

Awareness of Cubital Tunnel Syndrome among Adult Population of Almajmaah City, Saudi Arabia (2018-2019)

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ABSTRACT

Background: Due to the lack of data and studies concerning about measurement of population awareness about cubital tunnel syndrome in almajmaah city, this study aims at determining the level of population awareness among almajmaah adult population in Saudi Arabia and measure the prevalence of CuTS in Almajmaah city. Cubital Tunnel Syndrome is a disease that involves pressure or stretching of the ulnar nerve, which can cause numbness or tingling in the ring and small fingers, pain in the forearm, and/or weakness in the hand. The ulnar nerve runs in a groove on the inner side of the elbow.

Aims: To study the awareness of cubital tunnel syndrome (CuTS) among adult population in Almajmaah city, Saudi Arabia, and to estimate the overall prevalence of CuTS. In addition to determine its effect on social life.

Methods: 384 respondents of Almajmaah were participated (45.4% are male and 54.6% female, nearly half are youth aged range between (18-39)). The intervention includes measurement of understanding the clinical features could happen, causes, prevention and management of CuTS. A standardized questionnaire was used to cover 11 different aspects concerning CuTS. SPSS package was used to analyze the data collected from the sample.

Results: The present study has a huge sample size survey gained a rich information through a structured questionnaire by researchers, follow-up duration of mean of year (2018- 2019). 16 of participants (4.1%) have cubital Tunnel Syndrome. One third of them are thought that the main symptom is Pain in elbow. On the other hand, one quarter think that Tingling and numbness in ring and little fingers is the main manifestation. The most causes that population think that's it leads to the Cubital tunnel syndrome are Trauma, repeated hand physical activities like lifting heavy weights, and wrist fracture or dislocation respectively.

Conclusion: The study shows that the awareness of community was sufficient among adult population and shows that the prevalence of cubital Tunnel Syndrome (CuTS) is 4.1% it is nearly below the international population prevalence. Also, the study shows that population think that the CuTS can affect the quality of life.

Key words: Cubital tunnel syndrome, Ulnar neuropathy, Tunnel syndrome, Ulnar nerve, Prevalence of cubital tunnel syndrome

HOW TO CITE THIS ARTICLE: Saleh Khalaf M Almaymoni, Fahad Mohammed Y Alyousef, Mohammed Khalaf M Almaymuni, Fahad Abdulaah M Alotaibi, Yousef Mohammed Y Alyousef, Abdulaziz Khalaf M Almaymuni, Abdulrahman Mohamed Y Alyousef, Mohammed Abdullah Hazizi, Yazeed Saad R Alsubaie, Khaled Khalaf M Almaymuni, Osama Abdullah Hazizi, Awareness of Cubital Tunnel Syndrome among Adult Population of Almajmaah City, Saudi Arabia (2018-2019), J Res Med Dent Sci, 2019, 7(6): 54-58.

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Received: 15/10/2019

Accepted: 14/11/2019

INTRODUCTION

(CuTS) is entrapment of the ulnar nerve at the level of the elbow as it passes behind the medial epicondyle of the humerus this happened usually

by repetitive or prolonged compression, traction, or ischemia of the ulnar nerve as it courses through the cubital tunnel via activities involving repetitive or prolonged elbow flexion, trauma, fibro muscular compression from the triceps, and compression from osteophytes, ganglia, lipomas, and cysts [1]. Excessive cubitus valgus deformity similar to the 'abducted ulnohumeral lesion' described by Fryette, et al. has also been

considered as a potential cause of CuTS [2,3], as well as diabetes mellitus which makes the nerve more vulnerable to compression. This may occur secondary to a micro vascular injury in the nerve causing local ischemia or by interfering with the innate metabolism of the nerve. There is evidence of damage to axonal transport in the nerve. Diabetes may increase the risk of damage in a manner similar to mechanical double crush which lead to CuTS [4].

The major risk factors for cubital tunnel syndrome were obesity and holding a tool in a constant position, performing a repetitive task [5]. Cubital tunnel syndrome (CuTS) is second only to carpal tunnel syndrome as the most frequently diagnosed peripheral neuropathy of the upper extremities it is associated with pain, numbness, and weakness in the hand [1,6]. Affected individuals frequently have impairment of work and the vocational activities [7]. Left untreated, permanent hand disability may occur. Common conservative medical intervention focuses primarily on nerve gliding exercises, patient education, rest, non-steroid anti-inflammatory drugs (NSAIDs), activity modification, splint immobilization, bracing, and ergonomic changes, but manual therapy, specifically joint manipulation, has rarely been included in the plan of care for CuTS. Cubital tunnel release operation is the best option the ligament "roof" of the cubital tunnel is cut and divided [8]. This increases the size of the tunnel and decreases pressure on the nerve [1,6,9].

The prevalence of disease is differ from each population to other. in U.S. Metropolitan a study was done shows that Of 1,001 individuals who participated in the cross-sectional survey, 75% were women and 79% of the cohort was white; the mean age (and standard deviation) was 46 ± 15.7 years. Using a more sensitive case definition (lax criteria), we identified 59 subjects (5.9%) with cubital tunnel syndrome [10].

