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Evaluation of pain syndromes in war veterans with spinal cord injury

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ABSTRACT

Chronic pain is one of the most important problems in patients with spinal cord injury. The pain may occur for unknown reasons, but in most cases it is due to damage to the nerves due to spinal cord injury or musculoskeletal problems. The aim of this study was to investigate the epidemiology of pain syndromes in veterans of war and relationship between age, gender and severity of spinal cord injury with treatment response in such people. This was is a descriptive study on spinal cord injury victims in Yazd and Isfahan from May to November 2015. First, a questionnaire was prepared in which information such as age, duration of disease, pain, level of injury and the type of drug were included. The patients were examined individually to determine the level of damage properly. Finally, by statistical analysis of data obtained, their relationship was examined. In this study, 50 people with injured spinal cord in the provinces of Yazd and Isfahan (18 out of Yazd Province and 32 from the province) were evaluated, of which 13 complexities were in the cervical level (neck), 27 in the thoracic region and 10 in the lumbar region. The lowest age was 39 years and oldest age was 50 years. Statistical analysis of the relationship between pain and level of spinal cord injury showed that no significant relationship between severity of pain and level of spinal cord injury. Statistical analysis of the relationship between severity of pain and age suggested that older patients had complained of less pain than patients with lower ages. It seems that due to the problems facing patients with spinal defects, especially disabled veterans, comprehensive program must be carried out by relevant institutions to facilitate the treatment of these people and increase the quality of their life.

Keywords: spinal cord, veteran, pain, thoracic, lumbar.

INTRODUCTION

Chronic pain is one of the most important problems in patients with spinal cord injury. It usually starts during the first six months after a spinal cord injury and can double the disability. Pain can be felt in parts of the body that have natural sensory ability and in numb parts. The pain is very real and has negative effect on people's lives and reduces their quality of life.

Such pains are found in most patients with spinal cord injury, and may take years and months. The pain may occur for unknown reasons, but in most cases it is due to nerve damage due to spinal cord injury or musculoskeletal problems. The pain may rarely be eradicated but can be managed. The pain can cause psychological problems such as depression, anger and stress in people or cause them to worsen.
Although there is no commonly accepted rule for the division of spinal cord injury pain, but the pain often takes place in the following division: a) central pain, b) radicular pain, c) and visceral pain, d) musculoskeletal pain

Central pain is one that occurs below the damaged area and takes the form of burning and cut, feeling cold, or radiating often in the extremities (1). Radicular pain usually occurs in the damaged area and takes the wave or sudden form at rest.

Visceral pain is felt in the pelvic or abdominal area in form of discomfort felt or at the end of the organs and extremities. Visceral pain may be due to passing of a signal through autonomic nervous system. Amitriptyline and carbamazepine combined effectively reduce central pain affect. Intrathecal morphine or baclofen are used for the treatment of pain. Intrathecal injection of morphine and its combination with clonidine can also be successful. Spinal cord stimulation has generally a role in pain. People who suffer from end zone radicular pain may benefit from cutting posterior cord of end zone. But the usefulness of this method has yet to be established (2) (3) (4).

Since no study has been conducted so far on people with spiral cord injury especially war veterans of Epidemiology of pain syndromes of war veterans and relationship between age, gender and severity of spinal cord injury with treatment response in such people.

MATERIALS AND METHODS

This study is a descriptive study on spinal cord injury victims of Yazd and Isfahan from May to November 2015. The final questionnaire was prepared in which information such as age, duration of disease, pain, level of injury and the type of drug were considered. The patients were examined individually to determine the level of damage properly.

It should be noted there were a total of 23 veterans of war with spinal cord injury in Yazd, but we could access only 18 of them and to raise accuracy of the results and to reduce the error, Isfahan province that has very similar climatic conditions especially in terms of type of formation and location of injury was also studied. From the studied people, was 32 veterans were selected and the results were studied as a single study. The size of the pain was determined using VAS (Visual Analog Scale). The patients were asked to rate their pain intensity according to scale. Zero represented the least pain and the case where patients had no significant pain. Ten showed most intense pain, this rate was assigned when the patient was bedridden and not even able to do any personal work. To calculate and include in the table, the low pain was assigned the score of 1 to 3, 4 to 6 to moderate pain and 7 to 10 to severe pain, and in cases where the term low to medium was used, frequency of 1 to 6 was considered. Also in terms of pain, this variable was divided according to the history that was obtained from the patients to four types of central, radicular, visceral and musculoskeletal pain. In terms of area of injury, patients were divided to three groups: thoracic and lumbar and cervical.

RESULTS AND DISCUSSION

From May to November 2015, 50 of the war veterans with injured spinal cord in the provinces of Yazd and Isfahan (18 out of Yazd Province and 32 from the province) were studied, of which 13 complexities were in the cervical level (neck), 27 in the thoracic region and 10 in the lumbar region. The lowest age was 39 years and maximum was 50 years.

