

Efficacy of Hemoadsorption Therapy in the Treatment of Post-surgical hyperbilirubinemia due to aortic dissection: a case report

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Background

Aortic dissection represents a complex surgical condition, often associated with high morbidity and multiorgan complications in the postoperative period, such as ischemic liver injury due to hypoperfusion. This ischemic injury directly results in a hepatic overproduction of bilirubin. Timely implementation of extracorporeal support therapies, such as CRRT combined with Cytosorb -the only certified adsorbent cartridge for the removal from whole blood of bilirubin, cytokines, myoglobin, ticagrelor, and rivaroxaban- can lead to a marked improvement in clinical parameters.

Case Description

The patient underwent surgical intervention for aortic dissection. The initial clinical presentation was characterized by preoperative cardiac tamponade and biventricular systolic dysfunction, which required intensive inotropic support. In the postoperative course, there was a marked elevation of hepatic enzymes, with total bilirubin peaking at 19.7 mg/dL and direct bilirubin at 16.0 mg/dL, suggesting ischemic liver damage due to hypoperfusion resulting from hemodynamic compromise. Confronted with hyperbilirubinemia, the patient was treated with CRRT and Cytosorb (administered for 48 hours using two cartridges) with the aim of rapidly reducing bilirubin levels and controlling the inflammatory response.

Laboratory evaluations showed a progressive normalization of hepatic parameters, with a decrease in both total and direct bilirubin levels (fig. 1), accompanied by an overall clinical improvement.

This improvement is evident from other liver function parameters (compared pre- and post-treatment), such as AST decreasing from 59 U/L to 20 U/L, CPK decreasing from 334 U/L to 71 U/L, and LDH decreasing from 1004 U/L to 366 U/L.

The prompt therapeutic intervention allowed the normalization of laboratory values, gradual weaning from CRRT, and the patient's discharge.

Conclusion

The use of Cytosorb enabled the containment of the systemic inflammatory response and the mitigation of postoperative ischemic liver injury, thereby facilitating the recovery of hepatic function. Cytosorb proved effective in reducing elevated bilirubin levels, improving liver function, and stabilizing hemodynamic status.

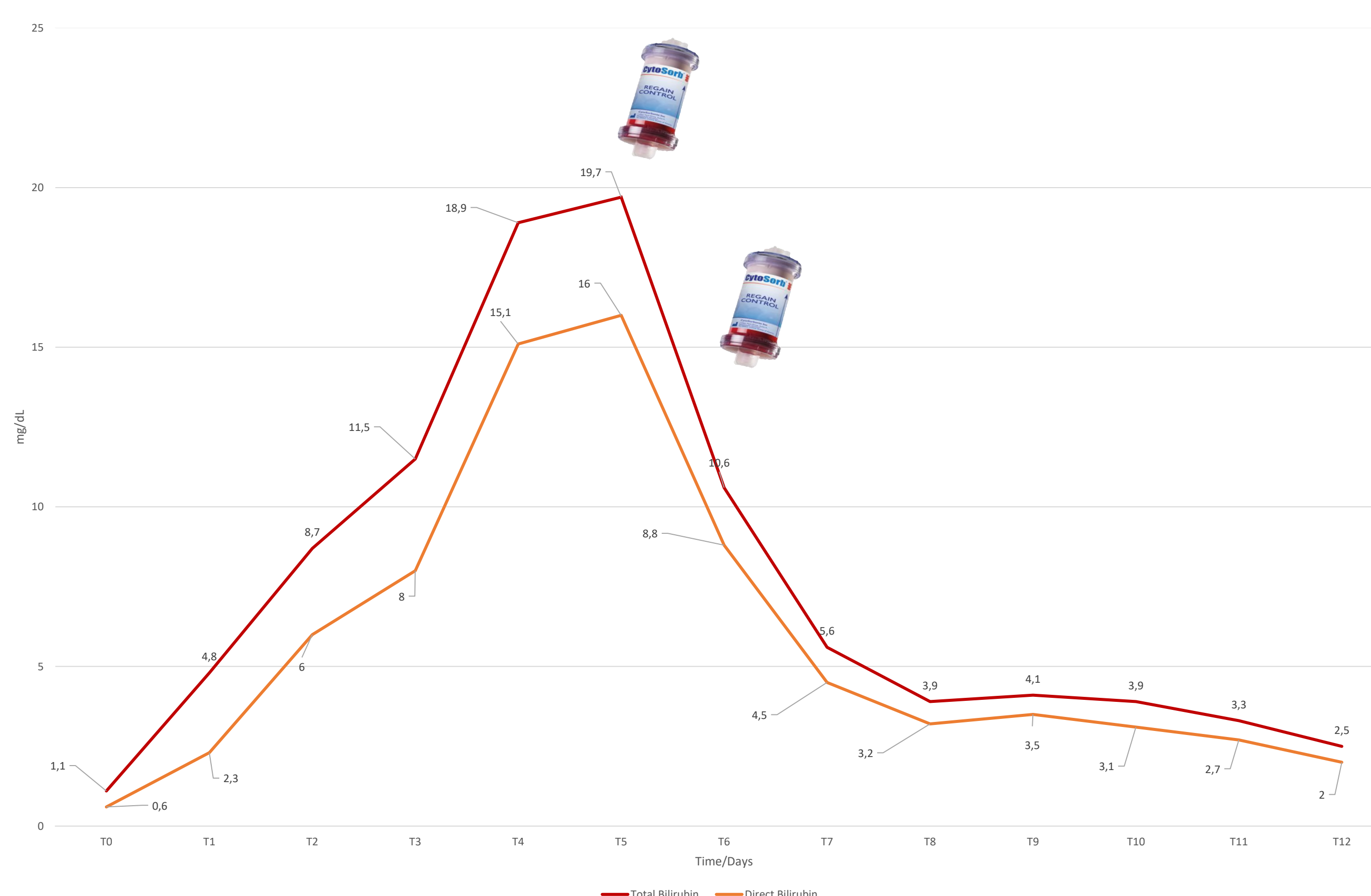


Figure 1: Total and Direct Bilirubin trend