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Cases of Propofol-Related Infusion Syndrome Detected During CRRT by Lipemic Clot Formation

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Case Study : Background: Propofol is widely used for sedation in intensive care units, particularly in surgical ICUs for patients with elevated intracranial pressure or mechanical ventilation. Propofol-related infusion syndrome (PRIS) is a rare but life-threatening complication, typically associated with prolonged infusion and critical illness. There is no established preventive strategy. We report four cases of suspected PRIS identified by lipemic clot formation in continuous renal replacement therapy (CRRT) filters. Case Presentation: Case 1: A 92-year-old woman with intracerebral hemorrhage underwent burr hole trephination and received CRRT for intracranial pressure control. On CRRT day 5, a white clot was observed in the filter. Triglycerides (TG) increased from 125 mg/dL to 885 mg/dL, and AST/ALT rose to 2354/488 U/L. After 7 days of propofol infusion, the drug was discontinued. The patient deteriorated and died 3 days later. Case 2: A 61-year-old woman with subarachnoid hemorrhage underwent coil embolization and CRRT. On CRRT day 4, lipemic clotting was noted with TG 833 mg/dL and AST/ALT 7000/1184 U/L. Propofol was stopped, and the patient gradually improved and was discharged on hospital day 64. Case 3: A 78-year-old man with trauma-induced AKI received CRRT. On day 2, filter abnormalities with elevated TG and liver enzymes were detected. Laboratory findings improved after discontinuation of propofol; however, he later died from ARDS. Case 4: A 68-year-old man with septic AKI developed similar findings on CRRT day 3. Propofol was discontinued promptly, and he recovered. Conclusion: PRIS is a critical condition with significant impact on prognosis. In patients receiving CRRT, visual detection of lipemic clot formation may provide an early clinical clue. Careful monitoring is essential when propofol is administered during CRRT.

figure.jpg

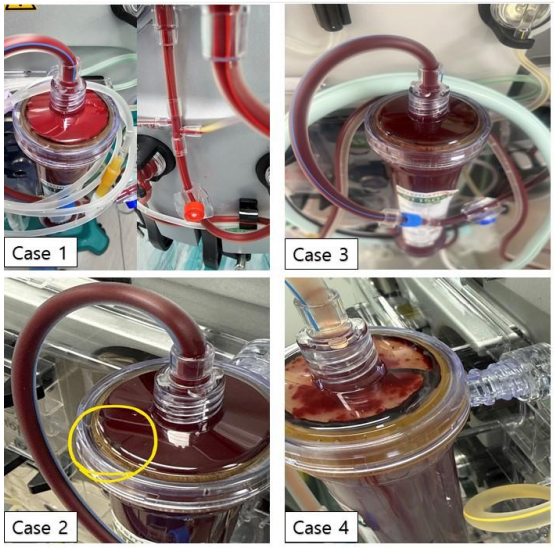

Figure 1.
Representative CRRT filter images showing white lipemic clot formation in four patients with suspected PRIS. Images are arranged from Case 1 to Case 4. Visible filter changes preceded biochemical confirmation of hypertriglyceridemia and hepatocellular injury.

figure.jpg

Table 1. Clinical and Biochemical Features of Four PRIS Cases During CRRT

CaseNo	Case1	Case2	Case3	Case4
SEX	F	F	M	M
AGE	92	61	78	68
propofol duration(d)	7	6	6	4
Baseline TG(mg/dl)	125	79	106	165
After filter abnormality: TG measured(mg/dl)	885	843	710	522
TG after propofol discontinuation(mg/dl)		158	181	272
Baseline AST(U/L)	57	36	85	67
Baseline ALT(U/L)	27	33	41	19
After filter abnormality: AST measured(U/L)	2354	7000	171	110
After filter abnormality: ALT measured(U/L)	488	1184	58	58
AST after propofol discontinuation(U/L)	5742	3392	57	49
ALT after propofol discontinuation(U/L)	1119	976	57	39
Outcome (Hospital day)	Died (HD 10)	Survived (HD64)	Died (HD48)	Survived (HD62)