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Three cases of prolongation of coagulation profiles during the Molecular Adsorbent Recirculating System (MARS) treatment

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Case Study:

Molecular Adsorbent Recirculating System® (MARS) is an extracorporeal liver support device. MARS treatment may increase in thrombin time and the platelet function. However, we experienced the three cases of prolongation of coagulation profiles such as PT, PTT, and fibrinogen during MARS treatment

Case 1. A 58-year-old male was hospitalized for advanced liver cirrhosis with abdominal pain that began four days ago. Before session of MARS, total bilirubin was 44.9 mg/dL, fibrinogen 155.0 mg/dL, PT 19.8 sec, PTT 43.7 sec. After session of MARS, total bilirubin was 31.6 mg/dL, fibrinogen 61.0 mg/dL, PT 22.3 sec, and PTT 64.5 sec. To evaluate the cause of prolonged coagulation profiles, factor assays were performed immediately before and 30 minutes after commencement of MARS. There was an increases of actor activities during MARS treatment. He eventually had a successful liver transplant operation.

Case 2. A 60-year-old male was hospitalized with aggravated liver function. He had a 10-Year history of chronic hepatitis B but has stopped taking entecavir of his own free will. Total bilirubin was 41.3 mg/dL, fibrinogen 64.0 mg/dL, PT 27.4 sec, PTT 49.7 sec before MARS treatment. The next day after session of MARS, total bilirubin was 33.0 mg/dL, fibrinogen 40.0 mg/dL, PT 33.0 sec, and PTT 60.8 sec.

Case 3. A 48-year-old female was hospitalized for dialysis due to chronic kidney disease and hepatorenal syndrome. Before treatment with MARS, total bilirubin was 44.5 mg/dL, fibrinogen 197 mg/dL, PT 44.1 sec, PTT 44.5 sec. MARS proceeded, and total bilirubin was 35.1 mg/dL, fibrinogen 32 mg/dL, PT above 300 sec, PTT 61.4 sec.

Conclusion

In this report, we described three cases of prolonged coagulation profiles during MARS treatment. Although coagulation profiles can be changed during MARS, there is no bleeding complications during MARS treatment.