

Clinical Profile of Patients of Alcoholic Neuropathy at Tertiary Care Hospital, Gujarat, India

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Abstract

Background: Alcohol is one of the most commonly used substances in the world. After ingestion, alcohol distributes throughout body tissues and rapidly crosses the blood-brain barrier. According to DSM-IV, studies involving clinical and electrodiagnostic criteria prove that neuropathy is present in 25-66% of chronic alcoholics. Alcohol consumption results in multiple end-organ damages.

Objectives: To study the clinical profile of alcoholic neuropathy patients.

Materials and Methods: This cross-sectional study was carried out among 40 clinically diagnosed with alcoholic neuropathy patients admitted at the department of general medicine in tertiary care hospital, Gujarat during March 2020 to May 2022. Inclusion criteria was patient fulfilling the criteria of alcohol-dependent syndrome with or without symptoms of neuropathy, Age above 18 years, patients are willing to participate in the study.

Results: Mean age of study participants was 47.1 years. Mean duration of alcohol consumption was 18.8 years. Almost 38% study participants had family history of habit of alcohol consumption. Most common sensory symptoms was Pins & needles sensation of feet and most common autonomic symptoms was Erectile dysfunction. Type of neuropathy like Sensory Neuropathy, Sensory + Autonomic Neuropathy, Sensorimotor Neuropathy, Sensorimotor + Autonomic Neuropathy had noted in 55%, 20%, 17.5%, 7.5% study participants respectively.

Conclusion: Incidence of alcoholic neuropathy is increased with age. Almost 38% had history of habit of alcohol consumption in family. Most common sensory symptoms noted among study participants was Pins & needles sensation of feet and most common autonomic symptoms noted among study participants was erectile dysfunction. Most common type of neuropathy was noted among study participants was sensory neuropathy.

Keywords: Alcohol Consumption, Alcoholic Neuropathy, Autonomic Symptoms, Sensory Symptoms

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Introduction

Alcohol is one of the most frequently used substances in the world. After ingestion, alcohol circulates throughout body tissues and quickly crosses the blood-brain barrier. Ethanol abuse substantially contributes to damage in a variety of tissues including liver, the central and peripheral nervous systems, and skeletal and cardiac muscle. Alcoholic peripheral neuropathy is a dangerous complication of long-term excessive consumption of alcohol characterized by pain and dysesthesias, primarily in the lower extremities, and is not satisfactorily treated by available therapies [1-3].

The incidence of alcoholic neuropathy in the general population is not accurate as the incidence differs mostly depending on the definition of chronic alcoholism and the category used to diagnose and classify neuropathy [4]. According to DSM-IV, studies involving clinical and electrodiagnostic criteria prove that neuropathy is detected in 25-66% of chronic alcoholics. Neuropathy due to alcohol consumption depends on the duration and extent of the total lifetime of alcohol consumption. Cultural and racial factors also play a role in the development of alcohol neuropathy [5].

Axonal neuropathy with decreased densities of nerve fibres is the most common diagnosis based on electrophysiological and pathological data [2-6]. However, in individuals with a lengthy history of neuropathic complaints and substantial axonal sprouting, small and unmyelinated fiber densities were more severely diminished than large and myelinated fibre densities [3]. Subperineurial oedema is more common in thiamine deficiency neuropathy, while segmental de/remyelination resulting from enlargement of successive nodes of

Ranvier is more common in alcoholic neuropathy [7].

Alcohol consumption results in multiple end-organ damages. Chronic alcoholic consumption results in multiple organ damage among which the central nervous system is affected in the form of Wernicke encephalopathy, Korsakoff psychosis, cerebellar ataxia and, peripheral neuropathy and, sensory ataxia [8]. Alcohol-related peripheral neuropathy is a highly irreversible complication of alcoholism that results in sensory, motor, autonomic dysfunction which commonly presents as pain, paraesthesia, sensory ataxia [9].

So, the present study conducted with the objectives to study the clinical profile of alcoholic neuropathy patients.

Materials and Methods

This is a cross-sectional study conducted among 40 clinically diagnosed with alcoholic neuropathy patients admitted at general medicine department of tertiary care hospital, Gujarat from March 2020 to May 2022. Present study was conducted after approval of the institutional ethical committee (IEC) of the institute. Inclusion criteria was patient fulfilling the criteria of alcohol-dependent syndrome with or without symptoms of neuropathy, Age above 18 years, patients are willing to participate in the study.

