A Comparative analysis of neurophysiology parameters in acute and chronic inflammatory demyelinating polyneuropathies

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OVERVIEW

AIDP and CIDP are autoimmune demyelinating neuropathies which significantly impair peripheral nerve functionand are diagnosed primarily by nerve conduction studies. Electrophysiological parameters such as distal motor latency, conduction velocity, F-wave latency and CMAP/SNAP amplitudes – reflect nerve involvement and disease severity.

While these parameters are used in diagnosis, a comparative analysis is done on which specific electrophysiological parameters is most affected in AIDP and CIDP.

AIM

This study aims to analyze the clinical & neurophysiological profile of 25 patients diagnosed with AIDP & CIDP.

METHODS

This study employed a retrospective analysis of clinical and neurophysiological data from 25 patients including 8 patients with AIDP & 17 patients with CIDP from a tertiary care centre

Nerve conduction study was performed with a Nicolet Viking quest in accordance with recommended guidliness.

Measurements were obtained from (median,ulnar,tibial,peroneal,sural and superficial peroneal nerves) and were compared between patients diagnosed with AIDP & CIDP

RESULTS

- **Age distribution:**

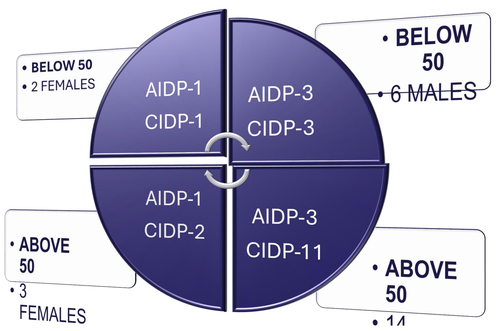
In patients under 50 years(n=8) females included 1 AIDP & 1 CIDP , males included 3 AIDP & 3 CIDP. Over 50 years (n=17) females had 1 AIDP & 2 CIDP , males had 3 AIDP & 11 CIDP.

- **Gender prevalence:**

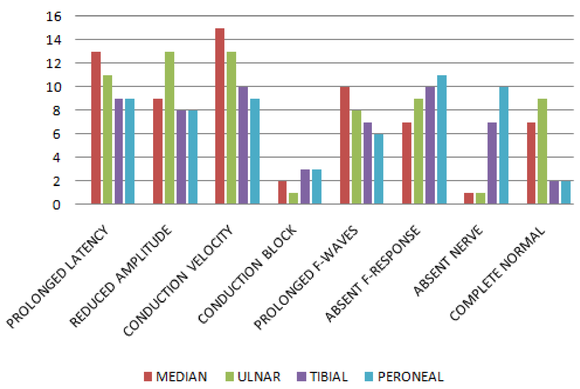
Males more than females (20:5)

•Comorbids:

AIDP (8 patients) : Diabetes – 6
Hypothyroidism- 4
CIDP (17 Patients) : Diabetes – 14
Hypothyroidism - 5



Motor conduction of CIDP

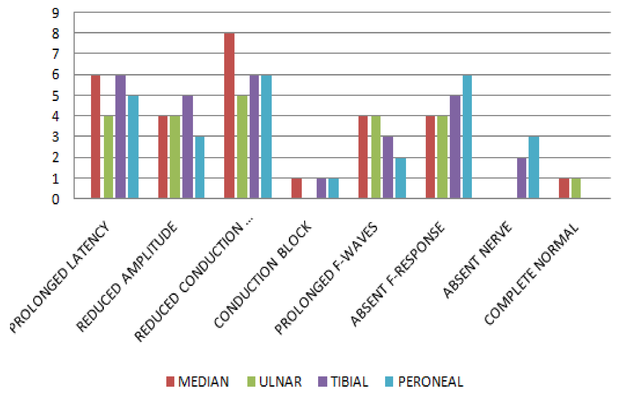


- **Neurophysiological Findings :**

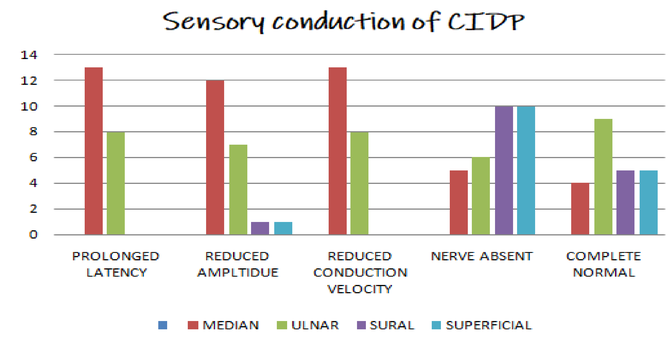
Motor parameters	AIDP	CIDP
Distal **latency**	75 %	61.7 %
Amplitude changes	57.1%	55.1 %
Conduction velocity Reduced	**89.2 %**	**70 %**
F-waves (Absent & Prolonged)	67.8 %,46.4 %	54% ,45%
Conduction block	10.7 %	13.6 %
Non-stimulatable Nerve	17.8 %	27.4 %
Complete normal nerve	7.1 %	34 %

Sensory parameters	AIDP	CIDP
Distal latency	28.5%	30.7 %
Amplitude changes	42.8%	30.1 %
Conduction velocity Reduced	46.4 %	32.1 %
Non-stimulatable Nerve	46.4 %	29 %
Complete normal nerve	78.5%	31 %

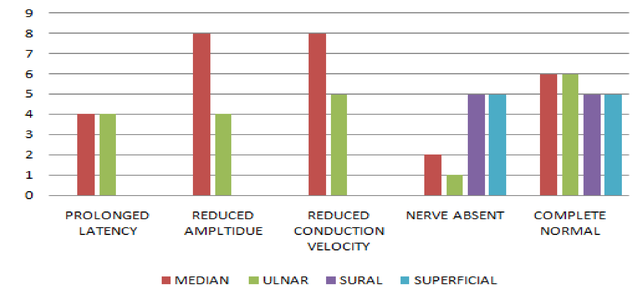
Motor conduction of AIDP



Sensory conduction of CIDP



Sensory conduction of AIDP



CONCLUSION

This study provides valuable insights into the distinct electrophysiological profiles of AIDP and CIDP among patients below and above 50 years of age, emphasizing a predominance of CIDP in older males. The most common electrophysiological abnormality in AIDP was reduced median motor nerve conduction velocity and 89.2% of patients showed abnormalities in all parameters .In CIDP also, median motor conduction velocity was notably affected and 70 % of patients showed abnormalities in all parameters. Understanding these patterns may facilitate targeted approaches in the diagnosis and management of inflammatory demyelinating polyneuropathies..

References

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