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## CONTROVERSIES IN A CASE OF NEUROBORRELIOSIS VERSUS AMYOTROPHIC LATERAL SCLEROSIS AND METHODS OF RECOVERY

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### Abstract

*Purpose.* Because of difficulties in making the diagnosis of neuroborreliosis the physician must correlate clinical with laboratory data to confirm the diagnosis. Early on, personality changes, psychiatric symptoms, or cognitive manifestations may be the first, and occasionally the only, symptoms that the patient or family is aware of. Amyotrophic lateral sclerosis (ALS) is the most common degenerative disease of the motor neuron system. The cause of ALS is unknown, although 5-10% of cases are familial. The diagnosis of ALS is primarily clinical. Electro diagnostic testing contributes to the diagnostic accuracy

*Material and methods:* we exam a 63 year patient hospitalized in Neurology Department of Clinical Hospital of Constanta, between 10-20.12.2012.

*Discussion.* Our patient has a history of exposure to B. Burgdorferi one year before the apparition of symptoms. Family describes personality changes and mild cognitive manifestations. We must say that in past history he has an ethanolic abuse. Next symptoms were muscle pain and trouble of gait. It was suspected to have borreliosis and lab results show a little increase of IGM antiborreliia. After one year of antibiotic treatment the gait is worse and appeared trouble of speech and patient was admitted in our department. On clinical examination we found sign of upper and

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lower motor neuron symptoms. We perform serum immunology and LCR for borrelia was norm, MRI cerebral and cervical scan was normal, EMG show fasciculation and fibrillation potentials. We begin a neuromotor and physiologic rehabilitation.

**Conclusions:** it is important if the symptoms are not clear and the results of immunology is not complete to not begin treatment for borreliosis and the interdisciplinary consult is necessary to complete the diagnosis. After antibiotic treatment we observe that clinical sign worst.

**Key words:** neuroborreliosis, amyotrophic lateral sclerosis, differential diagnosis

## Introduction

Early on, personality changes, psychiatric symptoms, or cognitive manifestations may be the first, and occasionally the only, symptoms that the patient or family is aware of.

Amyotrophic lateral sclerosis (ALS) is the most common degenerative disease of the motor neuron system.

The cause of ALS is unknown, although 5-10% of cases are familial.

The diagnosis of ALS is primarily clinical. Electro diagnostic testing contributes to the diagnostic accuracy.

## Material and methods

We exam a 63 year patient hospitalized in Neurology Department of Clinical Hospital of Constanta, between 10-20.12.2012. We initiate a rehabilitation program for preventing the spasticity.

## Results and discussion

Our patient has an history of exposure to B. Burgdorferi one year before the apparition of symptoms. Family describes personality changes and mild cognitive manifestations. We must say that in past history he has an ethanolic abuse. Next symptoms were muscle pain and trouble of gait. It was suspected to have borreliosis and lab results show a little increase of IGM antiborrelia. After one year of antibiotic treatment the gait is worse and appeared trouble of speech and patient was admitted in our department. On clinical examination we found sign of upper and lower motor neuron symptoms.

We perform a cervical and thoracal MRI with disk hernia C6-7, Angi-CT of carotid vessel shows carotidian bulbar calcification bilateral, cerebral MRI normal.

We perform serum immunology and LCR for borrelia was norm. Borrelia Ig G, Ig M in LCR and serum. Albumine in LCR 356 mg/dl, albumine in serum 40.4g/l, QAlb 8.8, Ig G in LCR 30MG/L, Ig G IN SERUM 8.22G/L, QIgG 3.6, IgM in LCR 0.19mg/l, IgM in serum 0.5 g/l, QIg M( all results show absence of intratecal sintesis of Ig G and Ig M).

