INTRODUCTION
The commonest form of median nerve entrapment is carpal tunnel syndrome (CTS), and it affects 90% of all entrapment neuropathies. It was first described by Paget in 1854, and is defined as a mononeuropathy due to a compressive force distorting the carpal tunnel, in 3.8% of the general population. Incidence is up to 276/100,000 per year, with a prevalence of 9.2% in females and 6% in males, with a peak age incidence of 40 to 60 years. Factors which contribute in its causation are congenital predisposition, heavy work, injury, fluid retention and the development of any mass lesions in the tunnel. The troublesome features are caused by compression of the median nerve along the carpal tunnel, which is formed on the its three sides by the carpal bones and on the volar surface by the deep transverse carpal ligaments. Main features of carpal tunnel syndrome include pain in the hand, tingling sensation, numbness in the distribution of the median nerve (thumb, index, middle finger and the lateral side of the ring finger), weakness of the grip strength and reduced functional capacity of the affected hand. Patients are more distressed at night, and complain of clumsiness with activities requiring wrist flexion. Patients often describe the ‘flick sign’ in which shaking their wrists relieves symptoms. Other signs are Tinel sign, caused by digital percussion to the regions of carpal tunnel and flexor retinaculum, and in Phanel test, there will be paraesthesia in the median nerve innervating area after wrist flexion for 30-120 seconds.

The nerve conduction study is certainly a diagnostic tool for carpal tunnel syndrome. The treatment for carpal tunnel syndrome is either surgical or medical. Surgical treatment is generally recommended for those with severe symptoms, while medical treatments are recommended for those who have mild symptoms or in whom the contraindications limit surgery. Examples of conservative treatment include oral and injectable steroids, physical therapy, electrotherapy, night splinting and workplace alteration.

The aim of this study was to determine the clinical features and demography of carpal tunnel syndrome cases attending a tertiary care hospital. It emphasizes the health care providers at governmental and non-government level to plan preventive initiatives and management strategies in the light of local and international past and latest scientific research findings and updates.

METHODS
This descriptive cross-sectional study was conducted at Neurosurgery Department, Naseer Teaching Hospital,
A total of 250 patients including 210 females and 40 males were included in the study. A mean age of 48.5±2.54 years was found in females and 50.5±5.85 years was observed in males. The female to male ratio was 5.2:1 and this disorder was most commonly seen in the age group 46-60 years. Bilaterality of this disorder was seen in 222 (88.8%) subjects (Table I). Out of 222 patients with bilateral CTS pattern, 192 (86.48%) were females and 30 (13.5%) were males. Similarly, out of 28 unilateral CTS 18 (64.28%) were females and 10 (35.7%) were males.

Mild form of CTS was the commonest form noticed in 126 (50.4%) of subjects, followed by moderate form (Table II).

Paraesthesia was the most prevalent symptom, being present in 100% cases followed by weakness at thenar eminences in 230 (92%), nocturnal pain 225 (90%) and daytime pain in 212 (85%). Majority of cases had ≥1 symptoms of median nerve compression at the carpal tunnel level as seen in 232 (93%) patients (Table III).

Co-morbidities were found in form of diabetes which was the most frequent disorder, found in 80 (32%) cases, followed by hypothyroidism which was observed in 35 (12%) cases while 3 (1.2%) patients were pregnant.

### RESULTS

Carpal tunnel syndrome is the commonest form of mononeuropathy diagnosed on the basis of clinical features and nerve conduction studies. According to a study conducted at London 1:1000 people are diagnosed each year with CTS.

In our study, the higher predominance of CTS is in women with a ratio of 5.2:1 which is close to that of other studies where this ratio was observed to be 5.6:1, 5.4:1, 5:1 and 4.9:1. Saboor A, et al. in their study at Ayub Teaching Hospital, Abbottabad observed that female gender was in predominance with 86.3% study population being women. Mean age of CTS subjects in our study was found to be 48.5 years in females and 50.5 years in males with peak incidence in the age group of 46-60 years. Malibary HM, et al. in their study conducted at Jeddah, Saudi Arabia recruited 336 subjects and observed the mean age in females was 52.4 years and 48.5 years in males. Likewise Abumunaser LA, et al. in their study concluded the mean age in females to be 45.5 years and 48.5 years in males which is much closer to our results.

Regarding the laterality, Malibary HM, et al. in 2013 observed that 90.5% of their patients had bilateral CTS, this figure is observed to be 88.8% in our study. Similarly, 11.2% of our cases had unilateral CTS whereas it was reported as 9.5% in the same study.

Paraesthesias was the most prevalent symptom, as it was observed in all of our cases, followed by weakness in thenar eminence which was seen in 92% of our subjects. These figures were observed as almost same with paraesthesias in all and weakness in same number of subjects by Azevedo JWW, et al. Likewise sleeping disorder was

### CLINICAL PROFILE OF PATIENTS WITH CARPAL TUNNEL SYNDROME

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>Frequency</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Gender (n=250)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>210</td>
<td>84</td>
</tr>
<tr>
<td>Male</td>
<td>40</td>
<td>16</td>
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<tr>
<td>Age Group in years (n=250)</td>
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<tr>
<td>15-30 years</td>
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<td>4</td>
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<td>31-45 years</td>
<td>85</td>
<td>34</td>
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<tr>
<td>46-60 years</td>
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<td>37.2</td>
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<tr>
<td>&gt;60 years</td>
<td>62</td>
<td>24.8</td>
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<tr>
<td>Laterality (n=250)</td>
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<td></td>
</tr>
<tr>
<td>Bilateral</td>
<td>222</td>
<td>88.8</td>
</tr>
<tr>
<td>Unilateral</td>
<td>28</td>
<td>11.2</td>
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<tr>
<td>Left</td>
<td>8/28</td>
<td>29</td>
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<td>Right</td>
<td>20/28</td>
<td>71</td>
</tr>
</tbody>
</table>

| TABLE II: CATEGORIZATION OF CASES WITH CARPAL TUNNEL SYNDROME (n=250) |
|-------------------------|------------------|-----------|
| Category                | Frequency | Percentage |
| Mild                    | 126       | 50.4      |
| Severe                  | 1         | 0.4       |
| Very severe             | 3         | 1.2       |
| Total                   | 250       | 100       |
** Single patient can have more than one clinical feature.

** Limitation of our study was confinement to demographic profile with CTS category and pattern. It has the importance in the context of comparing the consistency of our findings with those of other studies, to build a strong evidence of epidemiology, demographic and clinical profile of this disease.

** CONCLUSION

In our study, predominant age group was 46-60 years with female predominance. Bilaterality with sensory symptoms like paraesthesias, weakness at thenar eminences, nocturnal and daytime pain were commonly observed.

** REFERENCES


24. Page MJ, Massy-Westropp N, O’Connor D, Pitt V. Splinting for carpal tunnel syndrome. Cochrane...
AUTHOR’S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

SA: Concept & study design, acquisition, analysis & interpretation of data, final approval of the version to be published.

MQ: Analysis & interpretation of data, drafting the manuscript, critical review, final approval of the version to be published.

MU: Drafting the manuscript, critical review, final approval of the version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

Authors declared no conflict of interest

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NIL