pressure (Mean Arterial Pressure (MAP) < 60 mmHg and > 110 mmHg) • Oxygen Saturation (≤90%) • Parameters of Ventilation • Respiratory Frequency (> 40 breath/min) • Level of consciousness of patient (Richmond Agitation Sedation Scale score: -4, -5, 3, 4 • High inotrope doses • Temperature (≥ 38.5°C, < 36°C)
Relative contra-indications	• Clinical View (Decreased level of awareness/consciousness, Sweating, Abnormal face color, Pain and fatigue) • Unstable fractures • Presence of lines that make mobilization unsafe • Intra Cranial Pressure ≥ 20 cmH2O

KATZ (49) are frequently used tools and were found to be valid in non- ICU population.

A recent review has suggested safety criteria regarding physiotherapy practices in intensive care units (**Table 1**) (50). According to authors; every patient should be screened for the presence of red flags (contra-indications) and relative contra-indications to consider (potential) risks and benefits before and during every physiotherapy treatment session (50).

Respiratory System

An important part of the treatment given to ICU patients is solving respiratory problems or supporting respiratory functions (51). American Thoracic Society has listed 4 important components for pulmonary rehabilitation: exercise therapy (upper limb resistance, lower limb resistance, strengthening and respiratory muscle exercises), training (breathing strategies, energy saving and work facilitation, end-of-life training), psychological and behavioral interventions (coping strategies, stress management) and outcome assessment (**Table 2**) (38). Ciesla explains the methods used in thoracic physiotherapy and rehabilitation programs in the ICU as postural drainage, percussion, vibration, respiratory exercises, cough stimulation techniques, extremity mobilization, positioning and respiratory aspiration. The aim here is to prevent pulmonary

Table 2: Pulmonary rehabilitation components[38]

Exercise therapy	• Upper limb resistance • Lower limb resistance • Strengthening • Respiratory muscle exercises
Training	• Breathing strategies • Energy saving and work facilitation • End-of-life training
Psychological and behavioral interventions	• Coping strategies • Stress management
Outcome assessment	1

complications, increase functional capacity, avoid the negative effects of immobility and accelerate discharge from ICU by ensuring mobilization (53). Failure in disconnecting mechanical ventilation in patients is an important clinical finding that prolong the duration of stay in the ICU in a small portion of ventilated patients and causes disproportionate use of resources (25). In patients with inspiratory muscle weakness, muscle strength training can facilitate the removal of mechanical ventilation. In a recently conducted randomized study, inspiratory muscle training at moderate level and sham therapy were compared and a statistical significance was observed in the muscle training group (54). Cader et al. (55) observed improvement in maximal inspiratory pressure and a decrease in the duration of leaving mechanical ventilation after 30% maximal inspiratory pressure sessions applied for 5 minutes.

Pain

Pain management is an essential part of medical care in critical patients (56). Most ICU patients experience moderate to severe pain. In a study conducted with ICU patients who underwent cardiac surgery, pain was detected at a rate of 77%, 64% of which was moderate and severe (57). In this respect, pain treatment should be the primary therapeutic target especially in the final stage of life and should be included in the comprehensive palliative care spectrum (3). Nonsteroidals, breakthrough medications, spinal and other adjuvants, opioid trials, chemotherapeutic agents, external-beam radiation and radionuclides, alternative medicine, and bisphosphonates (for metastatic bone pain or painful complications, and most studies of breast cancer and also some studies including myeloma) suggested for these patients (58).

Physical treatment modalities used to treat pain are; massage, hot, cold, ultrasound, transcutaneous electrical nerve stimulation, diathermy, manual lymphatic drainage and soft tissue mobilization (59). The application of transcutaneous electrical nerve stimulation gives favorable results especially in post-op patients (20).

CONCLUSION

ICUs are unique environments where patients with critical condition receive rapid and aggressive life-saving interventions. For many patients palliative care is considered an important component independent from prognosis or treatment purpose. Regardless of diagnosis, the objective in all palliative care patients is to maintain their quality of life and to maximize their functions according to the priorities of patients and their families. In order to achieve this objective, rehabilitation should be a part of palliative care.

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