

From Crisis to Recovery: How Healthcare Heroes Reverse Life-Threatening Condition Through Smart Clinical Searches

Mumbai, November 16, 2023 – In a medical marvel, a team of diligent healthcare professionals successfully identified and reversed a life-threatening condition in a patient who presented with altered sensorium. The individual, a gentleman in his 60s with a complex medical history, including diabetes, chronic kidney disease, atrial fibrillation, sleep apnea, neuropathy, and ongoing tuberculosis treatment, experienced a sudden decline in cognitive function.

The medical team, faced with a myriad of comorbidities and medications, embarked on a comprehensive diagnostic journey. Despite routine blood tests appearing normal and MRI brain scans showing no evidence of stroke or cerebral edema, the cause of the encephalopathy remained elusive. Undeterred, the healthcare professionals persisted in their search, leaving no stone unturned.

A crucial breakthrough came when the team decided to investigate the patient's serum valproic acid levels, despite the seemingly low dose of 400 mg/day. The suspicion arose due to soft signs such as new-onset heart block, thrombocytopenia, and mildly raised pancreatic enzymes. Astonishingly, the serum valproic acid level was found to be toxic, exceeding 300 ug/ml.

Further analysis revealed a fascinating interplay between medications, as the patient's antitubercular drugs, specifically isoniazid, were identified as contributors to the valproic acid toxicity. Isoniazid, a known inhibitor of valproic acid metabolism, coupled with ATT-induced hepatitis, led to a decrease in the clearance of valproic acid, resulting in toxic levels.

Speaking on this case study **Dr Sheetal Goyal, Consultant Neurologist, Wockhardt Hospitals Mumbai Central** said “This case exemplifies the intricate interplay of medications in patients with complex medical histories. The astute recognition of valproic acid toxicity, driven by a careful consideration of soft signs and a smart clinical search, underscores the critical importance of thorough diagnostic investigations. The collaboration among healthcare professionals led to the timely cessation of valproic acid, averting the need for an unnecessary pacemaker implantation. It serves as a poignant reminder for physicians to remain vigilant in the face of sudden deteriorations, urging them to explore beyond routine tests. This remarkable recovery stands as a testament to the transformative impact of precision medicine and the relentless pursuit of answers in the realm of neurology.”

With the immediate cessation of valproic acid, the patient experienced a rapid recovery. The encephalopathy lifted, pancreatic enzyme levels decreased, and, remarkably, the atrioventricular (AV) block reversed. The patient, who was initially considered for a cardiac pacemaker, ultimately walked out of the hospital without the need for such an intervention.

This case underscores the importance of meticulous and thorough diagnostic investigations, especially in complex medical scenarios. The healthcare team's astute clinical acumen prevented an unnecessary

pacemaker implantation, highlighting the significance of smart clinical searches in identifying reversible causes of sudden health deterioration.

The medical community is encouraged to consider medication interactions and side effects, even at seemingly standard doses, when faced with unexplained clinical manifestations. This breakthrough serves as a testament to the power of collaborative and comprehensive healthcare, where a relentless pursuit of answers can lead to life-saving interventions.