

## Letter to the Editor

## Delayed sensorimotor neuropathy and renal failure: an additional report in a patient with diethylene glycol poisoning

Dear Editor,

We previously reported a case of delayed autonomic neuropathy in a patient with diethylene glycol (DEG) poisoning,<sup>1</sup> and would like to emphasize two characteristic complications, sensorimotor neuropathy and renal failure, occurring in the same case, because of their severity and possible reversibility.

Although once recovered from acute symptoms by day 3, the patient suffered from long-term ventilator dependence

(days 11–54), unresponsiveness, and quadriplegia. Despite no remarkable finding on brain magnetic resonance imaging, electroencephalogram, or lumbar puncture, a nerve conduction study showed reductions in the amplitudes and conduction velocities of compound muscle and sensory nerve action potentials in the limbs (Table 1). The patient recovered from all neurological symptoms within 2 years of exposure to DEG. Sensorimotor neuropathy from DEG poisoning can be delayed until at least 5–10 days

**Table 1.** Results of nerve conduction studies on the right limbs of a patient with diethylene glycol poisoning on day 35



Nerves	Motor		Sensory	
	CMAP (mV)	MCV (m/s)	SNAP ( $\mu$ V)	SCV (m/s)
Median				
Wrist	1.96		8.1	40.9
Elbow	1.66		4.2	
Elbow–wrist		45.7		48.4
Normal range	12.5 $\pm$ 1.7	58.7 $\pm$ 1.4	28.4 $\pm$ 3.8	61.4 $\pm$ 3.7
Ulnar				
Wrist	2.60		8.3	43.0
Below elbow	2.57		4.2	
Above elbow	2.28		1.9	
Below elbow–wrist		45.5		49.2
Above elbow–below elbow		43.5		45.6
Normal range	8.5 $\pm$ 1.0	61.0 $\pm$ 2.3	31.0 $\pm$ 3.6	65.7 $\pm$ 6.1
Tibial				
Ankle	2.66			
Popliteal fossa	2.12			
Popliteal fossa–ankle		38.3		
Normal range	13.2 $\pm$ 2.3	46.2 $\pm$ 3.6		
Peroneal				
Below FHTA	0.96			
Above FHTA	0.86			
Above FHTA–below FHTA		24.4		
Normal range	4.9 $\pm$ 1.3	46.5 $\pm$ 1.6		
Sural				
Middle calf			3.6	50.0
Normal range			11.3 $\pm$ 1.5	52.9 $\pm$ 4.3

CMAP, compound muscle action potentials; FHTA, fibula head of the tibialis anterior muscle; MCV, motor conduction velocity; SCV, sensory conduction velocity; SNAP, sensory nerve action potentials.

post-ingestion and presents various symptoms including quadriparesis and unresponsiveness.<sup>2</sup> The clinical course in severe cases is unpredictable, with long-term resolution in some patients and permanent neurological damage in others.<sup>2</sup> In the management of such patients, subsequent close observation is required even after initial recovery.

The patient received renal replacement therapy (RRT) for renal failure on day 1–30. Although RRT could be withdrawn in this case, one report showed 90.0% of dialysis-dependent patients from DEG poisoning remained so over time.<sup>3</sup> Clinicians should recognize a possible necessity of long-term RRT for such cases.

The report of this case was approved by the Ethics Committee of the Tohoku University Graduate School of Medicine (2015-1-668).

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## DISCLOSURE

Conflict of Interest: None declared.

## REFERENCES

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