

# COMPLEX REHABILITATION AMELIORATES QUALITY OF LIFE OF PATIENTS WITH BARRÉ-LIEOU SYNDROME

*Ivet Koleva*<sup>1,2</sup>, *Radoslav Ioshinov*<sup>3</sup>

*1 Department of Physical Medicine, Rehabilitation, Ergotherapy and Sports at the Medical University of Pleven*

*2 Clinic of Physical and Rehabilitation Medicine at the University Hospital of Pleven – Bulgaria*

*3 Laboratory of Telematics at the Bulgarian Academy of Sciences – Sofia, Bulgaria*

## INTRODUCTION

In 1925 a French neurologist Jean Alexandre Barre, and in 1928 a Chinese doctor Yong-Choen Lieou, independently one from the other, described a syndrome including a lot of symptoms – consequences of the dysfunction of the posterior cervical sympathetic chain [4].

According to *www.wrongdiagnosis.com*, the posterior cervical sympathetic syndrome known as Barre Lieou syndrome (BL-S) is summarized as “a rare condition where trauma (such as pinching by adjacent vertebrae or arthritis) to the sympathetic nerves located in the spinal area of the neck results in a variety of neurological symptoms.” Also mentioned by *www.wrongdiagnosis.com*: “Barre Lieou syndrome is listed as a "rare disease" by the Office of Rare Diseases of the National Institutes of Health (NIH). This means that BL’S, or a subtype of BL’S, affects less than 200,000 people in the US population. [NIH] [15, 24].

According to *www.CaringMedical.com*, the symptoms that characterize BL-S are as follows: headache, facial pain, ear pain, vertigo, tinnitus, hoarseness, neck pain, severe fatigue, muscle weakness, sinus congestion, a sense of the eyeball being pulled out, numbness (including facial numbness), a pins-and-needles sensation of the hands and forearms, corneal sensitivity, dental pain (phantom pain), shoulder pain, lacrimation, swelling on one side of the face, nausea & vomiting, localized cyanosis of the face, blurred vision (associated with the headache); anxiety, chest pain, nystagmus, leg pain [4,23].

In clinical practice different drugs are applied (peroral, intramuscular, paravertebral infiltrations, local unguents). We decided to combine different natural and preformed physical modalities for improvement of the quality of life of patients [1,2,3,10,13,14,20,21,22].

## AIM

The goal of current study is to evaluate the efficacy of the complex rehabilitation in patients with BL’S.

## MATERIAL AND METHODS

In the years 2004-2009 a total of 27 patients (18 women & 9 men – fig.1, middle age 47,3 years, age distribution – fig.2) with BL’s 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) – MC “Vitalis” in Sofia and MC“Pleven” in Pleven).

Fig.1. Distribution men : women

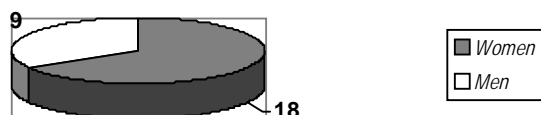
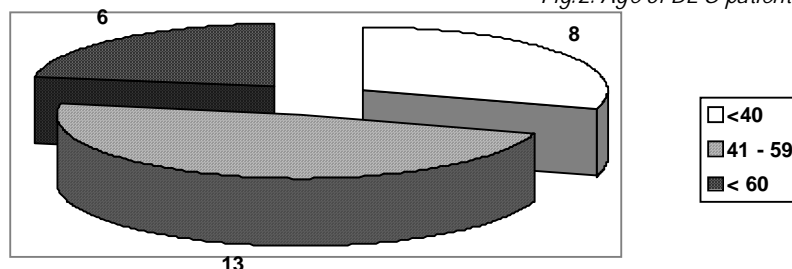


Fig.2. Age of BL-S patients



Our **REHABILITATION COMPLEX** includes:

- **PHYSIOTHERAPY (KINESITHERAPY):**
  - *Analytic exercises* for cervical paravertebral muscles,
  - *Relaxing massage* techniques,
  - *Post-isometric relaxation* of some muscles of the cervical region – v.gr.pars descendens of m.trapezius, m.sternocleidomastoideus,
  - *Mobilizations* in the cervical spine - predominantly at 0-C1 and C1-C2 levels (for atlanto-occipital and atlas-axis joints).
- **PROCEDURES WITH PRE-FORMED PHYSICAL MODALITIES:**
  - *Transcutaneous electro-neurostimulation (TENS)* – 10 min., 10 procedures, paravertebral localization of electrodes, with an electric device Intelect 2006 of Chatanooga (USA) [19];
  - *Low intensity low frequency magnetic field* – 204 Oe, 10 min., 10 procedures, with a device Magnit N80 (Bulgaria).

