

ГРЯЗЕЛЕЧЕНИЕ В РЕАБИЛИТАЦИИ ПАЦИЕНТОВ С ШЕЙНОЙ ДОРСОПАТИЕЙ

© Е.В. Филатова¹, Х.М. Малаев², О.Е. Коновалов³

ФГБУ ДПО Центральная государственная медицинская академия
Управления делами Президента Российской Федерации,
Москва, Россия (1)
Республиканская больница восстановительного лечения,
Махачкала, Россия (2)
ФГАОУ ВО Российский университет дружбы народов,
Москва, Россия (3)

Цель. Выявление специфичности реакции мужского и женского организма на проведение процедур гальваногрязи при цервикалгии. **Материалы и методы.** Обследовано 48 пациентов (23 мужчины, 25 женщин), которые проходили курс реабилитации на базе Республиканской больницы восстановительного лечения г. Махачкала с диагнозом: цервикалгия. Больные получали медикаментозную терапию и лечебный массаж. На фоне стандартной терапии проводилось грязелечение в виде гальваногрязи. Эффективность и безопасность процедуры оценивались по визуальной аналоговой шкале (ВАШ), показателям артериального давления и частоты сердечных сокращений до и после процедуры, значениям вегетативного индекса Кердо, индексу массы тела, подвижности шейного отдела позвоночника, психоэмоциональному состоянию по тесту САН. **Результаты.** Анализ локализации и характеристики болевого синдрома выявил преобладание поражения верхних шейных отделов (у женщин – 62,0%, у мужчин 40,0%), и статистически более часто встречаемые у женщин цервикокраниалгии (22,0% в сравнении с 8,0% у мужчин). Головные боли, связанные с болями в шее, беспокоили женщин достоверно чаще, чем мужчин (48,0% и 10,0% соответственно). Зарегистрирована значимая разница в частоте жалоб на иррадиацию болей в верхние конечности (в 20,0% женщин против 10,0% у мужчин). Интенсивность болевого синдрома по шкале ВАШ в сравниваемых группах до реабилитации достоверно различалась ($5,25 \pm 1,64$ баллов у мужчин и $5,62 \pm 1,98$ баллов у женщин, $p < 0,05$); после завершения курса лечения показатели ВАШ снизились в обеих группах: у мужчин до $1,62 \pm 0,83$ баллов ($p < 0,05$), у женщин – до $2,25 \pm 1,07$ баллов ($p < 0,05$), при этом между группами значимых различий выявлено не было. У женщин с цервикалгиями расстояние между верхним и нижним шейным позвонком в среднем составило $14,0 \pm 0,1$ см, прибавка при наклоне составила до лечения $2,43 \pm 0,75$ см, после – $2,75 \pm 0,11$ см, что свидетельствует о тенденции к нормализации состояния мышечной ткани, но сохранении спастического компонента. **Заключение.** Грязелечение в комплексной реабилитации пациентов положительно влияет на восстановление двигательной активности шейного позвоночного сегмента.

Ключевые слова: реабилитация, цервикалгия, грязелечение.



MUD THERAPY IN THE REHABILITATION OF PATIENTS WITH CERVICAL DORSOPATHY

Ye.V. Filatova¹, M.N. Malayev², O.E. Konovalov³

Central State Medical Academy of Department of Presidential Affairs
of the Russian Federation, Moscow, Russia (1)

Republican Hospital of Rehabilitation, Makhachskala,
Republic of Dagestan, Russia (2)

Russian Peoples Friendship University, Moscow, Russia (3)

