

The previous results of use of ethnic bathing technology in physical rehabilitation at consequences of injuries of the lower extremities

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Purpose: to define methodical bases and possibilities of application of the modified Arab (as east) ethnic bathing procedure in complex physical rehabilitation of victims with injuries of the lower extremities at the polyclinic stage.

Material & Methods: analysis of urgent references, method of collecting empirical expert estimates.

Results: possibility of effective application of nonconventional methods of non-drug therapy, in particular, ethnic bathing technologies is defined on the example of the modified Arab (as east) bathing procedure, in complex physical rehabilitation of victims with injuries of the lower extremities at the polyclinic stage.

Conclusions: methodical opportunities of application of the modified by us techniques of the Arab (as east) ethnic bathing procedure in comprehensive programs of physical and psychological rehabilitation are confirmed by results of the analysis of literature, test procedures and number of expert estimates.

Keywords: physical rehabilitation, trauma, east bath, ethnic bathing procedure.

Introduction

The continuous increase in frequency and volumes of armed conflicts, technogenetics catastrophes and natural disasters leads to the progressing increase of number of wounded, patients and victims. Mine-explosive wounds in armed conflicts entered the ten leading causes of death in the world and continue to increase at the beginning of the XXI century [1; 2].

The problem of the fastest restoration of combat preparedness and working ability of wounded and injured military and civilians is urgent decades in this regard for health service of the state of Lebanon. Ukraine has faced the similar problem quite recently on a substantial scale, but the relevance of the subject, unfortunately, constantly increases.

The complex of the held events at mine-explosive and gunshot wounds and injuries unites the concept «medical rehabilitation» [2; 3]. Physical rehabilitation of wounded and victims is the integral link of medical support of staff of armed forces and civilians of any country and strategic source of completion of sanitary military and social-labor losses in modern armed conflicts.

The search and foundation of active and effective ways of the fastest restoration of combat preparedness of the military personnel and civil efficiency of the population with application of new means and methods of physical rehabilitation is the urgent problem of any modern state which is involved in the military conflict.

The carried-out analysis of special literature allowed us to find out that the post-traumatic syndromes and pathological states arising after a while after extract from the patient's

hospital with consequences of mine-explosive trauma and its transition to the polyclinic (sanatorium) stage of treatment are reflected in domestic literature sometimes selectively and obviously not enough. The rich orthopedic and neurologic symptomatology is characteristic of post-traumatic syndromes and pathological states after mine-explosive trauma long time, vegetative-trophic violations are shown. Such patients are under observation of neurologists, orthopedists and surgeons long time (N. V. Kornilov, 2006) [4].

Number of authors (N. M. Valeyev, 2004, V. M. Bogolyubov, 2006) [5; 6] consider that the post-traumatic period is clinically characterized by restoration of anatomic integrity of bone (the process of consolidation of fractured fragments comes to the end, wound is epithelized). At the same time, though restoration of anatomic integrity of bone occurred, obvious dysfunction of extremity is observed (muscular atrophy, rigidity in joints, cicatricial contractures, etc.). This period can proceed not only before the formation of secondary bone callosity, but also at the wrong treatment or its absence, drag on for years.

The established stages of treatment and actions of physical rehabilitation of victims in work of the rehabilitation center decide on consequences of mine-explosive trauma by the extent of restoration of functions and provide use at the polyclinic stage of generally blandly-training and training motive modes that allows speaking about rather significant exercise stresses on cardiovascular system and musculoskeletal system. It, in turn, opens opportunities for application as means of physical rehabilitation of hydro-bathing procedures, and both traditional means of hyper-thermal therapy, and elements of ethnic bathing procedures.

When using the traditional methods of treatment, which are included in individual rehabilitation programs of victims with consequences of mine-explosive trauma, authors of techniques recommend options of the combined action of two or three methods for one session, for example, of combination of the hydro-procedure and manual underwater hydro-massage that, according to them, increases efficiency of physical rehabilitation (I. Ye. Slepnychuk, 1995) [7].

