ERGOTHERAPY STIMULATES INDEPENDENCE IN ACTIVITIES OF DAILY LIVING AND REDUCES DEPRESSION IN PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS

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INTRODUCTION
The amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disorder, first described by the French neurologist Jean-Marie Charcot (maladie de Charcot or Charcot’s disease) [4,5]. In United States ALS is known like Lou Gehrig's disease, after the famous American “Yankees” baseball player who died from ALS in 1941.
The ALS like a form of motor neuron disease (MND) is listed as a "rare disease".

The AIM of this study is to appreciate the role of ergotherapy like a part of complex rehabilitation in patients with ALS; to evaluate the effect on the independence of ALS patient in activities of daily living and on the depression grade.

MATERIAL AND METHODS:
In the years 2004-2009 a total of 38 patients with ALS (divided into 2 groups) were observed during a 20 days treatment:
- 10 days like in-patients in a Neurorehabilitation department of the University hospital in Pleven or of the National Specialized hospital of Physical therapy and Rehabilitation – Sofia;
and
- 10 days like out-patients in a Medical Center – MC “Vitalis” in Sofia and MC“Pleven” in Pleven).
The REHABILITATION COMPLEX in both groups includes:

**PHYSIOTHERAPY**
- Analytic exercises for upper limbs,
- Cryomassage of lower limbs,
- Proprioceptive neuromuscular facilitation for lower limbs,

**PREFORMED PHYSICAL MODALITIES**
- Electrophoresis with Nivalin – 10-20 mA, 10-20 min., 10 procedures, longitudinal localization of electrodes in upper limbs, with an electric device Intelect 2006 of Chattanooga group;
- Electrostimulations in motor points of ulnar and radial nerves and corresponding muscles, parameters depending individual electrodiagnostic results; with an electric device Intelect 2006 of Chattanooga group;
- Electrostimulations in extensors muscles of lower limbs (antagonists of spastic muscles), tetanizing impulses; with an electric device Intelect 2006 of Chattanooga group;
- Low intensity low frequency magnetic field for feet – 204 Oe, 10 min., 10 procedures, with a device Magnit N80.

In patients of the second group we apply too

**ERGOTHERAPY (OCCUPATIONAL THERAPY)** – training of activities of daily living, including grip and gait [3,6,7,10,12,13,14,15].

Patients were examined before, during, after treatment and one month later, according a Protocol, including clinical patterns of ALS (motor weakness, hypotrophy in upper limbs, cramps and spasticity in lower limbs, psychometric tests – Zung-D) and some investigations (neurofunctional tests and neuroimagery) [1,2,8,9,11].

Statistical analysis was effectuated by t-test (ANOVA) and Wilcoxon rank test.

**RESULTS**
The comparative analysis of results demonstrates a statistically significant (p<0.05) favorable effect on spasticity 0-4 (fig.1), grip (fig.2), velocity of the gait (fig.3), independence in activities in daily living 0-5 (fig.4), functional tests, depression (fig.5); especially in patients treated with ergotherapy - group 2.
Fig. 1. Spasticity in lower limbs

<table>
<thead>
<tr>
<th>No spasticity</th>
<th>Low 1</th>
<th>Middle 2</th>
<th>Spasticity 3</th>
<th>Important spasticity 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Th</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>19</td>
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<tr>
<td>After Th</td>
<td>4</td>
<td>8</td>
<td>14</td>
<td>7</td>
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</tbody>
</table>

Fig. 2. Evaluation of the precise grip (0-5)

Fig. 3. Test of 20 m walking
CONCLUSION
The complex rehabilitation of ALS ameliorates the independence of patients in activities of daily living and reduces depression.
1. Aguer L. Depresion vascular. La opinion del psiquiatra, 2005, 2, 3-5.

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