The refractory period of transmission is impaired in axonal Guillain-Barré;syndrome

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摘要

Abstract

Guillain-Barré syndrome (GBS) is classified as acute motor axonal neuropathy (AMAN) or acute inflammatory demyelinating polyneuropathy (AIDP). Motor nerve conduction block is frequently found in both subtypes of GBS. To compare patterns of conduction block and the safety factor for impulse transmission in AMAN and AIDP, pairs of supramaximal stimuli at intervals of 1-5 ms were delivered to stimulate the median nerve at the wrist. At the 2- and 3-ms intervals, compound muscle action potentials (CMAPs) to the second stimulus were significantly smaller in AMAN patients (n = 7) than in normal subjects (n = 10) and AIDP patients (n = 6). Over 4 weeks from onset, the amplitude of both conditioned and unconditioned CMAPs returned toward normal, consistent with improvement in the safety factor for impulse transmission. The refractory period of transmission is impaired in AMAN, and the site of transmission failure is likely to be the motor nerve terminals. In addition to axonal degeneration, the critically but reversibly reduced safety factor is important in the pathophysiology of AMAN, and consistent with the rapid resolution of distal conduction block often seen in AMAN patients. Muscle Nerve 28: 683-689, 2003