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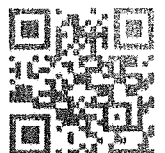


# 12<sup>TH</sup> INTERNATIONAL SOCIETY OF PHYSICAL & REHABILITATION MEDICINE (ISPRM) WORLD CONGRESS

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### ASSESSMENT OF NECK PAIN IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

**A. Yilmaz<sup>1</sup>, A. Ünal<sup>1</sup>, O. Telli Atalay<sup>1</sup>, F. Altug<sup>1</sup>**

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**A2.06 Musculoskeletal Conditions - Back Pain and Spine Disorders**

**ISPR8-1670**

**ASSESSMENT OF NECK PAIN IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE**

A. Yilmaz<sup>1</sup>, A. Ünal<sup>1</sup>, O. Telli Atalay<sup>1</sup>, F. Altug<sup>1</sup>

<sup>1</sup>Pamukkale University, School of Physical Therapy and Rehabilitation, Denizli, Turkey

**Introduction/Background**

Supplementary respiratory muscles such as upper part of the trapezium and scalenes are used extensively in order to facilitate ventilation in Chronic Obstructive Pulmonary Disease (COPD). These situations cause pain restricting by the upper body mobility and neck movements. This study was planned to investigate the presence of neck pain in individuals with COPD.

**Material and Method**

In this study, 30 patients (W: 5 / M: 25) were evaluated with COPD. The severity of pain was determined according to Visual analog scale (VAS). Spirometric measurements were used to determine the respiratory parameters. Neck Disability Index were used to for severity of neck disability level.

**Results**

Mean age of patients was  $69.93 \pm 9.46$  years. Mean of pain intensity was  $2.35 \pm 2.77$  and pain duration  $46.47 \pm 123.64$  weeks. The mean FEV1% of all patients was  $58.96 \pm 19.15$ , FVC% was  $72.73 \pm 25.73$  and FEV1 / FVC ratio was  $64.43 \pm 21.18$ . There was a positive correlation between pain intensity and FEV1 and FVC ( $r = 0.368$ ,  $p = 0.046$ ), ( $r = 0.382$ ,  $p = 0.037$ ). There was a positive mean moderate correlation between duration of pain and smoking and alcohol use ( $r = 0.652$ ,  $p = 0.005$  /  $r = 0.655$ ,  $p = 0.004$ ). The mean of Neck Disability Index was  $26.65 \pm 19.70$ . All patients have a mild disability level. We did not find a significant correlation between Neck Disability Index and spirometric parameters.

**Conclusion**

Individuals with COPD have neck pain. When these patients rehabilitate, musculoskeletal problems, such as neck pain should be considered.

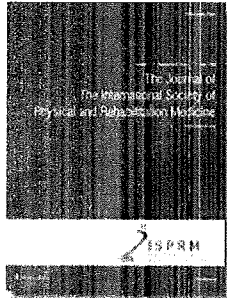
**Keywords**

neck pain, chronic obstructive pulmonary disease, neck disability level

*No conflict of interest*



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Volume 1 | Issue 5 (Supplement)  
Page Nos. 1-557

Online since Tuesday, July 10, 2018


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### EDITORIAL

-  **Why does the international society of physical and rehabilitation medicine need its own journal?** p. 1  
Jorge Lains  
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and L3-L4 levels. Most advanced degenerative changes were observed at L2-L3 (2.9±1.4). Correlation analysis between disk degeneration and spino-pelvic parameters found a significant relationship with thoraco-lumbar kyphosis at L2-L3 level (0.55). Correlation analysis between antero-posterior diameter of the spinal canal and the spino-pelvic parameters found a significant relationship with lumbar lordosis at T12-L1 (0.66) and L2-L3 (0.89) levels, and with thoraco-lumbar kyphosis at L1-L2 level (-0.55). **Conclusion:** Spinal stenosis and disk degeneration mainly involve the upper part of the lumbar spine in adult achondroplasia patients. Thoraco-lumbar kyphosis and lumbar lordosis are related with these processes. The findings may be of importance in rehabilitation and in early prevention of spinal stenosis in the course of achondroplasia.