MATERIALS AND METHODS

Study design, and end points

Survey has been used a structured questionnaire created for a study objectives awareness of cubital tunnel syndrome among adult population at Almjma'ah City including the prevalence of CuTS, the understanding of clinical features, etiology, management, and prevention and its

effect in social life.

Study planned duration: the timetable of study has been created to collect data from sample population in a period not rather than 6 months from Sep 2018 to Mar 2019.

Inclusion criteria

1. Age >18.
2. Both genders.
3. Saudi population.

Exclusion criteria

1. Age <18.
2. Non-Saudi population

End point and outcomes

1. Primary end point awareness of cubital tunnel syndrome among adult population.
2. Secondary outcomes were population understanding of clinical features, causes, prevention and management of CuTS. Also, its prevalence among adult Saudi people in almjmaah city.

Measurement

1. A structured questionnaire has been designed to measure the following variables.
2. The prevalence of cubital tunnel syndrome among Saudi population in almjmaah city.
3. Understanding of clinical features, causes, prevention and management options in percentages (%).

Analysis

All the demographic and 11 variables of a structured questionnaire to gather information of 384 participants should be entered to Statistical Software and processing with SPSS Program. Variables are Gender, Age, and Marital status. Prevalence of cubital Tunnel Syndrome, clinical features, causes, prevention and management of disease will have analyzed through percentages.

RESULTS

There are 384 participants volunteered in CuTS study from almjmaah population. The prevalence of CuTS is 4.1% of the participants reported that they had CuTS which equal 16 person while 95.9% they have not which equal 368 illustrated in Figure 1.

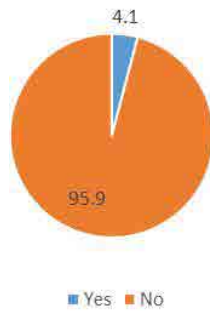


Figure 1: Percentage of sample who suffers from CuTS.

The Females are more than Males (54.6% to 45.4%) in the study. While Youth are more participating involves study (45.1%), category (40-60) represents 38.7% and a few participants from overage (16.2%). And nearly over two third of participants are married. Illustrated in Table 1 and Figure 2.

Table 1: Socio-demographic Data gender, age, and marital status.

		Frequency	%
Gender	Male	175	45.4
	Female	209	54.6
Age	18-39	174	45.1
	40-60	149	38.7
	>60	61	16.2
Marital Status	Married	236	61.5
	Single	148	38.5
	Total	384	100

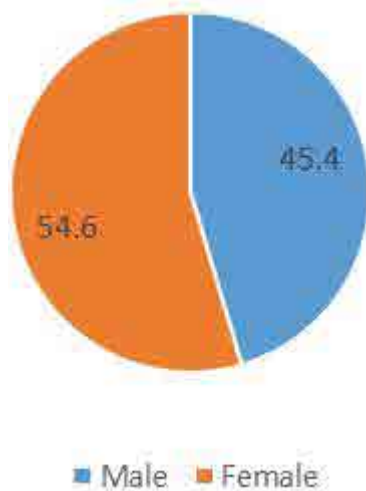


Figure 2: Percentage of gender.

27.8% of the sample are think that clinical features can happen with cubital Tunnel Syndrome is "Pain in the elbow", and 22.4% of the sample are think that clinical features can happen with cubital Tunnel Syndrome is "Tingling and numbness in

ring and little fingers ", and 8.9% of the sample are thought that the symptom can happen with cubital Tunnel Syndrome is "Weakness affecting the ring and little fingers muscle ", and 10.9% of the sample think that the manifestation is " Decreased overall hand grip", and 13.2% of the sample are think that clinical features can happen with cubital Tunnel Syndrome is " Muscle wasting in the hand", and 9.8% of the sample are thought that clinical features can happen with cubital Tunnel Syndrome is " Decreased ability to pinch the thumb and little finger" and 6.9% of the sample are think that clinical features can happen with cubital Tunnel Claw-like deformity of the hand (Table 2).

Table 2: Frequency and percent for population knowledge about clinical features of CuTS.

Clinical features	Frequency	%
Pain in the elbow	195	27.80%
Tingling and numbness in ring and little fingers	157	22.40%
Weakness affecting the ring and little fingers	63	8.90%
Decreased overall hand grip	77	10.90%
Muscle wasting in the hand	92	13.20%
Decreased ability to pinch the thumb and little finger	68	9.80%
Claw-like deformity of the hand	49	6.90%
Total	794	100.00%

one third (30.8%) of the sample are think that the causes lead to cubital Tunnel Syndrome is "Trauma ", while 28.1% of the sample are think that " Repeated physical activities like lifting heavy weights ", is the cause. Also, 22.4% of the sample thinks that the causes lead to cubital Tunnel Syndrome is "elbow fracture or dislocation", and 10.5% of the sample thought that the leading cause of cubital Tunnel Syndrome is "Arthritis", and 8.2% of the sample think that the causes lead to cubital Tunnel Syndrome is "Tumor of bone". Table and chart below showed that (Table 3).

