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Characteristics of cervical myofascial pain in medical students

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Abstract

Background: Cervical myofascial pain or neck pain is in the fourth most disease that causes disability after back pain, depression, and other musculoskeletal diseases. Cervical myofascial pain is characterized by pain originating from a trigger point located in the skeletal muscle, commonly referred as myofascial trigger points (MTrPs).

Methods: An observational study with a cross-sectional design, conducted on 3 to 9 of December 2018 with research subjects were medical students at Udayana University who undergoing 5th and 6th year in clinical clerkship at Sanglah General Hospital Denpasar. The data was taken using Google Form which was filled in online by the subject and then analyzed using SPSS version 21.

Results: From 307 respondents, 62.2% stated experiencing neck pain (196 respondents) with the majority of women 65.4%, the duration of neck pain occurred for <24 hours with the most frequent frequency at least once per month (46.1%), and appeared most often at night (39.8%) and occurs after night shift in 106 subjects (55.5%). The pain was said getting worse by activity in 102 subjects (52.4%) and getting better when resting in 185 subjects (96.9%). Most of the subjects did not use pain relievers to treat neck pain experienced (84.3%). In subjects who use painkillers, Paracetamol is the most often drug of choice to relieve pain (11%). For non-pharmacological treatment, 53.4% of respondents chose to rest or sleep.

Conclusion: Most of the respondents who were clerkship reported experiencing neck pain at least once a month and often felt after a night shift. Respondents who reported neck pain were mostly women.

Keywords: myofascial, pain, characteristics, neck

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INTRODUCTION

Myofascial pain syndrome is a condition of both acute and chronic pain from muscles or fascia that will affect sensory, motoric, or autonomic. Cervical myofascial pain or neck pain is a condition that is a major cause of disability throughout the world. The incidence of neck pain in developing countries is quite high, with a prevalence of 7.6% (varying from 5.9% - 22.2%).

According to a study conducted by the Global Burden of Disease in 2010, in the United States, neck pain is ranked fourth in the disease that causes disability after back pain, depression and other musculoskeletal diseases.[1] Myofascial cervical pain is characterized by pain originating from one point triggers located in skeletal muscle, commonly referred to as myofascial trigger points (MTrPs). The trigger point is described by a small area, palpable hypersensitivity which can cause pain that spreads with emphasis.[2]

Neck pain can reduce the quality of life of sufferers. Neck pain is associated with complaints of other headaches such as migraines and tension-type headaches. In addition, neck pain itself can cause changes in the psychological state of patients and cause stress, anxiety, lack of sleep, and anger. This will greatly delay the productivity of sufferers.[3,4]

Medical student who is undergoing the clinical stage of their teaching period at the police faculty, many of whom may experience neck pain due to their routine with a high-stress load such as long shift, assignments, scientific assignments, and preparation for examinations at each rotation they had.

This study aims to describe the proportion and characteristics of neck pain in students of the medical clinic phase of the Udayana Faculty who are currently undergoing clerkship at the Sanglah General Hospital, Denpasar.

PATIENTS AND METHOD

This study is an observational study with a cross-sectional design in which data collection was conducted on 3 to 9 of December 2018. The inclusion criteria of this study were medical students of Udayana University who undergoing 5th and 6th year in clinical clerkship at Sanglah General Hospital Denpasar and agreed with research informed

consent, while exclusion criteria were not willing to fill out the form. The method of data collection was done using a questionnaire distributed with Google Form and filled out by the subject online. The results of the study were then analyzed descriptively using program SPSS version 21.

RESULTS

During the period of study on December 3 – 8 2018, there are 307 (57%) of clerks who become the samples of the study and have confirmed to participate in this study, from a total of 538 clerks who have been given the questionnaire. The mean of the samples' age is 23.29±0.78 years old. Table 1. showed that the subjects' characteristic based on gender with results of 187 females (60.9%) and 120 males (39.1%). On the other hand, based on the batch of the clerks, the data showed that 190 samples came from batch of 2013 (61.9%) and 117 samples came from batch of 2014 (38.1%).

Table 1 explained current clerkship rotation that are assigned in RSUP Sanglah that consist of 43 people in Pediatric department (14%), 19 people in Anesthesiology department (6.2%),

Table 1 Subject Characteristics

Variable(s)	Total
Sex	
Man	120 (39.1%)
Woman	187 (60.9%)
Years	
5th	190 (61.9%)
6th	117 (38.1%)
Clerkship rotation	
Pediatric	43 (14%)
Anesthesiology	19 (6.2%)
Forensic	7 (2.3%)
Community Health	11 (3.6%)
Surgery	40 (13%)
Cardiology	3 (1%)
Dermatology	6 (2%)
Ophthalmology	6 (2%)
Neurology	14 (4.6%)
Obstetric	71 (23.1%)
Internal med	55 (17.9%)
Psychiatric	15 (4.9%)
Radiology	8 (2.6%)
ENT	9 (2.9%)