**Keywords:** Adult achondroplasia, disk degeneration, lumbar spinal stenosis

**Disclosure of interest:** The authors did not declare any conflict of interest.

### ISPR8-1793

#### Physical fitness and chronic low back pain: A case-control study including 517 individuals

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**Introduction/Background:** Deconditioning syndrome in chronic low back pain is admitted. However, profil of physical fitness, on the basis of energy expenditure, is controversial. The goal of the study was to assess physical fitness in chronic low back pain patients using markers of energy expenditure. **Materials and Methods:** This was a case-control study. Patients with chronic low back pain and healthy age- and sex-matched controls underwent bicycle exercise test, up to muscle exhaustion. Recorded energy variables were: duration of exercise in seconds, maximal power (P max) in watts, percentage of age-predicted maximum heart rate (HR max) and metabolic equivalents (MET). Pain intensity using the 0-100-VAS, pain duration and functional limitation using the Quebec scale were also assessed in chronic low back pain patients. Relationship between energy variables and clinical parameters was investigated using the Spearman correlation coefficient. Results of both groups were compared using the Student *t* test. **Results:** 192 chronic low back pain patients (age 44±8, ratio M/F 106/86, pain intensity 47±19, pain duration 51±57 months, Quebec 39±16) and 325 healthy controls (44±8, ratio M/F 199/126) were included. Duration of exercise (-0.23), P max (-0.21), and MET (-0.29) were related with the Quebec score in chronic low back pain patients ( $P < 0.05$ ). There was no other relationship between energy variables and clinical parameters. Energy variables were not different in both groups as they were globally considered. However, chronic low back pain patients with highest functional limitation (the fourth quartile of the Quebec scores) had lower duration of exercise (349±134 vs. 431±189), lower P max (129±39 vs. 147±49), and lower MET (7±2 vs. 8±2) than healthy controls ( $P < 0.05$ ). **Conclusion:** Physical fitness was not altered in the entire chronic low back pain population. However, physical fitness appeared to be decreased in chronic low back pain patients with highest functional limitation.

**Keywords:** Chronic low back pain, physical fitness

**Disclosure of interest:** The authors did not declare any conflict of interest.

### ISPR8-2107

#### Investigating the effect of the orthotic treatment on sagittal plane pelvic parameters in adolescents with idiopathic scoliosis: Literature review

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**Introduction/Background:** Adolescent idiopathic scoliosis (AIS) is a three-dimensional deformity of the spine. Morphologic changes in AIS alter the orientation of the body in all three anatomic planes. These changes may alter the angular position of the spinopelvic and pelvic parameters. Cobb angle is the only key index used to predict the curve improvement of the patient with AIS wearing the corrective brace. The importance of the pelvic parameters is almost neglected, hence the study of these parameters as indexes in the other two planes can provide information about other aspects of brace treatments.

**Materials and Methods:** An Internet search for terms related to AIS, orthosis and brace treatments and sagittal pelvic parameters was performed in bibliographic databases. By summarizing the obtained publications, sagittal pelvic parameters and bracing treatments of AIS were described, and their information about their relation in sagittal plane with Cobb angle in the coronal plane were reported. **Results:** Pelvic Incidence (PI), Pelvic Tilt (PT) and Sacral Slope (SS) are the three main sagittal pelvic parameters. PI is specialized for each person but it is changed according to the age and spinopelvic deformities. Lumbar lordosis is related with sagittal pelvic parameters specially PI and SS. So, they can be used as sagittal plane indexes to predict the improvement procedure and treatments' outcome. **Conclusion:** Apparently there is a relationship between spino-pelvic parameters in the skeletal chain of body. Nevertheless, this relation is clear, there is not any index in the sagittal plane to refer to, and therapists are satisfied to the only index, Cobb angle, in the coronal plane. So, introducing another index in another plane besides Cobb angle in sagittal plane, considering the three dimensional aspect of AIS, can be very helpful to all the society which handling with.

