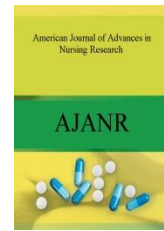




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ASSESSMENT OF REHABILITATION PROGRAM AT INTENSIVE CARE UNIT IN CLINICAL HOSPITAL-BITOLA

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ABSTRACT

Individuals with critical illness experience dysfunction of many body systems including the neuromuscular system. Neuromuscular impairments result in a syndrome referred to as ICU-acquired weakness which may lead to difficulty with activities and participation. Involving early rehabilitation program at ICU have few benefits for the patient and for the hospital. It is cheaper because have less complications and treatment of them is more expensive than the first illness at all. The purposes of our study was to assess the quality of rehabilitation program at our Clinical hospital in ICU. Material and method: The 20 physiotherapist from hospital were asking to describe their experience in rehabilitation at ICU. The score was made like percents of positive activities at the unit from the maximum score. Results: At our hospital are using 59% of proposals for treatment of patients at ICU. The most common problems in rehabilitation process were missing of orthosis, and other equipment, missing of safety by working, and high sedation of patients. Discussion: Rehabilitation in ICU is consisting of active, passive exercises, exercises by patient with mechanical ventilation, mobilization in bed and verticalisation of patient. For realization of management plan for rehabilitation is need to have special equipment and high standards for unit. Conclusion: Rehabilitation at ICU is safety, cheaper and possible with better collaboration of medical staff at ICU.

INTRODUCTION

An intensive care unit (ICU), also known as a critical care unit (CCU), intensive therapy unit or intensive treatment unit (ITU) is a special department of a hospital or health care facility that provides intensive care medicine.

Intensive Care Units care to patients with the most severe and life-threatening illnesses and injuries; that require constant, close monitoring and support from specialist equipment and medication in order to maintain normal body functions.

They are staffed by highly trained doctors and critical care nurses who specialize in caring for seriously ill patients. Common conditions that are treated within ICU's include those such as trauma, multiple organ failure and sepsis [1].

Patients may be transferred directly to an Intensive Care Unit from an emergency department if required, or from a ward if they rapidly deteriorate; or immediately after surgery if the surgery is majorly invasive and the patient is at high risk of complications [2,3]. Patients who are on prolonged ventilator support in critical care unit present wide variety of complications, which range from reduction in oxygen uptake to various musculoskeletal impairments. Early mobilization and rehabilitation are encouraged to manage these

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complications effectively. Use of tilt table to motivate early mobilization in the intensive care unit for ventilator practices is not a usual practice. However, new technique has attracted involvements of clinicians and therapists for its therapeutic benefits to the patient [4].

To effectively manage critically ill patients, mechanical ventilation, vasopressive agents, and hemodialysis are frequently utilized. These interventions may limit patients' mobility and therefore their function. Impairments of the neuromuscular system can occur resulting in an under-recognized syndrome referred to as ICU-acquired weakness[5,6]. Early detection and physical intervention may reduce the long- term consequences of ICU-acquired weakness with respect to activities and participation[7,8]. In survivors of critical illness, impairments of body systems other than the neuromuscular system typically improve prior to hospital discharge and approach predicted values by 6 months.[9,10] In contrast, neuromuscular recovery takes longer and may be incomplete, even up to five years after hospitalization. [11-15]. Therefore, therapies are needed that can reduce the functional impact of neuromuscular morbidity [16]. Physical interventions may be important in two ways: first through remediation of neuromuscular impairments during the recovery process and second, by reducing sequelae associated with deconditioning.

The purposes of this Study was to 1) describe safety and feasibility of participation in physical therapy intervention by physiotherapist at hospital, and 2) characterize the intervention procedures with sufficient detail that clinicians can implement a similar strategy by protocol.

MATERIAL AND METHOD

Twenty physiotherapist participate in this study. They are working at hospital, and were interviewed with questionar to assess their activities and knowledge about rehabilitation at ICU. The questionair is consisting of folow 8 questions about applying interventions, and 4 questions for most frequent problems during the work.

The assessment of rehabilitation program was scoring by percents of positive activities to maximum points of 300.

1. Have you treated patient at ICU before?
2. Have you treated patient on mechanical ventilation before?
3. Have you done mobilization of patient. If your answer is Yes, What you have done.
A) active exercises, B) pasive exercises,
C) breading exercises, D) verticalization.
4. Have you used some Physical procedures before? Desribe which.
5. Have you used some caind of stimulation before
a)music therapy b)light stimulation c)electrical stimulation d)massage.
6. Have you menage rehabilitation by exactly protocol?
7. Have you some sertification for Reha et ICU?

The significant of answers and score was made with difference of proprtion and $p < 0.05$.

RESULTS

The frequentation of pattients treated at ICU in Clinical hospital Bitola at lest three years is showing in table 1. They were analyzed by hospital days at ICU and applaed mechanical ventilation and poly trauma.

Table 1. Frequentation of treated patient at ICU

Year.	Total	Number of hospital days	Patient with polytrauma	On mechanical ventilation
2010	367	1506	12	39
2011	331	1242	17	48
2012	313	1243	13	41
Total	1011	3991	42	128
%	-	-	4	13

We can see that 4-13% of patients were very critical, and average of days on ICU was 3.9days.

Assessments of physiotherapist activities on ICU are showing in table 2.

Table 2. Assessment of rehabilitation at ICU

Question	Yes	No
1	20	
2	20	
3	10	10
a) Active ex.	20	
b) Passive ex.	20	
c) Breathing ex.	20	
d) Vericalization	5	15



4	4	16
Electrical stimulation		
5		18
Music therapy		
Massage	2	10
Light stimulation	10	20
Electrical stimulation		20
6	-	20
7	2	18
8	20	
Total score	153	147
% from max.300 points	51%	49%
Significance	T=0.34 p>0.05	-

The biggest problems during the work were sedation of patients (70%), short program (100%), missing of orthoses (65%) and not safety working place 70%. The program of rehabilitation has no significant impact on ICU, $p>0.05$.

DISCUSSION

This study describes safety and feasibility of PT intervention for patients at ICU. A total of 51% treatment activities were implemented without any adverse events. This finding is similar to reports of other investigators[8,9], suggesting that the safety criteria implemented in this study and by others are appropriate. The 4-13% patients were critical and usually we are sending them to capital city Skopje if it is necessary.

The PT interventions from our study were similar to those in a recent report of PT practice in the US during acute care.

The respiratory interventions with clearance and management of secretions, pacing of respiratory rate, were the problem of safety by work place by 70% from therapist. The breathing exercises were used by all therapist in their practice.

Treatments of patients at ICU is starting with participants in the supine position, and progressed to sitting and then to standing. In our department we have no special equipment by standards for ICU like in other consulted investigations [8,9,15]. However, we use technic and education for treatment in condition what we have. Denehy and colleagues [16,17] developed such a protocol in which patients perform the most demanding

task firsts (e.g., marching in place). As time allowed, they proceeded to exercises that required less effort (e.g., supine activities). There are merits to both approaches and there is insufficient evidence to determine which is more efficacious. We have involved the special program for rehabilitation at ICU in year 2014 in our Health System like a part for Treatment of patient at ICU, standard and proposals.

Rehabilitation at ICU, is special subject and we trained students in special part of education, in specialisation for rehabilitation in surgery.

CONCLUSION

Treatment of patient at ICU, need high technical support, high standards and different kind of medical staff experts. Rehabilitation at ICU is new in our practice, but it is possible and safe. Special education with certification can increase quality of treatment with economic benefits for Health system and patients.

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CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest.

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