Table1. Determining the frequency of pain syndromes

Various types of pain	size	Percent
Central	13	26
Musculoskeletal	12	24
Radicular	10	20
painless	9	18
Visceral	6	12
Total	50	100

Pain existed in 41% of 50 war veterans with spinal cord injured. The prevalence of pain syndromes is listed in Table. In this table, central pain, radicular pain and visceral pain and musculoskeletal pain were 26%, 20%, 12% and 24%, respectively.

Table 2. Determining the severity of each type of pain syndrome

Various types of pain syndromes	Intensity of pain syndromes without medication			Total
	Low	Moderate	Intense	
Radicular	2	4	4	10
Visceral	0	0	6	6
Musculoskeletal	8	4	0	12
Central	2	3	0	5

Table 2 shows the intensity of pain syndrome in victims of spinal cord injury. In this table, the most severe pain frequency was visceral pain whereas the least was musculoskeletal pain. Statistical analysis of the relationship between pain and level of spinal cord injury showed that no significant relationship between pain and level of spinal cord injury (Table 3).

Table3. Determining the pain severity based on spinal cord injury level

Pain severity	Level of injury			Total
	Lumbar	Thoracic	Cervical	
Mild to Moderate	3(30%)	13(48.1%)	7(53.8%)	23(46%)
Severe	6(60%)	9(33.3%)	3(23.1%)	18(36%)
Painless	**1(10%)**	**5(18.5%)**	**3(23.1%)**	**9(18%)**
Total	**10(100%)**	**27(100%)**	**13(100%)**	**50(100%)**

P value= 0.07

Statistical analysis of the relationship between pain and age (Table 4) suggested that older patients complained of less pain than patients with lower ages (P value=0.035).

Table4. Determining the pain severity based on age

Pain severity	**>45**	**<45**	**Total**
Mild to Moderate	10(71.4%)	13(36.1)	23(46%)
Severe	3(21.4%)	15(41.7%)	18(36%)
Painless	1(7.2%)	8(22.2%)	9(18%)
Total	14(100%)	36(100%)	50(100%)

P value= 0.035

DISCUSSION AND CONCLUSION

The study was conducted in Yazd and Isfahan on 50 veterans with spinal cord injury who had at least 18 years past their injury. In these patients, 41 of 50 patients complained of various types of pain (82%). These results were almost consistent with the results of a study conducted in Sydney in April 2002 to determine the prevalence and severity of pain syndromes with follow up of about 5 years, in which this figure is about 83 percent. In that study, the most intense pain was visceral pain. Chronic pain after spinal cord injury has been assessed in several studies (5).

In a study in 2012 by Taylor et al. on post spinal cord injury neuropathic pain in a hospital in Spain, 26 patients with chronic pain after spinal cord injury complications were evaluated. Inception of discomfort due to pain was separately categorized. However, 6 months past such pains, they had deal with such elements as intensity of pain, interference with life and duration of pain. The results of this study suggest that pain management strategies should be considered, and be associated with the pain and discomfort and be used immediately after the injury (6). In consistence with the results of the said study, our study showed that quality of life of patients was conversely related to the intensity of pain.

Dijkers et al. carried out a study to investigate the prevalence of chronic pain after traumatic spinal cord injury in a systematic study. This study is the most comprehensive study in this area. In this study, 42 researches conducted in different countries and continents were considered, which reported frequency of pain as 26-96%. Thus, as seen, the reported pain intensities significantly varied. The reported rate does not seem to be related to study quality. The results of these studies have shown that high existed in the reports of post traumatic pain after spinal cord injury (7). Another comprehensive study in 2014 confirmed the results of this study (8).

In a comprehensive and systematic study in the year 2015, Van Gorp et al. examined a series of studies related to the frequency of post traumatic pain following a spinal cord injury. Pain after spinal cord injury was found to be very common. In this study, 82 studies from around the world from Pubmed and ISI citation databases were collected and compared. There were many heterogeneous studies among them. Their results showed that pain after spinal cord

injury related to the length and severity of spinal cord injury and depression resulting from it. Also errors occurred during the study were associated with the primary objective of the study, intended definition of pain and the use of retrospective information (9).

Our study confirms the studies that have expressed pain prevalence at over 70%. The difference between pain frequency reports in patients may be related to different statistical populations and measure of pain in these individuals.

In this study, veterans of war had other pains in addition to the defined pains, which didn't fall in the used categorization. It seems that such pains and many pains that didn't fall in our categorization had psychological origins. They mentioned many instances of pain that intensified with their stresses and social problems. It seems that given the problems facing patients with spinal defects, especially disabled veterans, comprehensive program must be carried out by relevant institutions to facilitate the treatment of these people and increase the quality of their life.

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