**Keywords:** Adolescents with idiopathic scoliosis, orthotic treatment, sagittal plane pelvic parameters

**Disclosure of interest:** The authors did not declare any conflict of interest.

### ISPR8-1670

#### Assessment of neck pain in chronic obstructive pulmonary disease

A. Yilmaz, A. Ünal, O. Telli Atalay, F. Altug

Poster Abstracts

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**Introduction/Background:** Supplementary respiratory muscles such as upper part of the trapezium and scalenes are used extensively in order to facilitate ventilation in Chronic Obstructive Pulmonary Disease (COPD). These situations cause pain restricting by the upper body mobility and neck movements. This study was planned to investigate the presence of neck pain in individuals with COPD. **Materials and Methods:** In this study, 30 patients (W: 5 / M: 25) were evaluated with COPD. The severity of pain was determined according to Visual analog scale (VAS). Spirometric measurements were used to determine the respiratory parameters. Neck Disability Index were used to for severity of neck disability level. **Results:** Mean age of patients was  $69.93 \pm 9.46$  years. Mean of pain intensity was  $2.35 \pm 2.77$  and pain duration:  $46.47 \pm 123.64$  weeks. The mean FEV1% of all patients was  $58.96 \pm 19.15$ , FVC% was  $72.73 \pm 25.78$  and FEV1 / FVC ratio was  $64.43 \pm 21.18$ . There was a positive correlation between pain intensity and FEV1 and FVC ( $r = 0.368$ ,  $p = 0.046$ ), ( $r = 0.382$ ,  $p = 0.037$ ). There was a positive mean moderate correlation between duration of pain and smoking and alcohol use ( $r = 0.652$ ,  $p = 0.005$  /  $r = 0.655$ ,  $p = 0.004$ ). The mean of Neck Disability Index was  $26.65 \pm 19.70$ . All patients have a mild disability level. We did not find a significant correlation between Neck Disability Index and spirometric parameters. **Conclusion:** Individuals with COPD have neck pain. When these patients rehabilitate, musculoskeletal problems, such as neck pain should be considered.

**Keywords:** Chronic obstructive pulmonary disease, neck disability level, neck pain

**Disclosure of interest:** The authors did not declare any conflict of interest.

## A2.06 MUSCULOSKELETAL CONDITIONS - BACK PAIN AND SPINE DISORDERS

### ISPR8-2640

#### Characteristics of the rigid spine syndrome due to *sepn1*-myopathy: A long-term follow-up series of 21 patients

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**Introduction/Background:** *SEPN1* related myopathy is a recessive autosomal disorder caused by *SEPN1* gene mutations. Patients present homogeneous clinical features, in particular a striking cervico-axial hypotonia and a weakness associated with poor head control.

A progressive spinal stiffness and severe restrictive respiratory insufficiency with diaphragmatic failure is observed in the course of the first or second decade. They are described as a "rigid spine syndrome" (RSMD1). The aim of this study was to describe the course of the spinal deformity and the clinical and respiratory complications. **Materials and Methods:** We reviewed retrospectively the medical charts of 21 patients with mutations in the *SEPN1* gene. Genetic, clinical, radiological (X-rays) and respiratory studies (spirometry) were reviewed and analyzed. **Results:** Mean age at last follow-up was 23 years (4 – 55). All patients except one, showed poor weight and height for their age, with a mean body mass index of 13,3 kg/m<sup>2</sup> (8 – 25). Mechanical ventilation was required in 19 patients (age range 4-15), usually only nocturnally, but in three cases a tracheostomy was performed. Four patients lost walking at a mean age of 28 (12-44). Clinical and radiological examinations were available for 15. Cervical spine stiffness was present in 65% of patients (mean chin-sternum distance in maximal cervical flexion of 7 cm). Scoliosis was observed in 12 (7 spinal translation; 6 pelvic obliquity). Clinically, a thoracic lordosis was observed in 87% of patients, and X-ray showed a flat thoracic spine. Management of the spinal deformity was focused mainly in axial stretching and antilordotic bracing. Two cases developed a severe progressive scoliosis before puberty. Spinal surgery was performed in 15 patients. **Conclusion:** *SEPN1*-related myopathy should be suspected in children developing a characteristic stiff and lordotic thoracic spinal deformity associated with a cervical rigidity. Due to constant respiratory complications, these patients require specialized multidisciplinary management.

