



Capillary leak syndrome following COVID-19 vaccination

Authors: Ana Đuran¹, Lorena Dolački¹, Borna Rupčić¹, Katarina Bojanić, MD² (mentor)

¹ School of Medicine, University of Zagreb, Croatia

² Health Center Zagreb-Centar, Croatia

Background:

Capillary leak syndrome (CLS), also known as Clarkson's disease emerged as a new adverse event after immunization associated to COVID-19 vaccination. CLS is a rare condition characterized by increased capillary permeability, resulting in hypoalbuminemia, hypotension and oedema mainly in the upper and lower limbs.

Case presentation:

A 60-year-old woman presented to the emergency department due to onset of dyspnea on exertion, palpitations and weight gain of 10 kg in the last few weeks. She reported receiving Johnson & Johnson vaccine against COVID-19 three weeks prior. Physical examination findings included symmetrical oedema of legs and abdomen above the chest wall level, with positive fluid wave test. Laboratory tests showed significantly elevated urea (23.6 mmol/L) and creatinine (184 mmol/L). After further diagnostics proteinuria 5 g/dU with significantly reduced glomerular filtration (eGFR 24 ml/min/1.73 m²) and hypoalbuminemia were determined. She was diagnosed with an acute kidney injury as part of the capillary leak syndrome that occurred as a result of the vaccine against COVID-19. Ultrasound and kidney biopsy were performed to exclude other causes of kidney failure. Patient refused corticosteroid therapy, so she was treated empirically with furosemide, fluid and salt restriction, thromboprophylaxis with low molecular weight heparin and antibiotic therapy with ceftriaxone. The patient responded to the treatment with a gradual recovery of kidney function, but with the persistence of mild to moderate oedema.

Conclusion:

Although capillary leak syndrome is a rare side effect of the Johnson & Johnson vaccine against COVID-19, it should be considered in patients who present with oedema, haemoconcentration and hypotension. There are no specific diagnostic criteria for CLS, so it may be challenging to recognise this disease. Since the causal relationship between COVID-19 vaccine and CLS has not yet been established, more research is needed.

Keywords:

capillary leak syndrome, COVID-19 vaccination, side effect