**Table 1.** The nerves

EMG	Inserti on activit y	Spontaneous			Motor unit potential				Recruitme nt pattern
		Fibrill at.	PSW	Fascic ul.	Other discharg es	Amp	Dur	Poly	
<b>Tibialis anterior R</b>	-	++	--	-	+	+	-	sarac	
<b>Vastus lateralis R</b>	-	-	-	-	+	+	-	sarac	
<b>Tibialis anterior L</b>	+	-	-	-	+	+	-	sarac	
<b>Gastroc caput med L</b>	-	+++	-	-	+	+	-	sarac	
<b>Vastus lateralis L</b>	-	-	-	-	+	+	+	sarac	
<b>Abd pollicis brev R</b>	-	-	-	-	+	+	-	sarac	
<b>Abd dig min (man) R</b>	-	-	-	-	+	+	-	sarac	
<b>Biceps R</b>	+	+	-	-	+	+	-	Sarac	



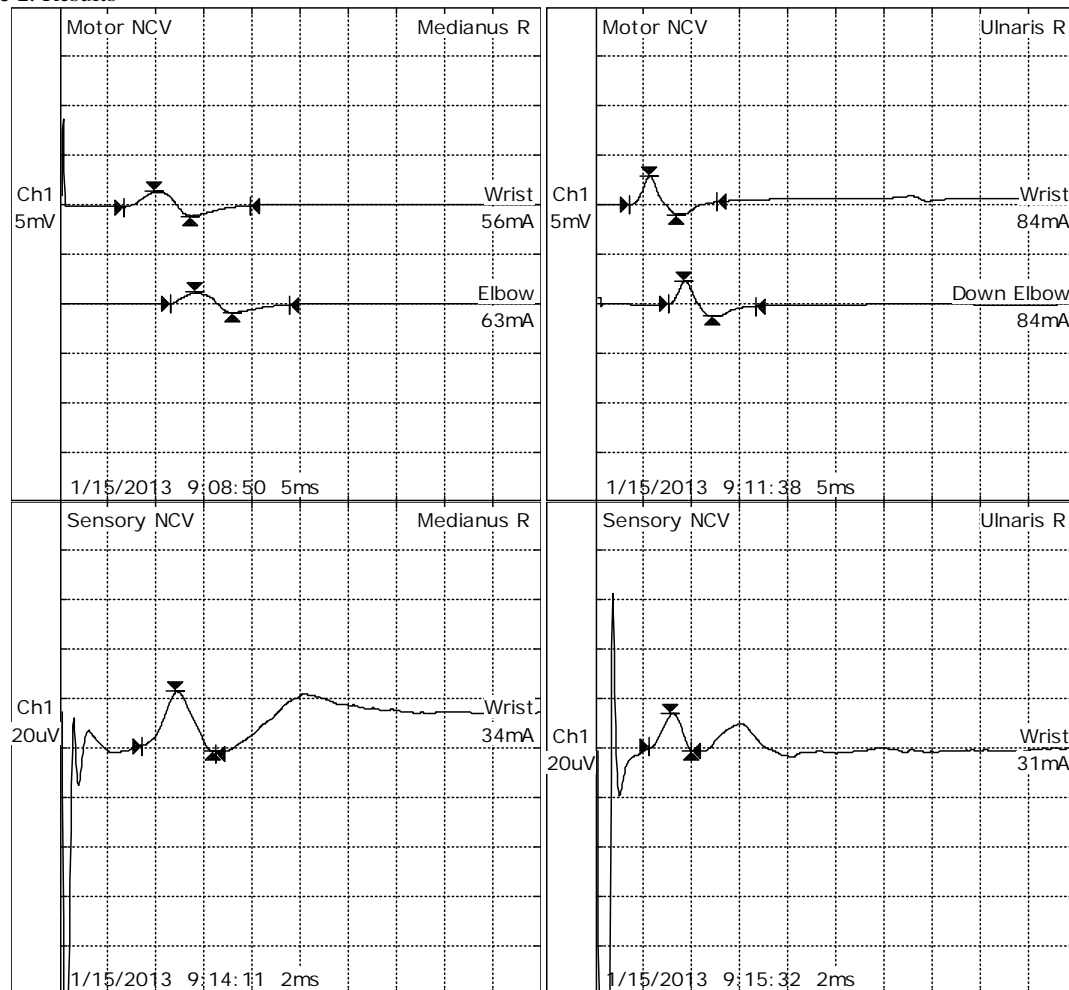
MNCV	Site/Segment	Latency	Amplitude	Duration	Area	Distance	NCV
		ms	mV	ms	mVms	mm	m/s
<b>Medianus R</b>	<b>Wrist-Abp</b>	6.6	1.7	13.2	9.3		
	<b>Elbow-Wrist</b>	11.5	1.2	12.4	7.8	195	39.9
<b>Ulnaris R</b>	<b>Wrist-ADM</b>	3.6	2.9	9.1	7.9		
	<b>Down Elbow-Wrist</b>	7.6	2.4	9.2	8.5	205	51.5
<b>Peroneus R</b>	<b>maleolla lat-EDB</b>	4.4	2.1	7.2	8.4		
	<b>fibulla-maleolla lat</b>	10.6	2.1	9.4	9.4	280	45.2
<b>Peroneus L</b>	<b>maleolla lat-EDB</b>	4.3	2.4	9.8	8.2		
	<b>fibulla-maleolla lat</b>	10.5	2.2	9.7	8.4	270	44.0