Exclusion criteria was immunocompromised patients (HIV, HBV, HCV reactive, malignancy, tuberculosis, on steroids, on chemotherapy, on immunosuppressed drugs, who undergone organ transplant, on dialysis) and patients who were diagnosed as all other type of peripheral neuropathy (DM neuropathy, HIV neuropathy, autoimmune, drug-induced, idiopathic, hereditary, compressive neuropathy).

History regarding alcohol habituation, the duration and quantity of consumption, symptoms of neuropathy, and history concerning other possible causes of neuropathy were taken and physical

examination was done. The data were recorded in an excel sheet and descriptive analysis was performed by epi. Info. Software. Data were presented in the tables & figures.

Results

Table 1: Socio-demographic characteristics of study participants [N=40]

Parameter	Value
Age (mean \pm SD)	47.1 \pm 8.4 years
Duration of Alcohol Consumption (mean \pm SD)	18.8 \pm 6.9 years
➤ 0-10	11 (27.5)
➤ 11-20	14 (35)
➤ >20	15 (37.5)
Unit of alcohol per week	31.4 \pm 8.1
Family H/o of alcohol intake	38%

Table 1 shows that mean age of study participants was 47.1 years with 8.4 SD. Mean duration of alcohol consumption was 18.8 years with 6.9 SD. Out of this, 27.5%, 35%, 37.5% study participants had habit of alcohol consumption since 0 to 10, 11 to 20, more than 20 years respectively. Average unit of alcohol drink among study participants was 31.4 with 8.1 units. Almost 38% study participants had family history of habit of alcohol consumption.

Table 2: Distribution of sensory symptoms in the study population [N=40]

Sensory Symptoms	Number	%
Pins & needles sensation of feet	33	82.5
Burning Feet	21	52.5
Numbness of feet	16	40
Hyperalgesia of feet	11	27.5
Allodynia	8	20
Unsteadiness in darkness	6	15

Table 2 shows that sensory symptoms like Pins & needles sensation of feet, Burning Feet, Numbness of feet, Hyperalgesia of feet, Allodynia, Unsteadiness in darkness had noted in 82.5%, 52.5%, 40%, 27.5%, 20%, 15% study participants respectively.

Table 3: Distribution of autonomic symptoms in the study population [N=40]

Autonomic Symptoms	Number	%
Erectile dysfunction	11	27.5
Sweating disturbances	7	17.5
Postural Giddiness	4	10
Bladder Disturbance	1	2.5

Table 3 shows that autonomic symptoms like Erectile dysfunction, sweating disturbances, Postural Giddiness, Bladder Disturbance had noted in 27.5%, 17.5%, 10%, 2.5% study participants respectively.

