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Mannose-binding lectin (MBL) and postoperative complications rate in pediatric cardiac surgery

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Despite permanent improvement of congenital heart disease surgical technique and perioperative care still significant number of procedures remain complicated or unsuccessful. The research continues into the impact of patient's individual susceptibility to complications as a consequence of genetically determined possibility to react to wide spectrum of stressful stimuli occurring during surgery: cardiopulmonary bypass (CPB), infection, hypothermia and others. The attention has been paid to the complement system which is strongly involved in response to special conditions generated during cardiac surgery procedure. The problem was intensely investigated in adult population but has been up till now not elucidated in pediatric patients.We investigated the association between MBL serum concentrations, corresponding *MBL2* genotypes and the postoperative course of children in whom cardiac surgery with the use of CPB was performed, in a prospective study. Blood/serum samples were collected from 195 patients. The obtained results suggest protective, beneficial effect of low MBL serum levels. The incidence of SIRS was lower in children with preoperative MBL concentrations<1000 ng/ml and point mutations within exon 1 of the *MBL2* gene (A/O and O/O genotypes). MBL deficient patients (<100 ng/ml) with very low MBL levels had generally shorter ICU length of stay and lower inotropic score. In contrast, high MBL-producing genotypes (YA/YA) were more common among children who developed SIRS.

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