Patients were examined before therapy (B.Th.), during treatment, after therapy (A.Th.) and one month later, according a Protocol, including clinical patterns of BL's, psychometric tests and some investigations (neurofunctional tests, neuroimagery) [5,6,7,8,9,11,12,16].

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

## RESULTS AND ANALYSIS

The comparative analysis of results demonstrates a statistically significant favorable effect on headache (fig.3), vertigo, tinnitus, neckpain (fig.4) [18], shoulder pain, numbness, nausea, stuffy nose, fatigue, anxiety (fig.5). The effect remains stable one month after the end of treatment.

Fig.3. HEADACHE - Visual Analogue Scale of PAIN (VAS 0-20)

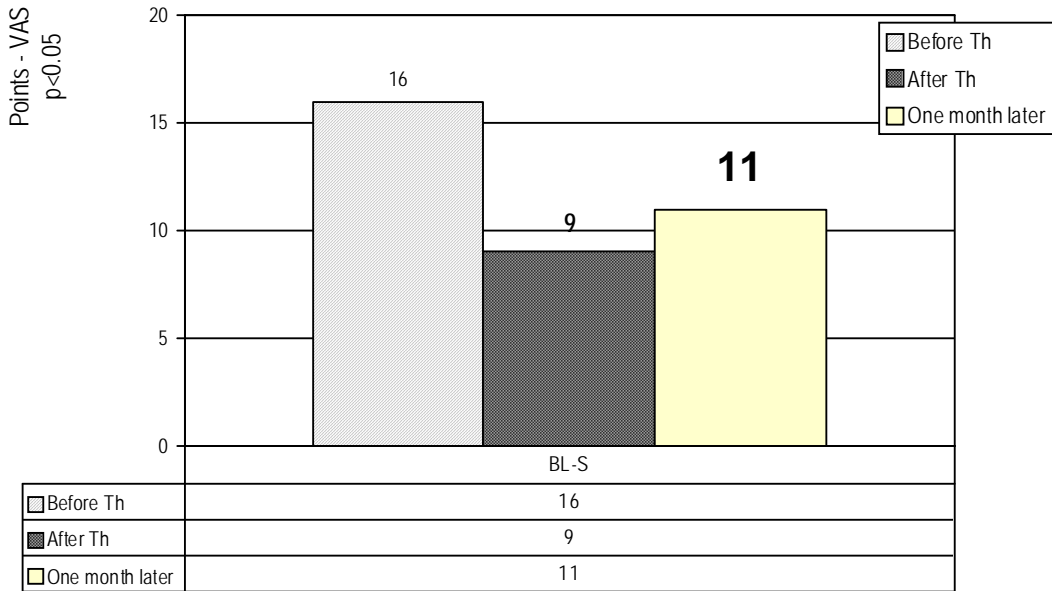


Fig.4. NECKPAIN - Visual Analogue Scale (VAS 0-20)