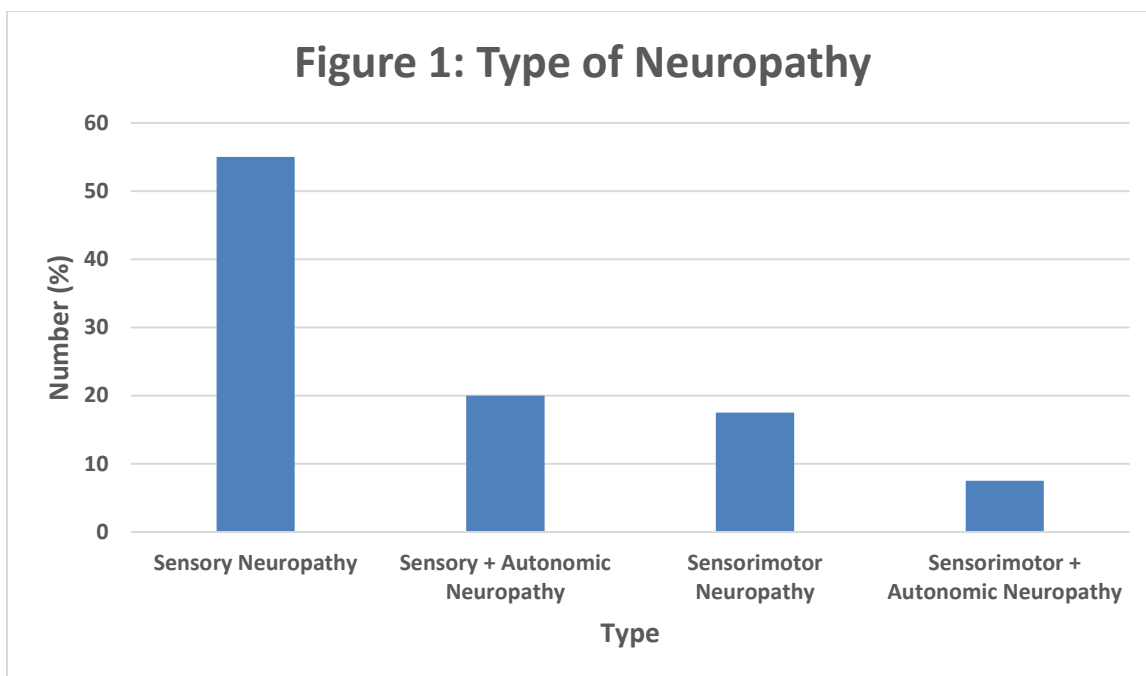


Figure 1: Distribution of type of Neuropathy in the study population [N=40]

Figure 1 shows that type of neuropathy like Sensory Neuropathy, Sensory + Autonomic Neuropathy, Sensorimotor Neuropathy, Sensorimotor + Autonomic Neuropathy had noted in 55%, 20%, 17.5%, 7.5% study participants respectively.

Discussion

Early identification of alcohol-induced peripheral neuropathy and initiation of its treatment is very important to prevent disabilities in chronic alcoholics. Awareness of physicians has a key role to play in detecting and managing peripheral neuropathy [10].

Present study found that mean age of study participants was 47.1 years and mean duration of alcohol consumption was 18.8 years. Present study found that highest number of study participants (37.5%) had history of alcohol consumption since more than 20 years and 38% had history of habit of alcohol consumption in family which shows that incidence of alcoholic neuropathy is increased with age.

A study done by Edenberg HJ *et al* [11] not found a correlation between age and neuropathy probably because as age

increases the prevalence of neuropathy increases with alcohol being the additive effect and not the sole reason for neuropathy.

A study done by Chaware N *et al* [12] noted mean age was 39.9 years which is lower to present study. Positive family history noted in 38% study participants in same study which is correlate with the present study.

Another similar study done by Nikita M *et al* [10] observed mean age was 46.2 years and mean duration of alcohol consumption was 19.1 years which is similar to the present study.

A study done by Chaware N *et al* [12] noted mean duration of alcohol consumption 16.4 years which is almost similar to present study.

A study done by Zambelis T *et al* [13] observed that People with a strong family

history of alcohol misuse are more likely to develop alcoholic neuropathy, and the consequences of alcoholism and abuse tendencies are also more pronounced in these patients. Alcohol consumption and alcohol-related end organ damage, such as neuropathy, have been linked to a hereditary susceptibility in families.

A study done by Bawankule S *et al* [14] did on encephalopathy in cirrhosis of liver found mean age was 43.9 years. A study done by Kawada T *et al* [15] states that the development of neuropathy does not correlate with age, units of alcohol, or nutritional factors [15].

Present study found that most common sensory symptoms noted among study participants was Pins & needles sensation of feet (82.5%) followed by burning feet (52.5%) & numbness of feet (40%). These findings are correlate with the study done by Chaware N *et al* [12] Koike H *et al* [3].

Present study found that most common autonomic symptoms noted among study participants was erectile dysfunction (27.5%) followed by sweating disturbance (17.5%). These findings are correlate with the study done by Chaware N *et al* [12], Nicolosi C *et al* [16], Agelink MW *et al* [17], Monforte R *et al* [18].

A study done by Chaware N *et al* [12], Edenberg HJ *et al* [11], Zambelis T *et al* [13] found the association between chronic consumption of alcohol and development of neuropathy.

Present study found that most common type of neuropathy was noted among study participants was sensory neuropathy (55%) followed by sensory + autonomic neuropathy (20%) respectively.

Conclusion

mean age of study participants was 47.1 years and mean duration of alcohol consumption

was 18.8 years. Highest number of study participants had history of alcohol consumption since more than 20 years which shows that incidence of alcoholic neuropathy is increased with age. Almost 38% had history of habit of alcohol consumption in family. Most common sensory symptoms noted among study participants was Pins & needles sensation of feet and most common autonomic symptoms noted among study participants was erectile dysfunction. most common type of neuropathy was noted among study participants was sensory neuropathy.

Ethical Approval: The study was approved by the Institutional Ethics Committee

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