Aim. To identify specificity of reaction of a male and female organism to galvanic mud application procedures in cervicgia. **Materials and Methods.** 48 Patients (23 men and 25 women) with the diagnosis of cervicgia who took a course of rehabilitation treatment in Republican Hospital of Rehabilitation Treatment of Makhachkala, were examined. The patients received medicinal treatment and medical massage. Galvanic mud therapy was conducted with the underlying standard therapy. The effectiveness and safety of the procedure were evaluated using visual analog scale (VAS), and also parameters of the arterial pressure and heart rate before and after the procedure, and also values of Kerdo vegetative index, body mass index, mobility of the cervical part of the spine, psychoemotional condition by WAM test. **Results.** Analysis of predomination and characteristics of pain syndrome revealed predomination of the damage to the upper cervical parts (in women – 62.0%, in men – 40.0%), and statistically more common cervicocranialgias in women (22.0% against 8.0% in men). Headaches associated with pain in the neck were reliably more common in women than in men (48.0% and 10.0%, respectively). A significant difference in the rate of complaints of pain irradiation to the upper limbs was recorded (20.0% of women against 10.0% of men). Intensity of pain syndrome determined by VAS test significantly differed in the compared groups before rehabilitation (5.25 ± 1.64 points in men and 5.62 ± 1.98 points in women, $p < 0.05$); after rehabilitation treatment VAS parameters decreased in both groups: in men down to 1.62 ± 0.83 points ($p < 0.05$), in women – to 2.25 ± 1.07 points ($p < 0.05$), here, no significant differences between the groups were found. In women with cervicgias the distance between the upper and lower cervical vertebrae was on average 14.0 ± 0.1 cm, increment on bending before treatment was 2.43 ± 0.75 cm and after treatment 2.75 ± 0.11 cm which indicates a tendency to normalization of the condition of muscle tissue, but preservation of spastic component. **Conclusion.** Mud therapy in complex rehabilitation of patients positively influences recovery of the motor activity of the cervical part of the spine.

Keywords: *rehabilitation, cervicgia, mud.*

According to International Association of the Study of Pain (IASP), 30-50% of the world population experience pain in the neck. Most commonly women of middle age are affected. Chronic cervicgias (pain in the neck for more than 3 months) are recorded in 15% of patients [1]. In Russia the incidence of chronic pain in the back is 48.2-56.7% without any significant differences between men and women [2,3]. The annual expendi-

tures on management and treatment of patients with cervicgias can compare with those on treatment of patients with headaches and lower backaches. In more than 85% of cases of acute backache it has skeletal-muscular origin [4,5].

To increase the effectiveness of medical-rehabilitation measures, individual selection of treatment programs is required on the basis of gender differences between patients

[6,7]. Features of the action of dirt on the human body are described in a large number of literary sources of XX-XXI centuries. Local influence on chronic inflammatory lesion mud treatments are obisboliveuse relieve inflammation and promote resorption of excess of callus, have a normalizing effect on we-shechen tone, contribute to increased amount of motion in the joints. The reaction of the body to the mud treatment depends not only on the properties of the mud itself, but also on the functional state of the body, the reactivity of its nervous system [8,9]. Biological differences between female and male organisms (morphological, neurohumoral, psychological) largely determine specificity of reaction to medical factors [9,10] which, in turn, determined the aim of our study.

Aim of work – to identify specificity of reaction of male and female organism to galvanic mud application procedures in cervicgia. The following tasks were set:

1. to study gender-related peculiarities of clinico-neurological condition of patients with cervicgia;

2. to study the dynamics of clinical manifestations of pain and muscle-tonic syndrome in patients with cervicgias on a comparative basis;

3. to evaluate therapeutic effectiveness of galvanic mud application procedures in the complex of rehabilitation treatment on the basis of the data of clinico-laboratory studies, psychosomatic analysis and test control, taking into account the gender of patients.

Materials and Methods

Under observation there were 48 patients (23 men and 25 women) who underwent a rehabilitation course on the basis of Republican Hospital of Rehabilitation Treatment in Makhachkala. The average age of men was 47.5 ± 2.0 years, and of women 43.2 ± 1.5 years. Duration of the disease was 18 ± 5.3 years.

Criteria for inclusion: pain in the spine (in the cervical, thoracic, lumbar parts), with duration more than 12 weeks with the vertebrogenic cause confirmed by X-ray examination or magneto-resonance tomography,

voluntary consent of patients for examinations and processing of the obtained data.

Criteria for exclusion: exacerbation of chronic somatic diseases, changes in blood tests of inflammatory character, existence of hypochondriac ideas (about uselessness of treatment), pregnancy.