Thus, we have found out that the application problem in rehabilitation of nonconventional means and methods in classical medicine is insufficiently opened in literature and demands further substantial researches in the course of the researches of the current state of question of physical rehabilitation of victims with mine-explosive trauma at the polyclinic stage. Application of ethnic hydro-bathing procedures and ethnic systems of massage in physical rehabilitation at consequences of mine-explosive trauma is almost not investigated. The development and scientific foundation of application of similar methods in physical rehabilitation has not only the medical, but also the social value, which is beyond any one narrow medical specialty (traumatology, neurology, orthopedics, rehabilitation and so on).

Communication of the research with scientific programs, plans and subjects

The researches were conducted within the dissertation work according to the direction of the research work of the chair of physical rehabilitation and recreation of KhSAPC in the section of physical rehabilitation in traumatology, neurology and orthopedics.

The purpose of the research

To define methodical bases and possibilities of application of the modified Arab (as east) ethnic bathing procedure in complex physical rehabilitation of victims with mine-explosive injury of the lower extremities at the polyclinic stage.

Material and Methods of the research

Methodical features of use of ethnic bathing technologies in complex physical rehabilitation of patients with consequences of mine-explosive trauma at the polyclinic stage on the example of ethnic Arab (as east) bathing procedure became clear on the basis of the analysis of modern references, method of collecting expert estimates, number of test procedures.

Results of the research and their discussion

The recommended by authors tested traditional and nonconventional methods of medical rehabilitation, which are used in programs of physical rehabilitation of victims of surgical and therapeutic profile with mine-explosive trauma at the polyclinic stage of treatment, are often not allocated in literature and are discussed fragmentary (L. F. Vasilyeva, 2002., V. G. Zilov, 2003) [8; 9].

Special programs of physical rehabilitation at injuries of the lower extremities are developed in large number, but often with insufficient and selective application of nonconventional methods of physical rehabilitation which role at stages of medical rehabilitation is estimated obviously insufficiently.

Meanwhile, the number of works of experts in which there is an attempt to use nonconventional methods of non-drug therapy in physical rehabilitation (reflexotherapy, phytotherapy, ethnic types of massage and hydro-bathing technologies, kinesiotherapy) significantly increases in the last decades (V. G. Vogralik, 2001; W. G. Sutherland, 2000) [10; 11].

The objective estimation of rational share of application of nonconventional means and methods in rehabilitation programs of victims' treats with traumatologic defeats certainly belongs to number of the most important problems of modern physical rehabilitation and recovery medicine. The system of actions for the combined application of nonconventional methods of treatment in the system of physical rehabilitation of victims with consequences of mine-explosive trauma in the conditions of the versatile rehabilitation center at the polyclinic stage, certainly, can significantly increase efficiency of recovery of health of victims and reduce terms of their polyclinic treatment.

We have defined bases of formation of techniques and methods of operating control of condition of the patient at application of the modified technique of the ethnic bathing procedure on the basis of Arab (version east) on the basis of studying of references of authors (I. E. Slepnychuk, 1995, V. N. Pravosudov, 1979; A. N. Azhayev, 1986; I. N. Martynova, 1998) [7; 12; 13; 14] on use problem in physical rehabilitation of persons with fractures of bones of extremities of traditional and ethnic hydro-bathing procedures, mechanisms of medical action of hydro-bathing procedures and detailed consideration of questions of etiology, pathogenesis, clinical and phased treatment of mine-explosive trauma.

We applied the traditional for the state of Lebanon and extended to its territories Arab bath of the mixed type with such constructive and temperature and moist characteristics:

– placement of bath contained five bathing niches with different temperature from +35 C° to +65 C°. Temperature in different rooms is constant;

– temperature of stone bench for massage +35–40 C°. Relative humidity is 30–40%, absolute humidity is 30–60 g·m⁻³. Maximum for this room is at floor, minimum is at ceiling, where there is condensation of water vapor. Temperature drop at floor and ceiling is insignificant – 5–10 C°;

– ventilation is influx-and-extract, natural. Speed of the movement of air is minimum. It is more oxygen, than in other baths, at the expense of large volumes of rooms.

