

STATISTICAL MEDICAL ANALYSIS

Carpal tunnel syndrome - statistical analysis data for January and February in 2023 in Skopje, North Macedonia

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Abstract

Carpal tunnel syndrome represents compression of the median nerve in the wrist and is the most common neuropathic compression of the upper limbs. It occurs as a result of increased pressure in the carpal tunnel, which causes ischemia of the median nerve and subsequent physiological dysfunction. Carpal tunnel syndrome is primarily a clinical diagnosis, with symptoms such as tingling, numbness, burning, or prickling in the anterior aspect of the thumb, index finger, third finger, and radial part of the fourth finger. In the United States, carpal tunnel syndrome has an incidence of 1 to 3 persons per 1000 per year, with a prevalence of 50 per 1000, and similar incidence and prevalence in more developed countries. According to data obtained from the Clinical Center Mother Teresa Skopje, North Macedonia, it has been noted that it most often occurs in patients aged 30 to 60 years and is two to three times more common in women than in men. Comorbidities in patients are also monitored, usually including diabetes mellitus type 2 and hypertension. Out of 10 patients who were monitored over a period of 2 months, 8 were women and 2 were men.

Keywords: carpal tunnel, syndrome, statistics, Macedonia

Introduction

Carpal tunnel syndrome represents compression of the median nerve of the wrist and is the most common neuropathic compression of the upper limbs, accounting for 90% of all neuropathies. The median nerve runs from the forearm through a passageway in the wrist to the hand, providing sensation to the palm side of the thumb and fingers, except for the little finger. Early symptoms of carpal tunnel syndrome include numbness, pain, and paresthesias, and pain can also radiate up the affected arm. With further progression, hand weakness, decreased fine motor coordination, thenar atrophy, and clumsiness can occur. [1]

To establish a diagnosis of carpal tunnel syndrome, the doctor may perform a Tinel sign test by tapping the palm side of your wrist or fully flex your wrist with your arms extended. They might also conduct imaging tests, such as X-rays, ultrasounds, or MRI exams, to examine your bones and tissues. Additionally, they may perform an electromyogram by inserting a thin electrode into a muscle to measure its electrical activity or nerve conduction studies by taping electrodes to your skin to measure the signals in the nerves of your hand and arm. [2]

The management of CTS is based on disease severity. In mild to moderate cases, a trial of conservative treatment is recommended, including splinting, corticosteroids, physical therapy, therapeutic ultrasound, and yoga. Conservative therapy typically improves symptoms in two to six weeks and reaches maximal benefit at three months. Surgical decompression should be offered to patients with severe CTS or to the ones showing nerve damage on electrodiagnostic studies. [3]

The most significant risk factors for CTS include wrist injury, such as dislocation, fracture, burn, or severe bruise on the wrist or lower arm, which can cause swelling in the carpal tunnel, anatomic factors like being born with a small carpal tunnel, tiny wrists, or a bone arrangement that impinges on the carpal tunnel, gender, age, inflammatory conditions, conditions that damage nerves, including diabetes, conditions that lead to fluid retention, such as pregnancy and menopause, also hypothyroidism, acromegaly, and repetitive use and exposure to vibration. [4]

Material and methods

For the purposes of the research, data were taken on patients diagnosed with Carpal tunnel syndrome from the Clinical Center Mother Teresa Skopje, North Macedonia. The obtained results of the research are shown in tables and a chart.

Result and Discussion

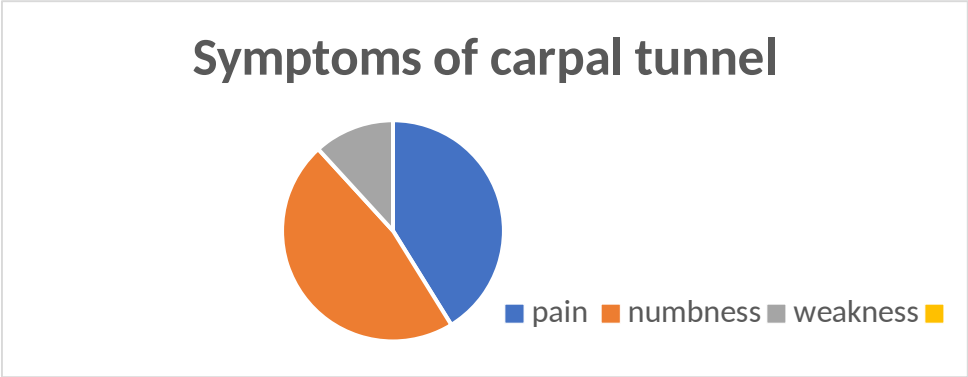
From the research, it can be noted that carpal tunnel syndrome occurs most often in patients aged 30 to 60 years and is two to three times more common in women than in men. Comorbidities in patients are also monitored, usually diabetes mellitus type 2 and hypertension. Out of 10 patients who were monitored, 8 women and 2 men were registered, in a period of 2 months.

Table 1.*Gender and age of the patients*

Gender	Age group				
	0-30	31-40	41-50	51-60	>60
Men	0	0	1	0	1
Women	0	0	2	4	2

In table 1 is presented the gender of the patients and their age, the most affected are patients in the age group of 51 to 60 with 4 patients and all of them are women. Carpal tunnel syndrome is generally more common in women. The reason may be because the carpal tunnel area is smaller in women than in men.

Chart 1. Symptoms presented in the patients



In Chart 1 are shown most common symptoms of carpal tunnel syndrome that occurred in the patients. Pain is present in 7 patients or 41%, numbness in 8 patients or 47% and weakness in only 2 patients or 12%. Pain and numbness are the most common symptoms in these patients. The pain can occur on any part of the wrist and can extend into the palm or arm, usually increasing with a certain movement. Numbness usually occurs at night and it is called nighttime symptom, because at night many people sleep with their wrists bent. During the day, symptoms often occur when holding something for a prolonged period of time.

Table 2. Comorbidity in patients with carpal tunnel syndrome

Comorbidity	Number of patients
Diabetes	3
Hypertension	4
Hypothyroidism	3
Fracture of the radius	1
Denies	2

According to the results shown in table 2 we can notice that almost all patients have previous diseases or comorbidities, only two of them deny it. Most of them have diabetes and hypertension or hypothyroidism. Carpal tunnel syndrome is generally believed to be more common in individuals with diabetes, even those without diabetic nerve complications.

Hypothyroidism is one of the most important causes of the carpal tunnel syndrome, which, if diagnosed early can be successfully treated. Deposition of substances called pseudo mucinous on the median nerve sheath, in the narrow space of carpal tunnel, is the leading cause to compression of the nerve and therefore leads to carpal tunnel syndrome. [5]

Conclusion

Carpal tunnel syndrome (CTS) is a treatable condition but patient might need to change their lifestyle, to exercises, do immobilization, take medications or in the end if none of these treatment work surgery may be required. When you get a diagnosis early, the condition is easier to treat.

References

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