Before and after treatment all patients were subject to neurological, orthopedic examination and pain control by VAS; daily – control of arterial pressure and heart rate before and after galvanic mud application procedure, calculation of vegetative Kerdo index and body mass index, discrimination sensitivity test and evaluation of psychoemotional condition by WAM test.

Mobility of the cervical part of the spine was evaluated by measuring the distance between the upper and lower cervical vertebrae with a centimeter tape (normally this distance with the maximal bending of the head is 3 cm).

All patients obtained standard medicinal treatment including intramuscular injections of meloxicam 1.5 ml №6, milgamma 2.0 ml №10, tolperisone hydrochloride (Mydocalm) 1.0 ml №5, alflutop 1.0 ml №20, perorally – tableted non-steroid anti-inflammatory drugs, for external application – diclofenac (Voltaren-gel of Diclofenacol) twice a day.

Patients were given galvanic mud therapy procedures in the region of the cervical part of spine with use of Tambukan mud (Russian origin). Mud temperature was $38-42^{\circ}\text{C}$, current density $0.04-0.06 \text{ mA/cm}^2$, duration of the procedure 20 min, treatment course – 8 procedures every other day.

Statistical processing of the results was carried out using the standard Microsoft Excel 7.0 software package.

Results and Discussion

Analysis of distribution of pain syndrome in men and women showed predomination of involvement of the upper cervical parts: 62% in women against 40% in men, and higher incidence of cervicocranialgia in women (22% against 8% in men).

Headaches associated with pain in the neck were more common in women that in

men (48% and 10%, respectively). A reliable difference was noted in the frequency of complaints of irradiation of pain to the upper limbs (20% in women against 10% in men). Attention was paid to the existence of specific “women’s” complaints: of headaches – 44%, irritability – 34%, dizziness – 48%, anxiety – 26%, which evidences imbalance in the psychoneurological status of female patients (which corresponds to the literature data about the incidence of depressive disorders in women with chronic pain) [11].

Vertebroneurological status was characterized by: backache, tonic muscle tension, limitation of movements in the cervical and lumbar parts of the spine, positive tension symptoms, statodynamic disorders, smooth-

ing or accentuation of physiological curvatures of the spine, painfulness of spinous processes to palpation.

On clinical examination it was found that in 100% of patients, both of men and women, there was no complete relief of pain syndrome after the preceding course of medicinal treatment, with remaining manifestations of muscle-tonic syndrome and limited motor activity providing the basis for persistence of nerve-muscle imbalance.

Results of examination conducted before rehabilitation showed no reliable differences in the intensity of the pain syndrome evaluated by VAS: it was 5.25 ± 1.64 points in men and 5.62 ± 1.98 points in women, $p > 0.05$ (Fig. 1).

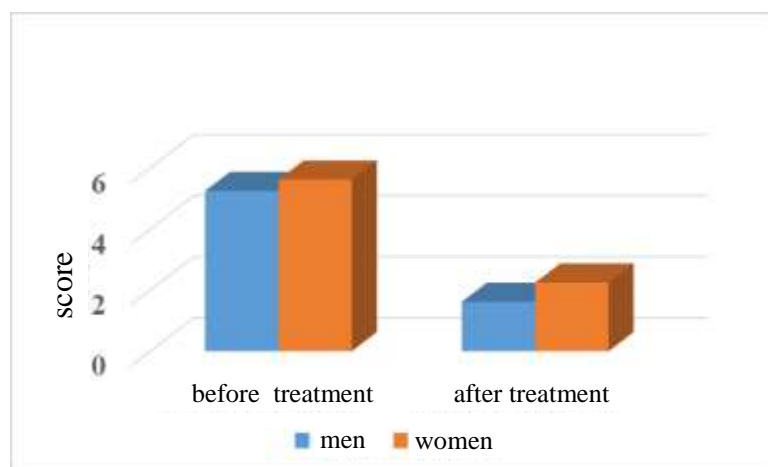


Fig. 1. The dynamics of pain syndrome test VAS of patients with cervicgia

After completion of the treatment course VAS parameters showed statistically significant reduction in both groups: in men – to 1.62 ± 0.83 points ($p < 0.05$), in women – to 2.25 ± 1.07 points ($p < 0.05$), with this, there was no statistically significant difference in the quantitative evaluation of pain syndrome between the groups after the rehabilitation course. Thus, the percentage of change in the evaluation of pain syndrome was higher in men (70%) as compared to women (60%).