Unlike stereotypic and non-traditional for the majority of other countries of use of bath on type Hamam, where the high content of water vapor in air and humidity to 90% is applied, we used the classical Arab bath on east type with “dry” warming up of the room for soaring and humidity to 40%, without turning on of steam generators. It allowed to lower considerably load of cardiovascular and respiratory systems of patients and gave the chance of more frequent and rhythmical use of this bathing procedure in the course of physical rehabilitation.

The modified by us soaring technique in east bath had some differences from traditional, in particular:

– time of the procedure is limited for 90–100 minutes, unlike

the four-hour procedure, traditional for the Arab countries;
 – the number of procedures in one or two weeks of the procedure (Mo., Th.), unlike the adopted one-time procedure on Friday;

– control of condition of the patient and extent of influence of each procedure which was expressed in control by the doctor of arterial pressure and heart rate before and after the procedure, and also introspection by the patient of physical state;

–warm shower and air cooling, unlike traditional contrast douche of body several times in turn was applied by hot and cold water at the end of the procedure;

–the traditional peeling by the mitten Kese and soap massage were not carried out. The modified by us procedure of east massage with emphasis on backbone and the injured extremity was carried out.

Volumes of temperature influence, pause for rest and cooling, special starting positions at warming up in bathing rooms and the modified technique of east massage were tested by us empirically, by several consecutive procedures of soaring and massage with participation of the voluntary group of experts from 6 people, workers of bathing complex and the staff of the medical center having vocational education and long-term experience of use of bathing procedures of the Arab bath and massage. Testing of the modified soaring technique in the Arab bath was held under control of the doctor of the medical center and subsequently has been analyzed by means of the method of expert evaluations.

Results of medical control of carrying out the modified Arab (as east) ethnic bathing procedure confirmed the predicted results on change of physiological condition of examinees in limits of physiological norm for the corresponding age that allows to speak about the physiological safety of use the modified Arab (as east) ethnic bathing procedure at application at the polyclinic stage (tab. 1).

So, all six experts have expressed opinion that application of the modified soaring technique in east bath allows to reach the necessary extent of warming up in much more short time of the procedure, having reduced thus load of cardiovascular and respiratory systems. Four experts have expressed opinion that application of soaring up to 90–100 minutes in the modified technique can be effectively used more often than traditional application of the bathing procedure, one time a week, duration till four hours. The combined offered by us

technique of soaring and massage in east bath for rehabilitation of victims with consequences of mine-explosive injury of the lower extremities at the polyclinic stage according to all six experts, has number of advantages before application of the traditional procedure of the Arab bath, such as: providing necessary physiological indicators of condition of organism of the taking a steam bath for much smaller time of the procedure, easier shipping of the procedure, smaller indicators of heart rate and arterial pressure at the end of the procedure, more fast and deep warming up of tissues with multiple increase in capillary blood circulation of tissues of the injured extremities in direct contact with the heated surface of stone bench, possibility of expeditious change of the thermal mode directly in the course of the procedure, ease of breath, shipping of high temperature in the procedure, speed of warming up of tissues, possibility of safe application several times a week, possibility of local warming up of the injured site, load of procedure for CVS and respiratory systems (tab. 2).

Results of research showed possibility of effective dispensing and rather informative control of extent of influence, and also allowed to assume the possibility of effective application of the modified by us Arab (as east) ethnic bathing procedure in complex physical rehabilitation of victims with mine-explosive injury of the lower extremities at the polyclinic stage.

Everything told leads to conclusions about possibility of creation, clinical approbation and evidential description of comprehensive programs of physical rehabilitation at the consequences of mine-explosive trauma including, besides the MPC traditional complexes, cycles of procedures of ethnic bathing procedures and elements of east massage at the polyclinic stage of treatment of the lower extremities which were injured with mine-explosive trauma.