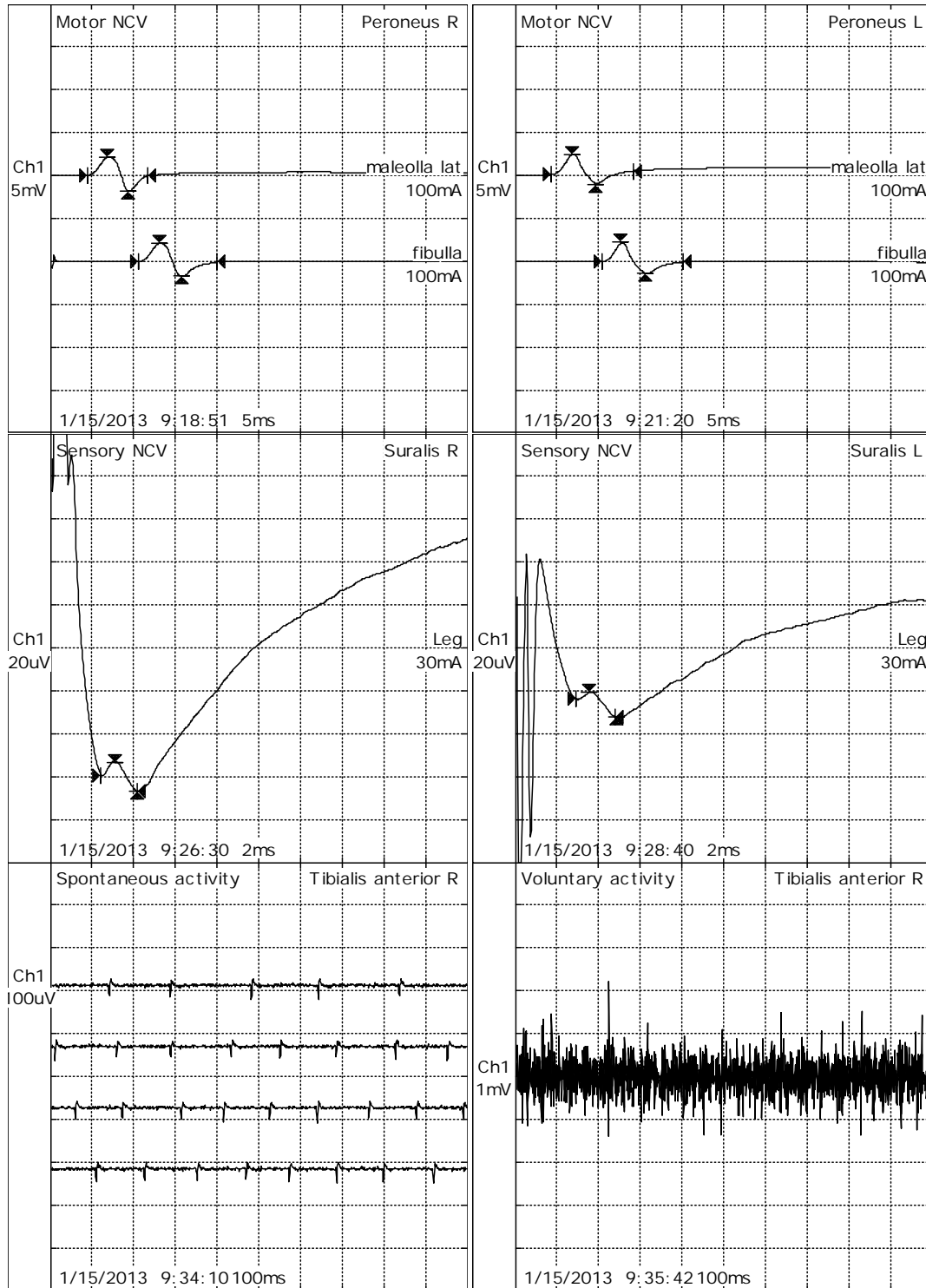
SNCV	Site/Segment	Latency	Amplitude	Duration	Area	Distance	NCV
		ms	uV	ms	uVms	mm	m/s
<b>Medianus R</b>	<b>Wrist-index finger</b>	3.4	22.7	3.1	24.2	150	43.9
<b>Ulnaris R</b>	<b>Wrist-V finger</b>	2.2	13.9	1.7	7.86	115	51.6
<b>Suralis R</b>	<b>Leg-Malleolus Lat</b>	2.4	6.31	1.7	104.4	100	41.5
<b>Suralis L</b>	<b>Leg-Malleolus Lat</b>	2.9	3.39	1.9	54.0	120	41.4