In the process of rehabilitation the following dynamics of parameters of pain syndrome was noted: reduction in pain syndrome

in women – after 4-5 procedures (in 6 women with pain in the neck pain syndrome relieved on the 8th-10th day) with preservation of evident changes in the motor activity in cervical segments (test for bend of the head remained without changes – 2.4 ± 0.3 cm against 3 cm in norm). In men pain syndrome decreased after 6-7 procedures, and noticeable improvement occurred by the 10th-12th day which may evidence a somewhat slower but a more stable analgesic effect in men.

Before rehabilitation, in women with cervical dorsopathy autonomic dysfunction with predomination of sympathetic influence

was noted in 34.8% cases and with predomination of parasympathetic – in 34.8% of cases. After a course of galvanic mud procedures Kerdo vegetative index shifted toward eutonia (60.8% of cases) and remained as a sympathicotonic reaction in 26% of women.

In men initial predomination of sympathetic reaction (52% of cases) increased to 88% after treatment, but not a single case of eutonic reaction was noticed, which may evidence predomination of sympathetic nervous system reactivity in male patients.

Activation of sympathetic influences in galvanic mud procedures did not tell on the level of arterial pressure of the patients. In men the average arterial pressure (AAP) was 89.74 ± 1.94 mm Hg / 88.79 ± 1.37 mm Hg (before and after procedures, respectively); the heart rate showed a tendency to increase from 78.39 ± 1.56 beat/min before treatment to 82.04 ± 2.33 beat/min after treatment which correlates with the activation of sympathetic influences. Women either did not show the dynamics of AAP 82.37 ± 1.94 mm Hg / 82.49 ± 1.06 mm Hg (before and after procedures, respectively), the heart rate practically did not change – 78.24 ± 2.03 beat/min before and 77.64 ± 1.75 beats/min after rehabilitation, which also correlates with the parameters of the autonomic nervous system.

In men the average distance between the upper and lower cervical vertebrae was 10.00 ± 0.17 cm, increment on bending was 2.8 ± 0.1 cm before treatment and 3.0 ± 0.7 cm after treatment which indicates preservation

of elasticity of ligaments and muscles of the cervical part of the spine. In women the average distance between the upper and lower cervical vertebrae was 14.00 ± 0.10 cm, increment on bending was 2.43 ± 0.75 cm before treatment and 2.75 ± 0.11 cm after treatment which shows a tendency to normalization of the condition of muscle tissue, but preservation of spastic component. Thus, mobility of the cervical part of spine more actively changes in male than in female patients, and these parameters correlate with the dynamics of pain syndrome.

Examination of discrimination (two-point) sensitivity (DS) in the cervico-collar zone revealed increase in the parameter in the cervico-collar zone in cervicalgia and especially in cervicobrachialgia with more evident increase on the side of pain syndrome. No reliable difference in this parameter between men and women was found (12.51 ± 0.02 cm in men, 17.03 ± 0.04 cm in women). Worth noticing here is a considerable difference between the parameters on different sides of the same patient: $d = 6.25 \pm 0.05$ cm. DS parameters after treatment show no reliable differences between men and women groups but differ before and after treatment. In men the gradient of changes was 34.77%, in women – 33.64%. The parameters indicate absence of gender differences in the recovery of deep sensitivity receptors under influence of mud treatment.

The dynamics of studied parameters in patients with cervicalgia is given in Table 1 and Figure 2.

Table 1

Dynamics of Studied Parameters in Patients with Cervicalgia before and after Galvanic Mud Treatment

	men		women	
	before treatment	after treatment	before treatment	after treatment
Discrimination sensitivity, cm	12.51 ± 0.02	$8.16 \pm 0.02^*$	17.03 ± 0.04	$11.3 \pm 0.05^*$
VAS, points	5.25 ± 0.45	1.62 ± 0.32	5.62 ± 0.49	2.25 ± 0.36
Mobility of the cervical part of spine, cm	2.81 ± 0.18	3.0 ± 0.16	2.43 ± 0.27	2.75 ± 0.16

Note: * – $p < 0.05$.