**Keywords:** Rigid spine syndrome, *SEPN1*-related myopathy, thoracic lordosis

**Disclosure of interest:** The authors did not declare any conflict of interest.

### ISPR8-1439

#### Efficacy of ultrasound-guided injections of incobotulinumtoxinA in the management of piriformis muscle syndrome

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**Introduction/Background:** Piriformis muscle syndrome is a painful disorder characterized by buttock and hip pain usually due to sciatic nerve compression. Some previous works have studied the efficacy and safety of botulinum toxin in the management of piriformis muscle syndrome. Our objectives are analyze the efficacy of ultrasound-guided injections of incobotulinumtoxinA (Xeomin®) in the reduction of pain in piriformis muscle syndrome, and study if there are differences in the efficacy related with the dilution volume. **Materials and Methods:** A retrospective cohort including patients admitted to Rehabilitation Department from January 1<sup>st</sup> 2015 to June 30<sup>th</sup> 2016 was analyzed. 58 patients who fulfilled the required criteria were registered. In all the included patients, Visual Analogical Scale (VAS) was measured before performing an ultrasound-guided injection of 100 Units of incobotulinumtoxinA in piriformis muscle, and 6

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# ASSESSMENT OF NECK PAIN IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE



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## INTRODUCTION

Supplementary respiratory muscles such as upper part of the trapezium and scalenes are used extensively in order to facilitate ventilation in Chronic Obstructive Pulmonary Disease (COPD).

These situations cause pain restricting by the upper body mobility and neck movements.

## OBJECTIVE

This study was planned to investigate the presence of neck pain in individuals with COPD.

## METHODS

In this study, 30 patients with COPD (mean age:  $69.93 \pm 9.46$  yrs., M:25/ F:5) were evaluated.

Spirometric measurements were used to determine the respiratory parameters.

Pain intensity was determined according to Visual Analog Scale (VAS).

Neck Disability Index (NDI) were used to determine disability level regarding neck.

Table 1. Demographic and clinical data of patients

Variables	n	%
<b>Gender</b>		
Male	5	16.7
Female	25	83.3
<b>Smoking</b>		
Active smoker	2	6.7
Ex-smoker	21	70.
Non-smoker	7	23.3
<b>COPD</b>		
Grade I	5	16.7
Grade II	13	43.3
Grade III	10	33.3
Grade IV	2	6.7

## RESULTS

Table 2. Neck pain and spirometric measurements of patients

Variables	Mean $\pm$ SD	
Spirometric measurements	FVC %	72.73 $\pm$ 25.78
	FEV1 %	58.96 $\pm$ 19.15
	FEF 25/75 %	32.23 $\pm$ 15.78
	FEV1/FVC	64.43 $\pm$ 11.18
Chest circumference measurements	Axillar (max. ins-exp)(cm)	3.29 $\pm$ 0.99
	Epigastric (max. ins-exp) (cm)	3.12 $\pm$ 1.35
	Subcostal (max. ins-eksp) (cm)	3.47 $\pm$ 1.74
VAS	2.35 $\pm$ 2.77	
Pain duration(mths)	11.61 $\pm$ 30.91	
NDI score	12.63 $\pm$ 9.64	
NDI(%)	26.65 $\pm$ 19.70	

max. ins: maximum inspiration, max. exp: maximum expiration, NDI: Neck Disability Index

Table 3. Correlation of pain duration and intensity, neck disability level and spirometric parameters

Variables		FVC	FEV1
Pain duration	r	0,782	0,741
	p	0,072	0,087
VAS	r	0,382	0,368
	p	<b>0,046*</b>	<b>0,037*</b>
NDI	r	0,209	0,233
	p	0,236	0,224

\*Pearson correlation analysis

There was a positive moderate correlation between pain duration and smoking ( $r=0.652$ ,  $p=0.005$ ) and alcohol use ( $r=0.655$ ,  $p=0.004$ ).

All patients have a mild disability level.

We did not find a significant correlation between Neck Disability Index and spirometric parameters.

## CONCLUSION

Individuals with COPD have neck pain. When these patients rehabilitate, musculoskeletal problems, such as neck pain should be considered.

## REFERENCES

- 1-HajGhanbari B, et al.Pain in people with chronic obstructive pulmonary disease (COPD). *Respiratory medicine* 2012, 106(7): 998-1005.
- 2- Lee AL., et al. Pain and its clinical associations in individuals with COPD: a systematic review. *CHEST Journal* 2015, 147(5): 1246-1258.
- 3-Chen Yi-Wen, et al. Comorbidities that cause pain and the contributors to pain in individuals with chronic obstructive pulmonary disease. *Archives of physical medicine and rehabilitation*, 2017, 98(8): 1535-1543.

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