Table 3: Awareness of causes leading to CuTS.

Causes	Frequency	%
Trauma	201	30.80%
Repeated physical activities like lifting heavy weights	183	28.10%
Elbow fracture or dislocation	146	22.40%
Arthritis	69	10.50%
Tumor of bone	54	8.20%
Total	653	100.00%

31.24% of participants reported that they thought that oral analgesics is a method of treat

CuTS, 24.35% thought it could be treat by splint , 22.83% thought it could be treat by Surgical intervention, 12.40% thought that the treatment is by NSAID, and only 9.18% of participants were thought CuTS could be treat by Steroid Injection. The results are shown in the following graphs, and. Illustrated In Table 4 and Figure 3.

Table 4: Awareness of method of treating CuTS.

Treatment	Frequency	%
Oral analgesics	204	31.24%
NSAID	81	12.40%
Steroid Injection	60	9.18%
Splint	159	24.35%
Surgical intervention	149	22.83%
Total	653	100.00%

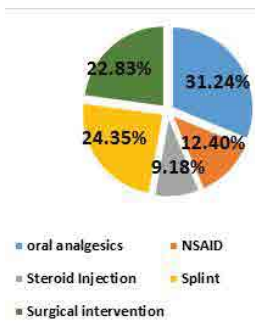


Figure 3: Percentage of population awareness of CuTS treatment.

The table showed that 25.7% from the sample used to Prevent CuTS " Avoid repetitive movement ", and 14.5% from the sample used to Prevent CuTS "Keeping the elbow straight while at rest.", and 24.5% from the sample used to CuTS " Wear splint while sleeping. ", and 26.6% from the sample used to Prevent CuTS are "Avoid Fall or direct impact", and 8.7% from the sample used to Prevent CuTS are "Avoid leaning on elbow while driving" (Table 5).

Table 5: Frequency and percent for population awareness of prevention of CuTS.

Prevention	Frequency	Percent
Avoid repetitive movement	171	25.70%
Keep your elbow straight while at rest	92	14.50%
Wear splint while sleeping	156	24.50%
Avoid Fall or direct impact	169	26.60%
Avoid leaning on elbow while driving	55	8.70%
Total	643	100.00%

75.7% of participants people thought that CuTS could affect patient sleep, 82.03% of them thought could affect patient job performance, and 67.4% they thought affected social life. Following table and chart shown that illustrated in Table 6.

Table 6: Frequency and percent of population awareness of CuTS effects.

CuTS effects	Frequency	Percent	
Thinking of CuTS affect patient sleep	Yes	291	75.7
	No	93	24.3
Thinking of CuTS affect patient job performance	Yes	315	82.03
	No	69	17.97
Thinking of CTuS affected social life	Yes	259	67.4
	No	125	32.6
Total	386	100	

DISCUSSION

There are few studies discussed the Cubital Tunnel Syndrome prevalence among different types of populations. But In this study, we searched both the prevalence and the awareness of CuTS in the population, the awareness of CuTS is sufficient which is reflected by their knowledge about the disease. In details, their knowledge about clinical features of CuTS is 27.8% of them said that pain in the elbow is one of manifestation and 22.4% know that the tingling and numbness in ring and little fingers is one of symptom. In addition, their knowledge about causes is 30.8%, 28.1% and 22,4% said that Trauma, repetitive hand activity and elbow fracture or dislocation is the cause respectively. In addition, their knowledge about treatment is 31.24% people reported that oral analgesics is a method of treat and 24.35% of population said it could be treat by splint & 22.83% by Surgical intervention.

In this study, the prevalence of the CuTS is slightly lower the developed countries which is 4.1% of people in almjmaah city suffer from CuTS while on USA there is a cross sectional cohort study was done to study the prevalence of CuTS it showed of 1,001 individuals who participated in the cross-sectional survey, 75% were women and 79% of the cohort was white; the mean age (and standard deviation) was 46 ± 15.7 years. Using a more sensitive case definition (lax criteria), we identified 59 subjects (5.9%) with cubital tunnel syndrome

Cubital Tunnel Syndrome cause a strong impacting on social life for 75.7 % of participants people thought that CuTS could affect patient sleep, 82.03% of them thought could affect patient job performance, and 67.4% they thought affected social life.

CONCLUSION

The aim of the study was to study the awareness of cubital tunnel syndrome (CuTS) among adult population in Almjmaah city, Saudi Arabia, and to estimate the overall prevalence of CuTS. I have not found any research that discusses people's awareness of upper neuropathy. We need a lot of work to raise people's awareness of this disease to prevent it but the results show that the awareness of community population was sufficient and show that the prevalence of cubital Tunnel Syndrome (CuTS) is 4.1% it is nearly lower than international population prevalence. Also, the study shows that population think the CTS can affect the quality of life.

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