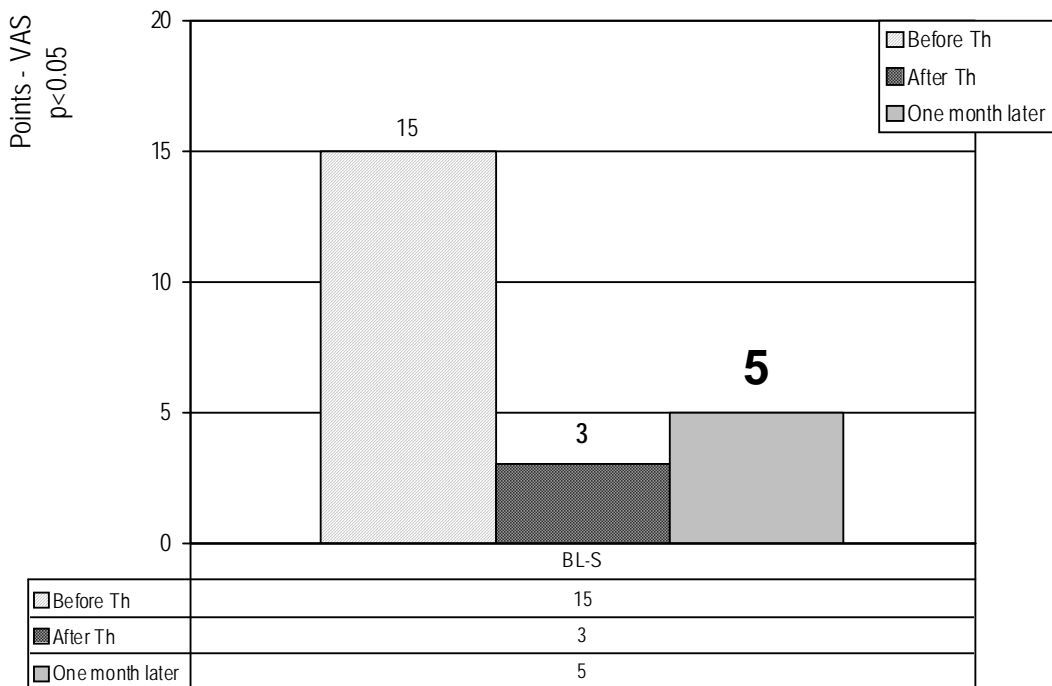
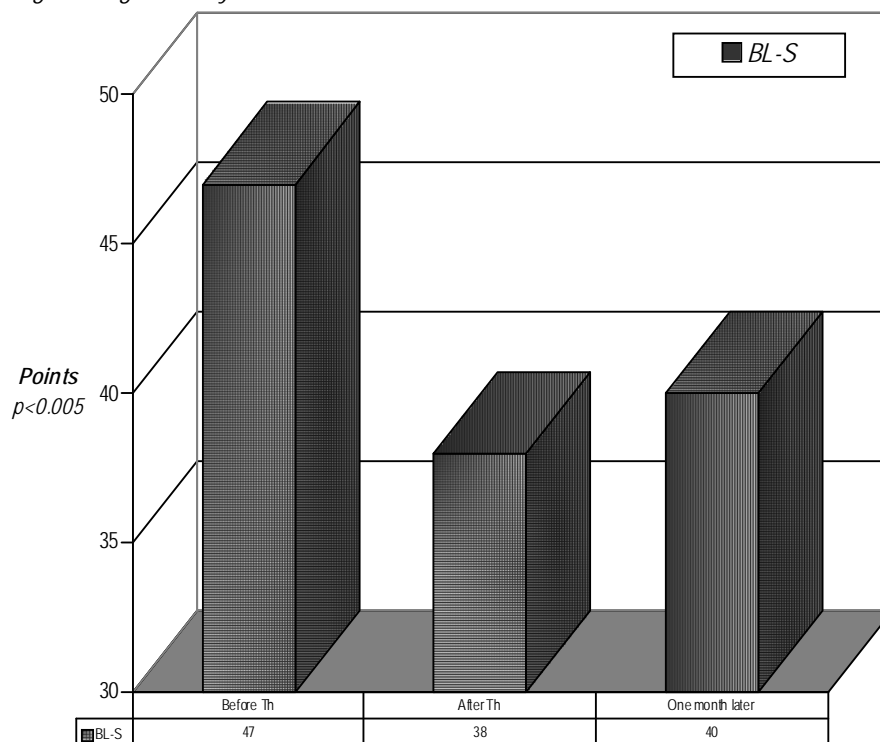


Fig.5. Zung - Anxiety



## DISCUSSION AND CONCLUSION

The complex rehabilitation of Barre Lieou syndrome ameliorates quality of life of patients.

## BIBLIOGRAPHY:

1. American Academy of Physical Medicine and Rehabilitation Task Force on Medical Inpatient Rehabilitation Criteria (JL Melvin Chair). Standards for Assessing Medical Appropriateness Criteria for Admitting Patients to Rehabilitation Hospitals or Units, 2006. [Internet – cited March 6, 2008] Available at: <http://www.aapmr.org/hpl/legislation/mirc.htm>
2. Anwar F, Panesar BS. How good are we in setting and reviewing patients' rehabilitation goals? – In: Proceedings of the 16<sup>th</sup> European Congress of Physical and Rehabilitation Medicine (Brugge, Belgium, June 2008). Turin: Edizioni Minerva Medica, 2008, 158-159.
3. Association of Academic Physiatrists. About our field. [Internet, cited January 26, 2008] Available at: [http://www.physiatry.org/field\\_section.cfm](http://www.physiatry.org/field_section.cfm)
4. Berlit P. Neurology. – London – Glasgow – Weinheim – New York – Tokyo – Melbourne – Madras: Chapman & Hall Medical, Memorix series, 1996.
5. Bernard CI. Introduction a l'étude de la médecine expérimentale. – Paris: Hachette, 1943.
6. Bethoux F, Calmels P. Guide de mesure et d'évaluation en médecine physique et de réadaptation. – Paris: Roche, 2003.
7. Boubée M. Bilans analytiques et fonctionnels en rééducation neurologique. Tome 2. Membres supérieurs et bilans spécifiques. – Paris: Masson, 1975, 12-25, 89-97.
8. Caranzano F, Giugliemma C, Drecq E. Freedom of communication and interaction with the environment: Milestone of quality of live. – In: Proceedings of the 1<sup>st</sup> World Congress of the International Society of Physical and

