

INHIBITION OF THROMBOCYTE AGGREGATION DURING EXTRACORPOREAL LUNG ASSIST: A CASE REPORT

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PERFUSION. 2007; 22(4):293-7

CE1-73

Objective

The authors describe a method that complements conventional continuous heparinisation with the administration of acetylsalicylic acid (ASA) to inhibit thrombocyte aggregation in extracorporeal lung assist (iLA).

Study Design

Case report

Methods

In a patient treated with iLA for acute lung failure, a marked drop in blood flow rate in the extracorporeal system occurred on day 4 despite adequate anticoagulation. Simultaneously, gas exchange performance worsened, which was considered further evidence for possible deposits in consequence of clotting. ASA was given daily by injecting 100mg of the substance into the arterial line of the extracorporeal circuit for 31 days. The effectiveness of ASA was checked through clinical observation of the membrane lung, calculation of gas exchange capacity and measurement of the inhibition of thrombocyte aggregation according to Born. Following use, electron-microscopical analysis of the dismantled oxygenator was performed.

Results

With ASA application, blood flow, CO₂ elimination and oxygenation capacity returned to normal. Clinically and electron-microscopically, only minor deposits on the gas exchange membrane could be detected. Measurements of aggregation showed a suppression of the ability of thrombocytic aggregation of about 25%, this effect occurred within 12-24 hours and could be maintained during treatment without difficulty.

Commentary

Based on theoretical considerations, clinical experiences and scientific literature, a method was developed to avoid or respectively treat coagulation-related functional impairment of iLA. Thereby, in addition to heparin administration, low dose ASA is given. The effect was demonstrated in a case presentation and could subsequently be confirmed in a series of cases.