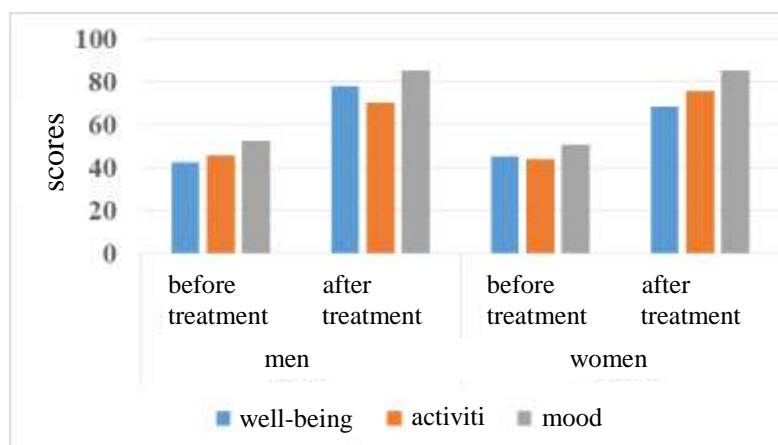


Fig. 2. Dynamics of indicators of the WAM test in patients with cervicalgia

Analysis of SAN test (Fig. 2) shows a positive influence of the conducted course of treatment evidenced by the improvement of psychoemotional condition of all patients. Here, improvement of psychoemotional background in women does not depend on the extent of improvement of motor activity, but is probably associated with reduction in the extent of specific «women's» complaints (headaches, anxiety, easy crying, etc.).

Thus, analysis of the obtained data reveals more active recovery of the disordered functions of the cervical part of the spine in men in comparison to women.

Conclusion

The given study showed that mud therapy in complex rehabilitation of patients produces a positive influence on the recovery of motor activity of the cervical part of the spine, and also on the psychoemotional condition of the patient. Activating influence is noted on the sympathetic nervous system which, according to our data, is more expressed in men. Recovery of movements in the cervical part of the spinal cord is less expressed in women which evidences preservation of spastic component and probably suggests a longer course of mud therapy.

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Дополнительная информация [Additional Info]

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Информация об авторах [Authors Info]

Филатова Елена Владимировна – д.м.н., профессор кафедры медицинской реабилитации, спортивной медицины, лечебной физкультуры, курортологии и физиотерапии ФГБУ ДПО Центральная государственная медицинская академия Управления делами Президента Российской Федерации, Москва, Россия. [**Elena V. Filatova** – MD, Grand PhD, Professor, Department of Medical Rehabilitation, Sports Medicine, Physical Therapy, Balneology and Physiotherapy, Central State Medical Academy of Department of Presidential Affairs of the Russian Federation, Moscow, Russia.]
SPIN 5470-1139,
ORCID ID 0000-0003-3732-6680,
Researcher ID D-7754-2018.

Малаев Хаджимурат Магомедович – главный врач Республиканской больницы восстановительного лечения, Махачкала, Республика Дагестан, Россия. [**Khajimurat M. Malayev** – Chief Medical Officer, Republican Hospital of Rehabilitation Treatment, Makhachkala, Republic of Dagestan, Russia.]
SPIN 9905-0014,
ORCID ID 0000-0003-4331-618X,
Researcher ID H3286-2018.

***Коновалов Олег Евгеньевич** – д.м.н., профессор кафедры общественного здоровья, здравоохранения и гигиены Медицинского института ФГАОУ ВО Российский университет дружбы народов, Москва, Россия [Oleg E. Kononov – MD, Grand PhD, Professor of Department of Public Health, Health Care and Hygiene, Russian Peoples Friendship University, Moscow, Russia.]
SPIN 5181-8547,
ORCID 0000-0003-1974-9882,
Researcher ID T-4815-2017.
E-mail: kononov_oe@mail.ru

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