Rehabilitation Medicine, Amsterdam, the Netherlands, July 2001. W Peek, G Lankhorst Eds, Monduzzi Editore, 819-823.

9. DeLisa JA. Physical Medicine and Rehabilitation – principles and practice. 4<sup>th</sup> Edition. – Philadelphia: Lippincott, Williams & Wilkins, 2005.

10. Didier J. La plasticité de la fonction motrice. Collection de l'Académie Européenne de Médecine de Réadaptation. – Paris: Springer Verlag, 2004, 476.

11. Dijkers M. Measuring quality of life. – In: M Furher Ed. Assessing medical rehabilitation practices. The promise of outcomes research. Baltimore: Brookes Publishing Co, 1997, 153-179.

12. Dijkers M. Putting the Individual Back Into Quality of Life Assessment: a review of approaches. - In: The 1<sup>st</sup> World Congress of the International Society of Physical and Rehabilitation Medicine, Amsterdam, the Netherlands, July 2001. Eds W Peek, G Lankhorst. Monduzzi Editore, 805-813.

13. Dobkin B. Mechanisms for training-induced plasticity. - In: Abstracts Book of the 3<sup>rd</sup> World Congress in Neurological Rehabilitation, Venice, Italy, 2002, 11.

14. European Academy of Rehabilitation Medicine, European Federation of Physical and Rehabilitation Medicine, European Union of Medical Specialists (Physical and Rehabilitation Medicine Section): White Book on Physical and Rehabilitation Medicine. – Madrid: Universidad Complutense, 1989.

15. Gabe J. Health, medicine and risk: the need for a sociological approach. – In: J Gabe Ed. Medicine, health and risk (Sociological approaches), 1-18.

16. Gilhus N. Research in neurorehabilitation and neurorehabilitation training. - In: Abstracts Book of the 3<sup>rd</sup> World Congress in Neurological Rehabilitation, Venice, Italy, April 2002, 44-45.

17. Haig AJ. Practice of physical medicine and rehabilitation on both sides of the Atlantic: differences and the factors that drive them. European Journal of Physical and Rehabilitation Medicine, 2008, 44, 2, 111-115.

18. Koleva I. Chronic pain and physical analgesia: the impact of physical modalities to reduce pain. - Journal of Biomedical and Clinical Research, 1, 2008(1):12-17.

19. Nalty T, Sabbahi M. Electrotherapy Clinical Procedures Manual. Theresa Nalty Ed. – New York – St. Louis – San Francisco – Bogotá – Caracas – Lisbon – London – Madrid – Mexico City – Milan – Montréal – New Delhi – Singapore – Sydney – Tokyo - Toronto: McGraw – Hill, 2001, 299 p.

20. UEMS (Union Européenne des Médecins Spécialistes) 2005 / 14 final. European Definition of the Medical Art. Adopted in Munich, 21 - 22 October 2005. [www.uems.net](http://www.uems.net).

21. UEMS – PRM-section: Definition of Physical and Rehabilitation Medicine. [www.euro-prm.org](http://www.euro-prm.org), 2005.

22. UNESCO. Universal Declaration on bioethics and human rights. October 2005.

23. [www.CaringMedical.com](http://www.CaringMedical.com)

24. [www.wrongdiagnosis.com](http://www.wrongdiagnosis.com)

**CORRESPONDENCE ADDRESS:**

Assoc. Prof. **Ivet KOLEVA**, D.M., Ph.D.;  
*Head of Department of Physical Medicine, Rehabilitation, Ergotherapy and Sport at the  
Medical University of Pleven, Bulgaria;*  
*Chief of Clinic of Physical and Rehabilitation Medicine at the  
University Hospital of Pleven, Bulgaria*  
Phone +359.64.886-295; Mobile +359.888 20 81 61;  
E-mail: [yvette@cc.bas.bg](mailto:yvette@cc.bas.bg)