ENT= ear, nose, and throat

Table 2 Pain Characteristics

Variable(s)	Total
Cervical Pain	
Yes	191 (62.2%)
No	116 (37.8%)
Sex	
Man	66 (34.6%)
Woman	125 (65.4%)
Years	
5th	122 (63.9%)
6th	69 (36.1%)
Duration of pain	
< 24 hours	178 (93.2%)
> 24 hours	13 (6.8%)
Frequency of pain	
Everyday	8 (4.2%)
Once a week	54 (28.3%)
Once a month	88 (46.1%)
Once a year	41 (21.5%
Mostly Occur	
Morning	51 (26.7%)
Afternoon	64 (33.5%)
Night	76 (39.8%)
Worsen by activity	
Yes	102 (52.4%)
No	89 (46.6%)
Relieve by rest	
Yes	185 (96.9%)
No	6 (3.1%)
Pain altered daily activity	
Yes	9 (4.7%)
No	182 (95.3%)
Pain after night shift	
Yes	62 (32.5%)
No	129 (67.5%)
Pain when approaching exam	
Yes	34 (17.8%)
No	157 (82.2%)
Pain with tense muscles	
Yes	160 (83.8%)
No	31 (16.2%)
Pain with stiff neck	
Yes	67 (35.1%)
No	124 (64.9%)

Table 2 ***Continue***

Variable(s)	Total
Radiating pain	
Yes	29 (15.2%)
No	162 (84.8%)
Pain with headache	
Yes	73 (38.2%)
No	118 (61.8%)
NPRS (mean ± SD (range)); 2.15 ± 2.0 (0 – 9)	
Mild pain (≤5)	168 (88%)
Moderate pain (6 - 7)	21 (11%)
Severe pain (≥8)	2 (1%)

NPRS= numeric pain rating scale

Tabel 3 Pain Management

Variabel(s)	Total
Pain relieved by drug	
Yes	30 (15.7%)
No	161 (84.3%)
Drug of choice	
Paracetamol	21 (11%)
Ibuprofen	5 (2.6%)
Mefenamic acid	2 (1%)
Etc	2 (1%)
Non Pharmacological relieved	
Rest	102 (53.4%)
Stretching	16 (8.4%)
Massage	18 (9.4%)
Using oil	7 (3.7%)
Warm compress	2 (1%)
Etc	7 (3.7%)

7 people in Forensic department (2.3%), 11 people in Community Health department (3.6%), 40 people in Surgical department, 3 people in Cardiology department (1%), with each 6 people from Dermatology and Ophthalmology departments (2%), 14 people in Neurology department, 71 people in Obstetric and Gynecology department (23.1%), 55 people in Internal Medicine department (17.9%), 15 people in Psychiatric department (4.9%), 8 people in Radiology (2.6%), and 9 people in ENT department (2.9%).

Table 2 explained the characteristics of cervical pain that occurred in the subjects of the study. In this study, from 307 total of the subjects, 191 people experienced cervical pain (62.6%) and 116 people did not experience cervical pain (37.8%). Based on gender, the result is 66 males experienced cervical pain (34.6%) and 125 females experience cervical pain (65.4%). In the clerks' batch, the result showed that 122 people came from the 6th year (63.9%) and 69 people came from the 5th year (36.1%) that experienced cervical pain. Meanwhile, based on the duration of cervical pain, the study found that 178 people experienced < 24 hours (93.2%) and 13 people experienced > 24 hours (6.8%). Based on the frequency, the study showed 8 people experienced cervical pain every day (4.2%), 54 people experienced cervical pain minimum once a week (28.3%), 88 people experienced cervical minimum once a month (46.1%), and 41 people experienced cervical pain once a year (21.5%). In this study, 51 people confessed that pain often occurs in the morning (26.7%), 64 people experienced pain in the afternoon (33.5%), and 76 people confessed that pain often occurs at night (39.8%).

Table 2 also showed other characteristic of cervical pain, such as the influence of activities and resting towards cervical pain that are experienced by the subjects of the study, as much as 102 people confessed that activity worsen the cervical pain that they experienced (53.4%) and 89 people confessed that activity didn't make the cervical pain worse (46.6%). Meanwhile, the influence of resting towards cervical pain that was experienced by 185 people, resting helped lessen the cervical pain (96.9%) and only 6 people felt that resting didn't make the pain any better (3.1%). Besides that, in Table 2 it is explained that the activities is disturbing because of the pain, 9 people confessed that the pain very much disturb their activities (4.7%), 96 people confessed that the pain slightly disturb their activities (50.3%), and 86 people confessed that the pain didn't disturb their activities (45%).

