

Cocaine induced thrombotic microangiopathy with acute kidney injury, a rare presentation

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Thrombotic microangiopathy (TMA) is a rare potentially life-threatening condition caused by small –vessel platelet microthrombi. The primary TMA Syndromes include thrombotic thrombocytopenia purpura (TTP), Shiga toxin mediated haemolytic uremic syndrome (STEC-HUS), drug induced TMA(DITMA) and complement mediated TMA. Clinical features include microangiopathic haemolytic anaemia and thrombocytopenia, and may have acute kidney injury, neurological abnormalities and cardiac ischemia. Drug induced TMA is either immune mediated or non-immune mediated and cocaine use is associated with non-immune DITMA (rarely reported).

We present a case of 29-year-old male with PMH of HTN and T2DM who presented in September 2019; with features of microangiopathic haemolytic anaemia, thrombocytopenia and acute kidney injury (thrombotic microangiopathy). On direct questioning on admission; the patient denied the use of any recreational drugs. His symptoms were abdominal, chest pain and witnessed collapses at home. His admission blood results, immunology screen and radiology results are shown in Table 1. His presentation was initially suggestive of TTP; hence treatment was started comprising of plasma exchange and acute hemodialysis as; he was oligo-anuric. The following day; his level of consciousness altered where his Glasgow Coma Scale (GCS) was 7/15; He got transferred to intensive care unit (ICU); where he needed intubation, mechanical ventilation (MV) under minimal sedation and cardiovascular support (CVS) in the form of inotropes; to support his airway, breathing and circulation. An emergency CT head showed multiple infarctions.

While he was on ICU, he continued to receive of plasma exchange. Newcastle Complement Centre was contacted and they recommended starting IV Eculizumab; pending further results. Toxin mediated HUS (E.coli O157) was excluded; with samples submitted to PHE Colindale Bacteriology were found to be negative. His ADAMTS13; was normal. Complement mediated TMA was investigated for at Newcastle (immunologic and genetic evaluation were conducted) and these results came back negative; by then he had received two doses of Eculizumab. In collaboration with the team in Newcastle; the decision was made to halt further Eculizumab & further plasma exchange. Further corroboration was sought from the patient and his family; which revealed that he had used cocaine recreationally prior to admission. Saved toxicology samples from admission, tested positive for cocaine. We believe that this a case of non-immune DITMA. This patient's hospital stay was turbulent; where he required two further admissions to ICU; as he had developed apnoeic episodes (associated with multiple infarctions); requiring MV and CVS support. He further needed a percutaneous tracheostomy and gradual weaning of MV. He remained dialysis dependent throughout. It was felt that performing a native renal biopsy; while on ICU, inappropriately risky; particularly; as it would not have changed his management at that point. This patient remains dialysis dependent. He currently continuing to receive neurological rehabilitation inpatient; where he has resumed independent oral intake and enjoys conversing with family.

To summarize, cocaine use is associated with thrombotic microangiopathy although rarely reported and admitting physician need to be alert of this possibility.