Consolidation in Acute Promyelocytic Leukemia (APL)

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Introduction

- **APL is the rarest form of acute myelogenous leukemia. Advances in the treatment of APL have transformed this disease from a condition associated with significant morbidity and mortality to one with an excellent outcome , by the introduction of all-trans retinoic acid (ATRA; tretinoin) and arsenic trioxide (ATO) . (1)**

Case presentation

- **We report a case of 68-year-old male who presented with delirium at the Saint Louis Hospital in July 2016. He was diagnosed with AML and achieved complete remission on day 10 of the first consolidation by ATRA/ATO.(2) (3)**
- **A neurologic examination revealed fluctuating delirium with temporospatial disorientation. During exploration, he was unable to focus. Cranial nerves were fully intact, and muscle strength was 5/5 throughout. He was hyper-reflexive on the right side compared with the left, and his toes were curled bilaterally, with no tremors or dysmetria**
- **After a few hours, the patient experienced a sudden neurological deterioration with coma Glasgow 3. He was transferred to the intensive care unit. Consolidation therapy was discontinued due to neurological degradation**
- **A Total CT scan was normal, and MRI showed no T2 signal changes. A lumbar puncture showed a WBC count 1, glucose 4.46 mmol/l, and protein 0.54. CSF cultures were negative, and a normal EEG.**
- **Investigations revealed a WBC of 6.64/mm3, hemoglobin 8.6 g/l, blasts 0 %, normal electrolytes, bacteriology, and virology were negatives. The level of arsenic in the urine was 11394 ug/L (N 0 - 50 ug/L)**
- **The results of CNS investigations were normal. Thus, the focus of the differential diagnosis shifted towards a primary psychiatric disorder. Based on consultation with the psychiatrist, there was no basis for a psychiatric decompression of thymic origin. The patient was diagnosed with an iatrogenic confusional syndrome caused by arsenic toxicity.**
- **The patient was treated with succimer 600 mg TID for 10 days with monitoring of the level of arsenic in the urine.**

Discussion

- **This case report describes a rare case of of Unusual Toxicity of Arsenic Trioxide (ATO) .**
- **No reported cases in Acute Promyelocytic Leukemia (APL) showed this neurologic toxicity,**
- **Arsenic trioxide is not known to cause encephalopathic side effects in leukemia patients. However, the side effect observed in this patient were reversible**

Conclusions

- **Our case of a 68 year-old male with Unusual Toxicity of Arsenic Trioxide (ATO) on Day 10 of Consolidation in Acute Promyelocytic Leukemia (APL) is quite unique and warrants to be reported.**
- **Arsenic Trioxide (ATO) demonstrates a noteworthy evolution in treatment options by offering patients the hope of living longer and experiencing significant improvement in quality of life.**
- **There is a need to conduct more observational and experimental studies to understand the mechanisms of Toxicity of Arsenic Trioxide ,**
- **Monitor for signs of Toxicity of Arsenic Trioxide or intolerance and changes in symptom severity based on routine assessments with a validated objective tool such as the ATO-SAF.**

References

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