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ABSTRACT N. PO91

DISSEMINATED INTRAVASCULAR COAGULATION WITH DEEP VEIN THROMBOSIS IN A FRAIL PATIENT: AN EXTREME MANIFESTATION TRIGGERED BY SEPSIS DURING SGLT2I THERAPY.

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Background

Disseminated intravascular coagulation (DIC) is a life-threatening thrombotic or hemorrhagic complication, often triggered by severe sepsis. In frail patients, predisposing conditions such as dehydration, diabetic ketoacidosis (DKA), and SGLT2 inhibitor (SGLT2i) therapy may amplify the inflammatory cascade and coagulation imbalance. We report a case of severe DIC with central venous thrombosis associated with vancomycin-resistant Enterococcus faecalis (VRE) sepsis, successfully treated with antibiotics and therapeutic anticoagulation.

Case Report

An 83-year-old woman with diabetes, heart failure, and cognitive impairment was admitted with fever, pyuria, hyperglycemia, metabolic acidosis, marked dehydration and acute kidney injury. Her therapy included beta blockers, ACE-inhibitors, MRA and SGLT2i. A diagnosis of SGLT2i associated urosepsis and DKA was made. Initial management included IV empirics antibiotics, fluids, and insulin infusion. To ensure stable venous access, a central venous catheter (CVC) was placed in the left subclavian vein. On day three, she continued to have fever despite antibiotic therapy and she developed monolateral upper left limb edema. Doppler ultrasound confirmed deep vein thrombosis extending from the CVC to the left subclavian vein. Laboratory tests revealed overt DIC: platelets 69,000/mm^3, unmeasurable PT and aPTT, fibrinogen 37 mg/dL, D-dimer 9,770 ng/mL. Given the thrombotic phenotype and absence of active bleeding, therapeutic low molecular weight heparin was initiated. Urinoculture grew positive for Enterococcus faecalis vancomycin resistant. Previous antibiotic therapy was stopped, and Linezolid was started. Over the following days, clinical and laboratory improvement was observed: normalization of coagulation parameters (fibrinogen 190 mg/dL, platelets 129,000/mm^3, D-dimer 1.11 ng/mL) and general stabilization. The patient was discharged in good condition.

Conclusions

Sodium-glucose cotransporter 2 inhibitors (SGLT2i) are widely used in the treatment of type 2 diabetes and heart failure. While offering significant metabolic and cardiovascular benefits, they can pose considerable risks in vulnerable populations, particularly the elderly and frail. SGLT2i function by decreasing glucose reabsorption from the proximal convoluted tubule and increasing urinary glucose excretion. Consequently, this leads to reduced carbohydrate usage and prompts a shift toward the utilization of fatty acids, resulting in ketogenesis. Studies in rats have shown that SGLT2is can increase plasma concentrations of catecholamines and cortisol due to hypovolemia, leading to DKA. SGLT2i are also associated with an increased risk of urinary and genital tract infections, which in this instance evolved into systemic VRE sepsis. The resulting inflammatory response, gastrointestinal symptoms, likely contributed to dehydration and the onset of DKA. In turn, systemic inflammation and endothelial damage precipitated a fulminant DIC, with monolateral upper limb edema due to overt thrombosis of a CVC. Although anticoagulation in the context of DIC remains debated due to the risk of bleeding, therapeutic anticoagulation was deemed appropriate given the presence of thrombosis and the absence of hemorrhage. The clinical course confirmed both the safety and efficacy of LMWH in this case.

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