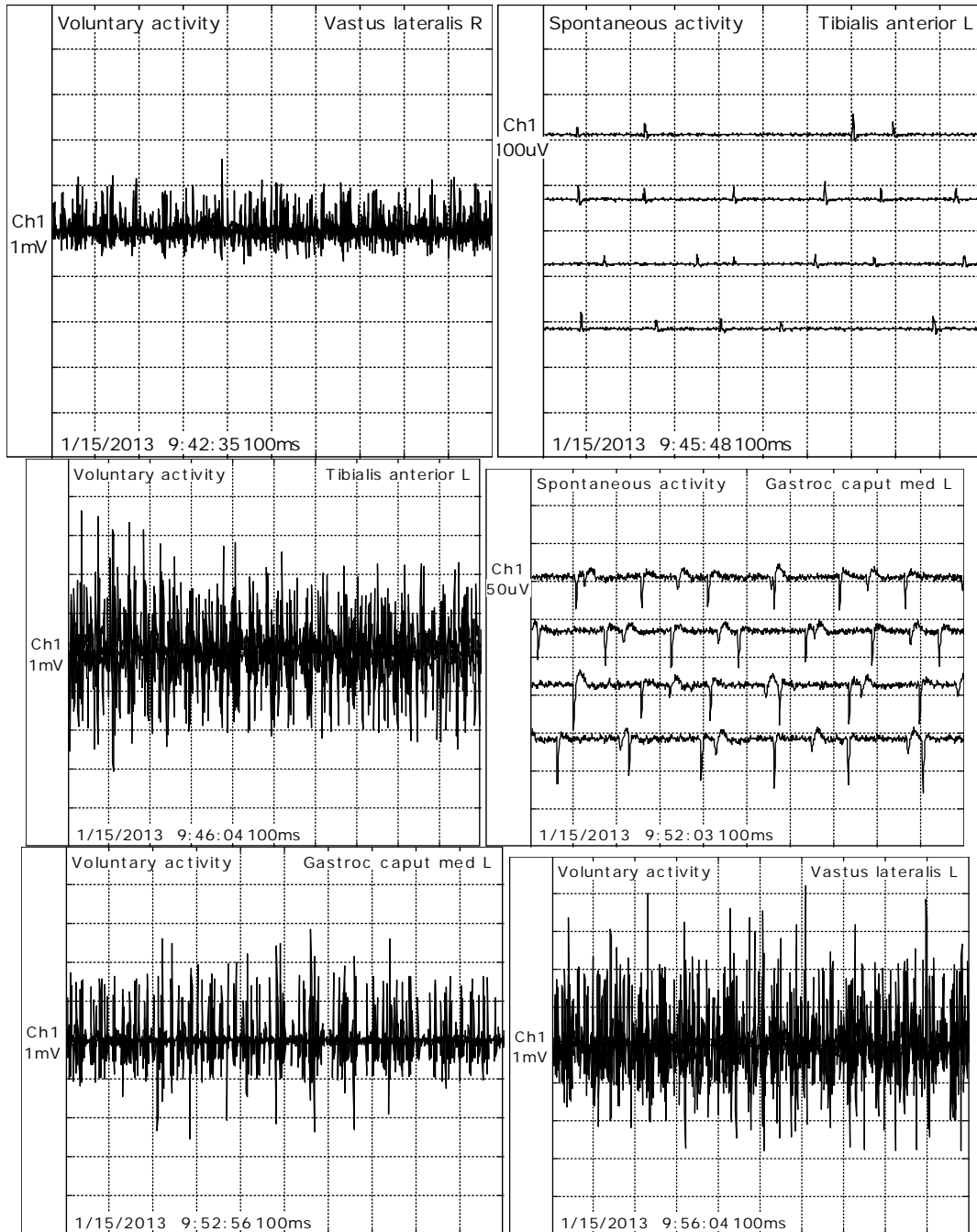
MUP	n°	Durate	Amplitude	Area	Phases	Turns	Rise time
		ms	uV	uVms			us
<b>Tibialis anterior R</b>	<b>1</b>	13.9	617.1	1600.0	3	3	2100.0
	<b>2</b>	11.1	454.2	1000.0	2	2	3100.0
	<b>3</b>	14.5	953.4	1500.0	6	8	1000.0
	<b>4</b>	11.4	410.7	1000.0	2	2	2200.0
	<b>5</b>	15.4	1900.0	3900.0	2	3	1300.0
<b>Mean values</b>		13.3	867.1	1800.0	(0% poly.)		
<b>Tibialis anterior L</b>	<b>1</b>	10.5	477.3	921.3	1	3	4300.0
	<b>2</b>	13.3	1800.0	2800.0	3	8	1400.0
	<b>3</b>	10.4	995.4	2000.0	4	6	1500.0
<b>Mean values</b>		11.4	1090.9	1907.1	(0% poly.)		
<b>Gastroc caput med L</b>	<b>1</b>	11.5	1200.0	2200.0	3	3	1500.0
	<b>2</b>	8.2	313.2	627.9	2	2	2000.0
	<b>3</b>	9.8	523.9	967.3	2	2	2000.0
<b>Mean values</b>		9.83	679.0	1265.1	(0% poly.)		
<b>Vastus lateralis L</b>	<b>1</b>	12.4	1000.0	2100.0	3	3	1300.0
<b>Mean values</b>		12.4	1000.0	2100.0	(0% poly.)		
<b>Vastus lateralis L</b>	<b>1</b>	13.1	1000.0	2100.0	3	3	1300.0
	<b>2</b>	14.7	3800.0	4400.0	8	15	568

