

POSTURAL DISHARMONY IN RELATION TO THE BACK PAIN AND PHYSIOTHERAPEUTIC REHABILITATION

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SUMMARY

Introduction: Postural attitude is putting the body at attention as an important factor in the prevention of spinal deformities axis and thus the back pains due to changes in articulo sacroiliaca (ASI), lumbal syndrome (SL), cervical syndrome (SC) and others. Purpose: The purpose of this research is to determine the level of impact of spinal muscular misbalance that affects daily life activities, physiotherapeutic protocol according to Dr. MC Gill's, and senso-motoric exercises to reduce the pain that backpack.

In this material were included 43 patients, 13 males and 30 females aged 18 to 50 years old who were included in the second and third degree after completing a survey of ODI's—the index of disability (Oswestry Disability Index). Results: The results obtained show that after the protocol of physiotherapeutic Dr. MC Gill's, and senso-motor exercise significantly decrease pain in the back which confirmed the results of the questionnaire according to ODI, where it is seen that out of 30 patients with complaints of second-degree or 69.8%, and 13 patients or 30.2% that have been complaints of third degree with significant

disorders of activity of daily life before rehabilitation treatment. The results obtained after three-month rehabilitation treatment according ODI's questionnaire (Oswestry Disability Index) show that 31 patients have complaints of first instance or 72.1%, then 9 patients have complaints or 20.9% of second level and 3 patients or 7.0% remained in the third degree of apparent disorder of daily life activity. Conclusion: From this we can highlight the misbalance of muscles of the body is one of the leading causes of back pain
Key words: pain in the back, the axis spinal deformities.

1. INTRODUCTION

In the human body operates uninterrupted force of gravity, with the tendency to balance and smooth out the bend part of the body to the ground. This phenomenon opposing the active and passive forces of body, during which engage the body parts and the trunk kept in physiological limits. The action of mechanical forces to man most can be entered and registered in the locomotor apparatus.

All the forces which maintain normal posture must be in balance. Possession of muscle strength leads to posture for straight and regular movement, the forces of gravity lead to non-mobility, tranquility and fall of posture from right, and thus to the deformity of body and pain in the back (1).

Many studies show that the back pains are more frequent than the pains of other body parts.

Early diagnosis and correct postural pains backpack made possible

the planning and strategy of the intervention plan and faster recovery (2).

The pain in the back needed objectivity of indicators that cause these pain so safely and efficiently can be diagnosticated, programed, so that direct can control the leading processes to their elimination.

2. GOALS

The purpose of the paper is:

- To be explored and confirmed the impact of the back pain in relation to activities of daily life.
- To be explored and identified physiological posture-axis flexure in patients with spinal back pain.
- To determine the stability and senso-motor, it affects the spinal muscular incongruities in life activities.
- To investigate influence of consequences of bad postural body positions during daily work using computers.

- To investigate the influence of physiotherapeutic rehabilitation in muscle strengthening global and segmental spinal axis and reduce the back pain.

3. MATERIAL AND METHODS

The research included 500 cases aged from 18 to 50 years of age both sexes with spinal muscular imbalance in period June 2010 until January 2011. Cases are selected according to the survey's ODI (Oswestry Disability Index) known as "the Oswestry Low Back Pain Disability Questionnaire."

Of those 43 cases were select assessment IDIAG postures with IDIAG MEDIMOUSE or Spinal mouse (Figure 1). Assessment tool to determine the shape of the spinal axis in the sagittal and frontal plane and mobility for each segment of the spinal axis.

For all groups of system variables are calculated basic statistical parameters and distribution for each



Figure 1. Idiag medimaous



Figure 2. Measuring postures

variable, and measures of asymmetry and normal distribution.

Minimum and maximum values (R.min-R.maks), the average arithmetic (MA), standard deviation (DS), asymmetry parameters (SKEW and Kurt).

4. RESULTS

From 43 patients involved in research with normal flexure were identified 20 patients or 46.5%. With hyperkyfosis 19 cases or 44.2% and hypokyfosis identified 4 patients or 9.3% of patients.

With Spinal mouse is a classification of patients according to the lakes in the backbone lumbalis of 43 patients involved in research with normal flexure identified 29 patients or 67.4%. With hiperlordosis were identified 12 patients or 27.9% and hypolordosis 2 or 4.7% of patients

Pelvic lakes is a very important in maintaining postures towards the backbone. With normal pelvic were identified 33 patients with either 76% of them. With anterior pelvic flexure were identified 9 cases or 20.9 and posterior pelvic lakes is identified only one case or 2.3%.

Before the treatment results according ODIT rehabilitation cen-

ter (Oswestry Disability Index) show that 30 patients have complaints of second level or 69.8%, and 13 patients or 30.2% have complaints of third degree with significant disorders of the activity of life everyday.

Table 1 are presented the differences between arithmetic averages of the questionnaire according to ODI's at the beginning and after three-month rehabilitation treatment. The results obtained show that there is a statistically significant difference at P = 0.01

Exercises performed 3 x per week from 40 min. to impact positively on improving expense incongruities muscular backbone that affects daily life ac-

gained significant deviations from normal distribution. Dynamic balance test (DYNAMIC) has arithmetic average (30.79) is the standard deviation (7.91) while the minimum score is (20) and one maximum (4). Asymmetry obtained no significant deviations from normal distribution.

Test of movement left to right (PULR) is (30.00) is the standard deviation (9.10) while the minimum score is (10) and one maximum (4). Asymmetry obtained no significant deviations from normal distribution.

Test of top-down movement (PUTB) is (standard deviation is 28.20 (8.33) while the minimum score is (15) and one maximum (4). Asymmetry gained no significant deviations from normal distribution.