Conclusions

1. The carried-out analysis of special literature available to us showed that the application of nonconventional methods of physical rehabilitation, which is used in programs of rehabilitation of victims with mine-explosive trauma at the polyclinic stage of treatment, is discussed rather fragmentary, at the same time the Arab (as east) ethnic bathing procedure in complex physical rehabilitation on use, we didn't find works.

2. Such nonconventional methods of physical rehabilitation as hydro-bathing technologies, and the attention is practically not paid to use of ethnic bathing procedures in the medical purposes in traumatology are selectively described non-drug

Table 1
Data of the preliminary and repeated research of dynamics of functional indicators when testing by experts of the modified Arab ethnic bathing procedure

№	Examinees (age)	AP, mm. mer. col		HR, bpm ⁻¹		BR, number in min	
		Before the procedure	After the procedure	Before the procedure	After the procedure	Before the procedure	After the procedure
1	Ali. (43)	126/80	128/85	72	76	15	18
2	Ta. (38)	123/77	125/80	70	74	16	18
3	Me. (46)	130/85	132/88	75	78	16	20
4	Ra. (32)	123/74	126/78	65	64	14	16
5	Alz.(36)	125/77	126/78	68	72	16	17
6	Mukh.(42)	128/80	130/86	74	76	15	18

means of physical rehabilitation of patients with consequences of mine-explosive trauma in the conditions of the versatile rehabilitation center.

3. The soaring technique modified by us in Arab (as east) bath has number of differences from the traditional procedure which create possibility of the directed efficiency of this bathing procedure, operating control of condition of patients and dispensing of extent of influence of the procedure in complex physical rehabilitation of victims with mine-explosive injury of the lower extremities at the polyclinic stage.

4. Soaring techniques in the ethnic Arab bath were approved by us empirically, by several consecutive procedures of soaring with participation of the voluntary group of experts from 6 people, workers of bathing complex and the staff of the medical center having long-term experience of use of bathing procedures of the Arab bath and massage. The researches were conducted under control of the doctor of the medical center and were analyzed by means of method of expert evalua-

tions.

5. Methodical opportunities of application of the technique modified by us Arab (as east) ethnic bathing procedure for effective use in comprehensive programs of physical and psychological rehabilitation of victims with mine-explosive trauma at the polyclinic stage are confirmed by results of medical control of holding test procedures and results of expert estimates on such criteria as: ease of breath, shipping of high temperature in the procedure, speed of warming up of tissues, possibility of safe application several times a week, possibility of local warming up of the injured site, load of procedure for CVS and respiratory systems.

Prospects of the subsequent researches. The data obtained in this research are used in scientifically-practical work within the dissertation researches which purpose is creation, approbation and introduction in practice of the effective comprehensive program of physical rehabilitation for victims with mine-explosive injury of the lower extremities at the polyclinic stage.

Table 2
Results of expert assessment of influence of bathing procedures: the ethnic and modified procedure of the Arab bath (in points)

№	Test	Ali.		Ta.		Me.		Ra.		Alz.		Mukh.		Average	
		Ethnic	Modified	Ethnic	Modified	Ethnic	Modified	Ethnic	Modified	Ethnic	Modified	Ethnic	Modified	Ethnic	Modified
1	Ease of breath (oxygen level in steam room air for the whole procedure)	3	5	2	4	2	4	4	5	3	4	3	5	2,8	4,5
2	Shipping of high temperature in the procedure	4	5	5	5	4	5	3	4	5	5	4	5	4,2	4,8
3	Speed of warming up of tissues	5	5	3	4	4	4	3	5	4	5	3	5	3,7	4,7
4	Possibility of safe application several times in week.	0	5	2	5	0	4	2	5	1	4	0	5	0,8	4,6
5	Possibility of local warming up of the injured site	3	5	2	5	3	4	3	5	3	5	2	5	2,7	4,8
6	Procedure of load for CVS and respiratory systems	3	2	4	3	3	1	3	3	2	3	2	4	2,8	2,7

Note. 1 – minimum quantity of points, 5 – maximum.

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