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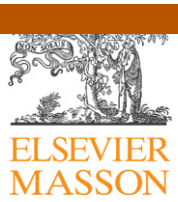

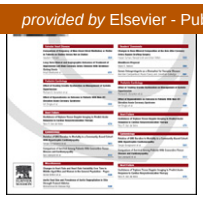

Poster session

Friday, 12 September 2014 — 12h15—13h45

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ACT variation after a weight-based heparin bolus before CPB is not predictable in infant

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Background In pediatric cardiac surgery, anticoagulation protocols are derived from adult protocols. Age, Antithrombin III level, and capacity to generate thrombin are factors that affect unfractionated heparin (UFH) action in children. A starting UFH dose of 400 UI/kg is recommended to get an Activated Clotting Time (ACT) target over 400 seconds. In our daily practice, we noticed a wide range of ACT increase (ΔACT) after this standardized weight based bolus of UFH.

Objective To define factors affecting UFH effectiveness based on ΔACT before CPB initialization in pediatric cardiac surgery.

Methods A retrospective chart review of patient undergoing cardiac surgery requiring CPB in a single university hospital was performed. Patients receiving preoperative anticoagulation therapy or platelet aggregation inhibitors were excluded. We searched predictive factors for ΔACT. We defined 2 groups: hyperrespondents (HR; ΔACT > 500) and normorespondents (NR; ΔACT < 500).

Results Seventy-nine charts were reviewed. Median [25—75] age and weight were respectively 13.8 [5—72] months and 8.7 kg [5.5—18.8]. UFH pre CPB bolus was 384 [358—410] to increase pre operative ACT from 124 [115—137] to 536 s[463—582]. HR are younger (4.9 [3.7—13] vs 24.6 [5.7—76] months, $P < 0.05$) and have smaller weight (6,1 [4.6—7.8] vs 10 kg[5,8—19.5], $P < 0,05$) than NR. ΔACT is correlated to UFH dose for patients > 5 months ($r = 0.59$ $P = 0.00001$) and > 5 kg ($r = 0.54$ $P = 0.00001$) for with a predictive ΔACT of 386 s [325—443]. There is no correlation between ΔACT and UFH dose for patients < 5 months and < 5 kg.

Conclusion A dose UFH of 400 UI/kg before starting CPB in pediatrics is overestimated, especially for children < 5 months and < 5 kg. Accurate dose for ACT target > 400 s in this specific population should be calculated using other method that still needs to be developed to avoid complications associated to excessive dose of UFH.

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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NTproBNP after Fontan anastomosis: Early versus late post-operative value

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Introduction NTproBNP assessment remains limited in congenital cardiology, particularly in patients with univentricular heart physiology who underwent total cavopulmonary connection (TCPC) where long-term prognosis is greatly related to ventricular function.

Aim To evaluate the NTproBNP after TCPC and seek a correlation with clinical and laboratory monitoring.

Methods A retrospective study was initiated on all TCPC patients born after 1991. Demographic, anatomical, echocradiography data and NTproBNP serum level were collected following the early post-operative period. Routine NTproBNP screening for these patients was initiated in our institution in 2008. NTproBNP Z-score was calculated based on our published equation from healthy children.

Results Of a total of 46 patients who completed TCPC, 5 died post-operatively. All remaining 41 subjects had available NTproBNP beyond the immediate post-operative period and constituted the study population. NTproBNP was significantly elevated during the first post-operative year (Z-score 1.9 ± 1.17) compared to mid-term follow-up (3—5 years) (Z-score 1.23 ± 0.72), $P = 0.03$. Mean NTproBNP Z-score increased in the subsequent years to 1.6 ± 1.1 ($P = 0.21$ vs year-1 post TCPC, and 0.06 vs mid-term). Z-scores > 2.0 were associated with a lower serum albumin (39.2 ± 3.3 vs 44.4 ± 4.4 mg/dL; $P = 0.04$), but not with other laboratory tests. There were however no identifiable predisposing clinical factors (i.e., ventricular morphology, age), preoperative hemodynamic data (PVRi, mean pulmonary artery pressure, Nakata index), surgical specifics (type of TCPC, presence of fenestration, pacemaker implantation), or postoperative events.

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