Test of horizontal movement (HM) has the arithmetic average (29.67), standard deviation is (7.80) while the minimum score is (11) and one maximum (4). Asymmetry ob-

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
STATIC	43	33.00	92.00	53.6279	9.5694	1.068	5.429
DYNAMIC	43	20.00	49.00	30.7907	7.9179	.354	-.893
PULR	43	10.00	44.00	30.0000	9.1000	-.676	-.024
PUTB	43	15.00	44.00	28.2093	8.3340	.317	-1.028
HM	43	11.00	44.00	29.6744	7.8063	.118	.023
VM	43	13.00	48.00	26.4884	8.3819	.769	-.204
CR	43	13.00	60.00	29.9070	11.1480	1.291	1.963
CCR	43	13.00	55.00	25.7442	8.5443	1.273	3.062
CM	43	11.00	51.00	23.8372	8.8235	1.252	1.831

Table 1. Basic statistic parameters of stabiliment testing for all

tivities.

Rehabilitation outcomes after treatment show the positive impact of the rehabilitation treatment manifested through reduction of back pain.

Table 1. parameters are presented and statistical basic asymmetry stabilimeter testing to all patients.

The execution of static balance test (STATIC) is (53.62), standard deviation is (9.56) while the minimum score is (33) and he maximum (92). Asymmetry has

	Mean	N	Std. Deviation	Std. Error Mean
STATIC	53.6279	43	9.5694	1.4593
STATIC	60.7209	43	9.3129	1.4202
DYNAMIC	30.7907	43	7.9179	1.2075
DYNAMIC	67.0930	43	7.4668	1.1387
PULR	30.0000	43	9.1000	1.3877
PULR	37.0465	43	8.5439	1.3029
PUTB	28.2093	43	8.3340	1.2709
PUTB	35.9070	43	7.7944	1.1886
HM	29.6744	43	7.8063	1.1905
HM	38.3256	43	8.4027	1.2814
VM	26.4884	43	8.3819	1.2782
VM	33.7442	43	7.6504	1.1667
CR	29.9070	43	11.1480	1.7000
CR	38.0930	43	10.9497	1.6698
CCR	25.7442	43	8.5443	1.3030
CCR	33.5814	43	8.3502	1.2734
CM	23.8372	43	8.8235	1.3456
CM	32.8372	43	8.9627	1.3668

Table 2. Differences between results of mediana of stabilimeter before and after rehabilitating treatment

tained no significant deviations from normal distribution.

Test of vertical movement (VM) has the arithmetic average value (26.48), standard deviation is (8.38) while the minimum value is (1) and one maximum (4). Asymmetry obtained no significant deviations from normal distribution

Test rotation in clockwise direction (CR) has the arithmetic average value (29.90), is the standard deviation (11.14) while the minimum value is (3) and one maximum (6). Asymmetry has gained significant deviations from normal distribution.

Test against clockwise rotation (CCR) is arithmetic average value (26.56), standard deviation is (9.44) while the minimum value is (3) and one maximum (5). Asymmetry has gained significant deviations from normal distribution.

Test constant motion (CM) is arithmetic average value (23.83), standard deviation is (8.83) while the minimum value is (11) and one maximum (5). Asymmetry obtained no significant deviations from normal distribution.

In Table 2 we can see a significant statistical difference in mediana before and after rehabilitating treatment. This difference is important in level ($p < 0.01$). Gained difference shows that applied exercises during the three month rehabilitation has influenced in growing the efficacy for execution of stabilimer tests.

5. DISCUSSION

Applied methods for identification of back pain because of muscular imbalance of spine and other parts lately is studied by many authors.

Comparison of results is difficult because of methodology of work, tested patient, work conditions and methods for sample results

Morphological space and postural disorders to the persons of all ages no matter of their activities, long obligated standing and incor-

rect movement bring to the different deformities in morphological aspect. As part of functional sequence leads to the shortage and weakness of appointed musculature, musculature misbalance which is a leading cause for weak development of body, different deformities appearance which lead to the backache (4).

Muscular misbalance of spine affects everyday activities and physical therapy has positive influence for global and segmental muscular strength of spine.

Physical therapy with three session per week and each session lasts 40 min. is done based on protocol of Dr. MC-GILL-it, sensomotoric exercises increase the overall muscular strength based on methodology of holistic type and with this can achieve the stability and sensomotoric symmetry of body (3, 6).

6. CONCLUSION

Postural disorders, fixed deformities, more evidenced hyperkinesias, psychic instability and neurosis are phenomena following the way of life.

Morphological space and postural disorders to the persons of all ages with no matter of their activity, long obligated standing and not moving right brings to the deformities in the morphological and functional activities which send to the shortage and weakening the target musculature and in some cases come to the misbalance of musculature, which is the main cause for weak appearance and development of the body, presentation of different deformities which is followed with back pain.

Performed exercises forty minutes three times per week based on dr. MC-GILL protocol and sensomotoric exercises for spine have positive influence for improving the muscular misbalance of spine which affects the everyday activities. The results after rehabilitated treatment show positive outcome which results with less backache.

Questionnaire results based on ODI after treatment show the improving of health condition and mostly of patients (72,1%) passed from stage II and III in the first stage. Apparently we have improved static and dynamic balance after application of exercises based on dr MC-GILL and sensomotoric exercises. Postural disharmony of spine has close relationship with backache. Backache has close relation with everyday activities. Backache has a close relation with sensomotoric function of spine. Mobility exercises of spine have a positive influence improving segmental and global overall strength of spine.

Conflict of interest: none declared.

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