



IACH

L-ASPARAGINASE NEUROLOGICAL TOXICITY: A SINGLE CASE.

Zapata Bautista R; Solé-Rodríguez M; Velarde López de Ayala P; Fernández Moreno F; Díaz Roldán B

Hospital Juan Ramón Jiménez, Huelva, Spain

INTRODUCTION

L-asparaginase (L-ASA) non-vascular neurological complications are infrequent (10%) and widely varied. Hyperammonemia, produced by L-ASA hydrolysis is thought to be a mechanism for this toxicity with ammonia values higher than 80 μ g/dL in the first treatment days. Hypertriglyceridemia (> 200 mg/dL) and hypercholesterolemia secondary to L-ASA are generally transient elevations and are related to the administration of dexamethasone plus L-ASA. Triglycerides above 1.000 mg/dL are associated with neurological symptoms due to increased cerebrospinal fluid (CSF) viscosity without producing acute pancreatitis.

RESULTS

Clinical case: A 10-year-old male patient was receiving lymphoblastic leukemia intensive chemotherapy (including mercaptopurine, vincristine, citarabine, dexamethasone, methotrexate and L-ASA) for both bone marrow and testicular late leukemia relapse when two days after receiving L-ASA he suffered fever and progressive cognitive impairment with lethargy, hyperalgesia, and aphasia. A cerebral CT showed bilateral increased density of CSF in the frontal subarachnoid space. Lumbar puncture revealed no abnormalities. Blood tests showed marked hyperammonemia (254 μ mol/L), hypertransaminasemia (ALT 327 mg/dL, AST 127 mg/dL), hypertriglyceridemia (3895 mg/dL), and lactic acid 15 mg/dL. Hyperammonemia was treated with lactulose and rifaximin. He also received empirical treatment with acyclovir, meropenem and vancomycin. All microbiological tests were negative. His condition improved progressively and the neurological symptoms resolved within 72 hours of the onset of symptoms.

CONCLUSIONS

The clinical signs and symptoms along with the radiological findings were consistent with toxic encephalopathy related to L-ASA. As other chemotherapy drugs can also be neurotoxic, such as vincristine and methotrexate, an adequate differential diagnosis including ammonia blood testing is essential to start adequate treatment.



IACH

Four horizontal grey bars stacked vertically, serving as a placeholder for text or a title.