



Increased cerebral blood flow velocities assessed by transcranial Doppler examination is associated with complement activation after cardiopulmonary bypass

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Mots-clés	cardiopulmonary bypass [9], cerebral blood flow velocity [10], complement activation [11], transcranial doppler [12]
Résumé en anglais	<p>The role of complement activation on the cerebral vasculature after cardiopulmonary bypass (CPB) is unclear. The goal of the study was to assess whether heparin-coated CPB reduces complement activation, and influences cerebral blood flow velocities (CBFV). Twenty-four patients undergoing coronary surgery were randomly allocated to non-coated (NC-group) or heparin-coated (HC-group) CPB. Complement activation was assessed by measuring sC5b-9. Transcranial Doppler (TCD) was performed on middle cerebral arteries before and after CPB. Systolic (SV), diastolic (DV) and mean (MV) CBFV were measured. Significant increase of sC5b-9 ($p=0.003$) was observed in the NC-group and CBFV increased after CPB (SV by 27%, $p=0.05$; DV by 40%, $p=0.06$; MV by 33%, $p=0.04$) whereas no changes were detected in the HC-group. TCD values were higher in the NC-group than in the HC-group (SV, $p=0.04$; DV, $p=0.03$; MV, $p=0.03$) although cardiac index, systemic vascular resistance, haematocrit and pCO_2 were similar. Postoperative SV, DV and MV were significantly correlated with sC5b-9 ($r=0.583$, $p=0.009$; $r=0.581$, $p=0.009$; $r=0.598$, $p=0.007$, respectively). Increased CBFV after CPB are correlated to the level of complement activation and may be controlled by heparin-coated circuits.</p>
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Liens

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