Guillain–Barre Syndrome due to COVID 19 in a child with acute lymphoblastic leukemia: a case report

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Patients with COVID-19 typically have fever and respiratory illness; however, a wide range of other symptoms have been described. There are a growing number of reports of neurological manifestations of COVID-19. COVID-19 stimulates the inflammatory cells and produces a large number of inflammatory cytokines, and as a result the immune response is initiated. Guillain–Barre Syndrome (GBS) is an immune-mediated, inflammatory polyradiculoneuropathy associated with especially viral infections. Recently, numerous case reports have been published describing the relationship between COVID-19 and GBS. GBS is rarely associated with acute lymphoblastic leukemia (ALL) in children. We report a child with acute ALL who developed GBS two weeks after an acute COVID-19 infection. The improvement was favorable after intravenous immunoglobulins. GBS secondary to Covid-19 infection should be distinguished from chemotherapy-induced neurotoxicity, paraneoplastic syndrome, and the neoplastic infiltration of the spinal nerve roots. We discuss the differential diagnostic problems and possible pathogenic mechanisms of GBS in children with ALL.