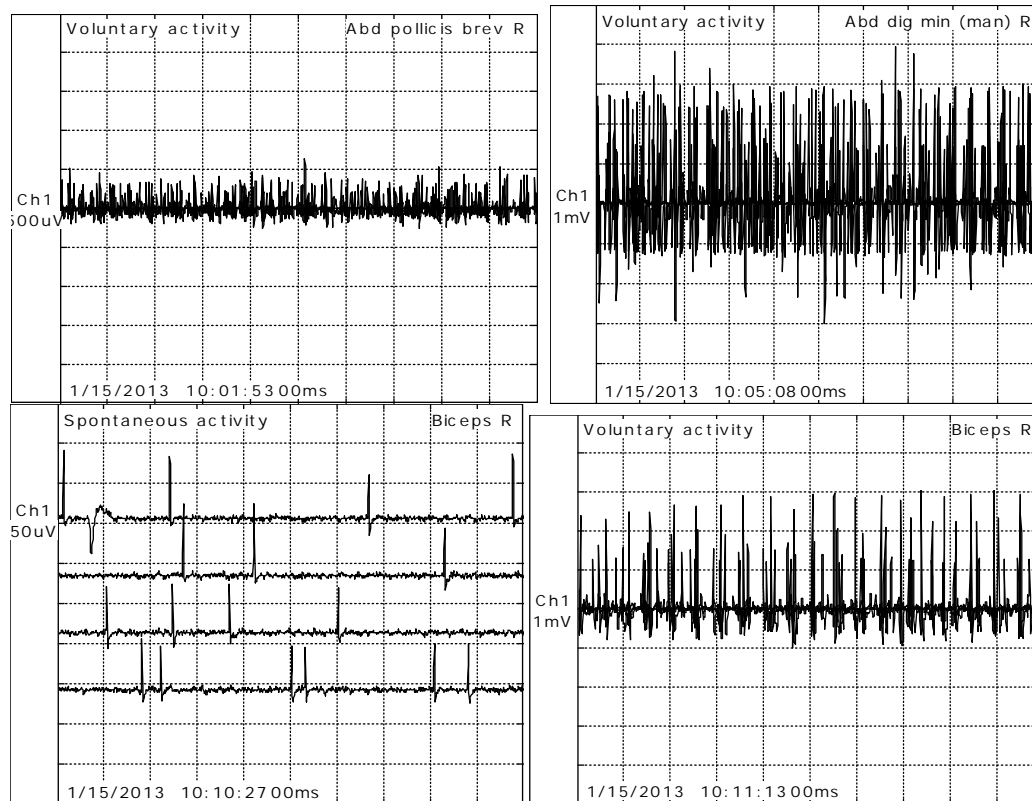
MUP	n°	Durate ms	Amplitu de uV	Area uVms	Phases	Turns	Rise time us
	3	9.3	630.0	940.7	2	2	1400.0
<b>Mean values</b>		12.4	1810.0	2480.2	(-1431655765% poly.)		
<b>Abd dig min (man) R</b>	1	9.5	2100.0	2600.0	3	3	1600.0
	2	19.1	3300.0	7700.0	4	6	1500.0
<b>Mean values</b>		14.3	2700.0	5150.0	(0% poly.)		
<b>Biceps R</b>	1	16.5	2200.0	5300.0	3	3	2300.0
	2	18.2	206.6	738.7	2	2	3600.0
<b>Mean values</b>		17.4	1203.3	3019.4	(0% poly.)		

Figure 1. Results









**VCM:**

Nerves median, ulnar dr, peronier bilateral – with amplitude CMAP decrease, VCM normal.

**VCS:**

Nerves median, ulnar dr, sural bilat – with amplitude SNAP and VCS normal.

**EMG with needle:**

At the level of muscle examined we observe pathological spontaneous activity (PSW ++, little fibrillation).

Recutare pattern poor. PUM with duration and amplitude increased.

We begin a neuromotor and physiologic rehabilitation. Rehabilitation programme objectives: induce of volutar motor activity; prevent wrong movement; prevent muscle retractures and joints diformities; decrease spasticity. Rehabilitation programme: we used physical programme for reduce pain, spasticity ALMEIDA (2012), ASHWORTH (2012), BALDINGER (2012) and also kinetic method for each objective. In each month we followed the evolution using specific scale assessment.

**Conclusions**

It is important if the symptoms are not clear and the results of immunology are not complete to not begin treatment for borreliosis and the interdisciplinary consult is necessary to complete the diagnosis. After antibiotic treatment we observe that clinical sign worst.

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