

Innovative Management of Malaria-Induced Liver Dysfunction: The Role of CytoSorb® Hemoadsorption – A Case Report

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Introduction

This case emphasizes the importance of integrating advanced medical technologies with standard therapeutic approaches in the management of severe malaria.

Methods

A 53-year-old man was admitted to our ICU with hyperpyrexia ($>38^{\circ}\text{C}$), dyspnea, asthenia, mental confusion, anemia, and hyperbilirubinemia after recent travel to Africa. PCR diagnostic testing confirmed *Plasmodium falciparum* malaria with 30% parasitemia. Blood tests showed elevated PCT (>100 ng/ml), CRP (20 mg/dL), Hb (8.0 g/dL), total bilirubin (32 mg/dL, direct bilirubin 20 mg/dL), pancreatic amylase 241 IU/L, lipase 253 IU/L, creatinine 1.6 mg/dL. Imaging via CT scan revealed moderate bilateral pleural and perihepatic effusion. Despite these findings, hemodynamic and respiratory parameters remained stable, with high-flow oxygentherapy proving sufficient. Diuresis was always maintained. Intravenous artesunate was administered at 240 mg (T0, T12, T24, T48), under QT interval monitoring, accompanied by supportive therapy. To address persistently high bilirubin and inflammation markers, extracorporeal hemoperfusion adsorption (E.H.A.) with a CytoSorb® filter started on the third day for 24 hours under continuous heparin infusion.

Results

The procedure yielded significant laboratory improvements, notably in bilirubin and PCT/CRP reduction, while anemia was managed through transfusion. A second E.H.A. cycle was implemented on the fourth day, resulting in further clinical and laboratory enhancements. On the fifth day, the patient commenced a three-day antimalarial course of Atovaquone/Proguanil (250 mg/100 mg/day). By the eighth day, he was stable enough to be transferred to the infectious diseases ward and was eventually discharged home on the fourteenth day.

Conclusion

E.H.A. with CytoSorb® disrupted the albumin-bilirubin complex and effectively adsorbed bilirubin, addressing hyperbilirubinemia and cytokine overload. This intervention served as a crucial "bridge" therapy, enabling the antimalarial regimen to take effect. The patient's rapid improvement, evidenced by reduced bilirubin levels, enhanced neurological status, and resolution of jaundice, highlights the potential of E.H.A. as an adjunct treatment in complex malaria cases.

