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Dialysis

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A case of heparin-induced thrombocytopenia in a patient undergoing hemodialysis

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Background: Heparin has remained the most commonly used anticoagulant for patients undergoing hemodialysis. It is usually safe to use but can have severe adverse effects in some cases. Heparin-induced thrombocytopenia (HIT) is a life-threatening complication of exposure to heparin. It results from an autoantibody directed against endogenous platelet factor 4 (PF4) in complex with heparin, which activates platelets and can cause catastrophic arterial and venous thromboses. We present a case of HIT in a patient who received argatroban concomitantly with warfarin during hemodialysis.

An 80-year-old woman with chronic kidney disease presented with weakness, nausea, and edema. A right jugular tunneled catheter was inserted, and hemodialysis was started with administration of regular doses of heparin to prevent coagulation. Her platelet count was 218×10^3/mL at the first session. Seven days after the first heparin administration, her platelet count decreased to 15×10^3/mL. No other causes of thrombocytopenia were found. Her 4T's score was 6, indicating a high probability of HIT. Anti-PF4 antibodies were detected in the enzyme-linked immunosorbent assay. We discontinued the heparin therapy and administered a heparin-free dialysis regimen and argatroban, a direct thrombin inhibitor. Warfarin therapy was started when her platelet count reached 100×10^3/mL and her platelet count substantially increased to 250×10^3/mL. However her platelet count decreased to 70×10^3/mL again after hemodialysis. Although we administered a heparin-free dialysis regimen, we performed heparin rinsing to prevent coagulation in the circuit. Her platelet count normalized as soon as the circuit was free of the heparin rinse. Thereafter, she recovered her health.

HIT has a mortality rate as high as 20%. In our case, we successfully treated HIT with concomitant administration of argatroban with warfarin during hemodialysis. The discontinuation of heparin therapy and the subsequent administration of argatroban were safe and effective. However, all details of the treatment must be considered, including the method of rinsing the circuit from heparin before performing hemodialysis, which we missed in our case.

Methods: N/A

Results: N/A

Conclusion: N/A

Keywords: argatroban, hemodialysis, heparin induced thrombocytopenia