For the occurrence of pain, 62 people confessed that the pain occurred after the night shift (32.5%), 106 people confessed that the pain sometimes occurred after the night shift (55.5%), and 23 people confessed that the pain didn't occur after the night shift (12%). Besides that, 34 people confessed that the pain occurred before the exam (17.8%), 95 people confessed that the pain occurred sometimes before the exam (49.7%), and 62 people confessed that the pain didn't occur before the exam (32.5%). Meanwhile for the other complains that accompanies the cervical pain, 160 people confessed that they experienced the muscle stiffness (83.8%) and 31 people didn't experience the muscle stiffness (16.2%). 67 people confessed that they experienced the stiff neck (35.1%) and 124 people confessed that they didn't experience the stiff neck (64.9%). 29 people confessed that they experienced radiating pain (15.2%) and 162 people didn't experience the radiating pain (84.8%).

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73 people confessed that they experienced dizziness or headache (38.2%) and 118 people did not confess that they did not experience dizziness or headache (61.8%). For the pain scale, 168 people confessed that they experienced a slight pain (88%), 21 people confessed that they experienced a moderate pain (11%), and 2 people confessed that they experienced severe pain (1%).

From 191 samples that experienced cervical pain, 30 people used analgesic drugs (15.7%), and 161 people did not (84.3%). Analgetic drugs that are often used are Paracetamol with the result of 21 people used it (11%), then Ibuprofen with 5 people (2.6%), Mefenamic acid with 2 people (1%), with other answers of 2 people (1%). On the other hand, the result for non-pharmacology treatments are 102 people chose to rest/sleep (53.4%), 16 people chose to stretch (8.4%), 18 people chose to be massaged (9.4%), 7 people chose to use medicated patch/traditional oil (3.7%), 2 people chose warm compress (1%), and 7 people chose others (3.7%) (table 3).

The bivariate analysis that connects between gender and cervical pain shows significant results (p=0.037) with females reporting pain 4.3 times more often than males. NPRS mean score Difference analysis between male and female groups show an indifferent result (p=0.64, 95% CI: -0.27-0.24). Chi-square analysis between cervical pain and pain that "occurs after night shift" and "before tests" shows significant results. (P<0.0001 dan p<0.0001).

DISCUSSION

From 307 clerks who become our samples of study, around 191 clerks experienced a cervical pain (62.2%) and based on gender the result showed that the majority who experienced cervical pain was female (125 subjects; 65.4%). This finding showed a similar result with Cote, Hall, McIntosh, and Alleyne et al. study in 2015 and other studies from various countries.5 This is because the difference of musculoskeletal system between male and female, whereas females have smaller posture and weaker muscle strength compared to males. Besides that, females and males have a different physiological mechanism about the pain perception that can cause lack of attention about cervical pain in males. As a result, males rarely report their complains.[6,7,8]

In this study, there were 168 (87.96%) who suffered neck pain during night shift. No research was found, but in a study conducted by Matre D, Knardahl S, Nilsen KB, in 2017, conducted a study on 53 nurses after work at night where sensitivity was found to increase nurses.7 Poor sleep quality can cause Low Back Pain (LBP) in healthy workers and increase the intensity of pain in LBP previously. In a study conducted in Japan, which discusses LBP which calculates the number of sleep where out of 5008 participants who added LBP, 2062 (44%) were sleeping less than 6 hours.[10]

The clerks were medical student who is undergoing the clinical stage of his study period at the medical faculty of medicine, many of them were experiencing neck pain due to a fairly dense routine and high stress such as night shift, scientific assignments, and preparation for examinations at each rotation. There's none similar research was found, but in a study conducted by Alshagga MA, et al., In 2010 was conducting research on medical faculty students in Selangor, Malaysia, where students in clinical stage were found to be twice as likely to experience musculoskeletal pain as students in the pre-clinical stage.[11] In another study conducted at medical students at King Saud University and King Saud Bin Abdulaziz University in Saudi Arabia by Algarni AD, et al., in 2014 a significant association was found between musculoskeletal pain and medical students undergoing clinical stages.[12]

CONCLUSION

The results of this study show that from 307 respondents, most have stated that they have had cervical pain (196 people / 62.2%), with the majority being female (65.4%), and coming from batch of 2013 (63.9%). Nearly all respondents (93.2%) stated that the duration of cervical pain they experienced happens for less than 24 hours, with the most common frequency that is once a month (46.1%) and most often happens at night (39.8%). Pain is said to worsen with activity for 102 respondents (52.4%) and gets better when resting for 185 respondents (96.8%). Respondents mostly did not use any medication to reduce cervical pain (84.3%). For respondents who did use pain reducing medication, paracetamol was the most used drug (11%). And for non-pharmacological treatment, 53.4% of respondents chose rest or sleep. 96 respondents (50.3%) stated that their pain slightly affected their activity. Pain occurs after going through night shift for 106 respondents (55.5%) and occurs before tests for 95 respondents (49.7%). Pain that happens with stiff muscle (83.8%), without neck stiffness (64.9%), without radiating pain (84.8%), and without dizziness or headache (61.8%), with most respondents (168/88%) stating that they experienced slight pain (NPRS <6).

From this study, we can recommend doing further studies so that the results can become more optimal. Further studies should be done using a different method so that the acquired data can describe characteristics of clerks who experience cervical pain better.

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