

Necrotizing Enterocolitis In Newborns Before And After Critical Congenital Heart Diseases Repair: Our Treatment Approaches and Outcomes

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Critical congenital heart disease (CCHD) course in newborns is commonly exacerbated with necrotising enterocolitis (NEC). NEC generally consequences of the hypoxic ischemic injury combined with alterations of the gastrointestinal microbiome.

The aim of our study was to discuss clinical approach to NEC treatment or prevention in newborns with CCHD.

Materials and methods: 321 newborns (3.4 ± 0.7 days, 3.1 ± 0.8 kg) with CCHD underwent surgical repair in Neonates Department between 01.2013 and 06.2015. All patients required emergent surgical intervention due to CCHD incidence. At the hospital stage 23% (n=73) of infants were diagnosed: 15% (n=11) on admission were diagnosed with active NEC, 85% (n=62) showed .high probability signs of NEC development.

Results: The CCHD range in newborns with NEC was primarily represented by aortic obstructive lesions (n=42, 57%), TGA (n=18, 25%), pulmonary atresia (n=6, 9%), an extreme form of TOF (n=4, 5%), HLHS (n=3, 4%). Of 62 of children with the impendence of NEC development the implementation of preventive treatment was started at the preoperative stage in 63% (n=39) of cases, and in 37%(n=23) of cases it was postponed to the postoperative period, due to the need for emergency surgery.

Children with the current NEC received corresponding treatment before surgery with the purpose of the relief of this complication: 1) broad-spectrum antibiotic treatment 2) control of the intestinal tract condition, inflammation tests, hemostasis control; hemostatic therapy was applied if necessary; 3) enteral pause, parenteral nutrition with the exception of lipids in the acute phase; 4) the continuation of therapy started before the CCHD repair in the postoperative period — depending on the staging process.

36 patients (49%) were diagnosed with NEC development during the postop: 4 patients had NEC on admission, 9 patients showed high probability signs of NEC development during pre-op and received preventive treatment, 23 patients showed high probability signs of NEC development and did not receive preventive treatment 68 (93%) of patients were cured using medicinal treatment only, and 5 (7%) infants required surgical intervention dui to enterobrosia.

Conclusions: NEC treatment in CCHD patients should start preliminary to the surgical repair, and should be resumed in postoperative period.