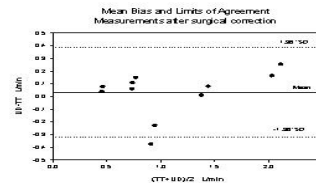


Conclusions: In this study oral ibuprofen is shown to be as effective as IV form for the treatment of PDA, with similar side effects. Considering the cost and availability of IV form, it can be the drug of choice.



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ACCURACY AND PRECISION OF A NEW METHOD FOR HEMODYNAMIC ASSESSMENT IN CHILDREN UNDERGOING CARDIAC SURGERY BASED ON ULTRASOUND DILUTION METHODOLOGY

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Background and aims: This novel monitor (*COstatus*, Transonic Systems Inc., Ithaca, NY) uses existent intravascular lines for injections of isotonic saline to measure CO and BV (blood volume) by ultrasound dilution methodology. It can also identify the presence of cardiac shunts. We investigated the accuracy and precision of the method during pediatric congenital heart surgery (CHS).

Methods: 9 pts scheduled for CHS [age 8 (0-39) months; weight 7.6 (3.2 - 14.1) kg] were included. Measurements (2-4 injections of saline 0.5-1 mL/kg /session) started in the OR, before/immediately after CPB and then repeated in PICU at 2, 3, 4, 5, 6, 12 and 24 h after weaning. Accuracy was tested in the OR using transit time technology (TT).

Results: 56 measurement-sessions were performed. In 5 pts, during stable hemodynamic conditions, TT was simultaneously obtained (Fig 1). We identified left-to-right shunts in 12 sessions. The coefficient of variation (CV= SD/mean) was calculated for CO, central BV index (CBVI), total end-diastolic volume index (TEDVI), and active circulation volume index (ACVI) in each session.

Parameters	CO	CBVI	TEDVI	ACVI
CV - NO shunts	3.8%	3.2%	3.1%	7.1%
CV - With shunts	15%	12%	10%	9.6%

[Precision analysis]

[Accuracy]

Conclusions: *COstatus* offers reproducible measurements in pediatric patients. It does not require insertion of dedicated catheters. In the absence of shunts, two injections are typically adequate for data collection; in the presence of shunts, more injections may be required.

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A LOW PLATELET COUNT IS ASSOCIATED WITH TREATMENT FAILURE IN PRETERM INFANTS TREATED WITH IBUPROFEN FOR PATENT DUCTUS ARTERIOSUS (PDA)

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Background: Recent studies have demonstrated that platelet count (PLTc) and function have an important role in promoting spontaneous closure of the PDA in animal models. Aim to evaluate whether response to ibuprofen in premature infants with PDA is influenced by PLTc.

Methods: All infants with GA ≤ 28wks born in our unit between 1/1/2007 and 31/12/2009 were retrospectively studied. Exclusion criteria were: congenital malformations, death within 48 hrs and outborn. All infants had echocardiographic evaluation in 1st DoL. Patients with a hemodynamically significant PDA (HsPDA) were treated with a standard course of ibuprofen. GA, BW, antenatal steroids, gender, type of ventilatory support were analyzed along with PLTc before and after treatment. Associations with HsPDA and treatment response were assessed by univariate and multivariate analysis.

Results: Data from 130 out of 162 newborns (GA 26.2w±1.5, BW 851.2±293g) were analysed. 117 patients showed a PDA at first evaluation. 88 newborns were treated with ibuprofen for HsPDA; after treatment 60 patients had a closed ductus (responders) while 28 were non-responders. A lower PLTc was observed in infants with HsPDA but difference was not statistically significant. Among treated infants, non-responders had a lower GA, were more likely mechanically ventilated and had a PLT significantly lower than responders (111.000/µl vs. 184.000/µl, p=0,001). In the multivariate analysis only invasive ventilation and low PLTc were independent factors for treatment failure.

Conclusion: A low PLTc increases the risk of treatment failure of PDA. Further studies are needed to evaluate the prognostic and therapeutic implications of this observation.

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ECHOCARDIOGRAPHIC EXAMINATION OF THE INCIDENCE OF MITRAL VALVE PROLAPSE AND INTERATRIAL COMMUNICATION

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Introduction: Mitral valve prolapse (MVP) is the most common anomaly of mitral valve with different incidence (using modern criteria) and different level of pathoanatomical abnormality. In most of the cases MVP is an isolated anomaly, but can be associated with other heart anomalies, most frequently with interatrial communication. Using the echocardiography several sequelae and complications of MVP can be identified, including mitral regurgitation, ruptured chordae, endocarditis or associations anomalies.

Aim of presentation: Using the echocardiography examination to present mitral valve prolapse associated with different forms of interatrial communication.

Methodology: Cross-sectional, Doppler and color-Doppler echocardiography examination.

Results: During the period 2004 - 2009. in Echolabor of Pediatrics Clinic in Prishtina were registered 214 children with MVP. 36 of them had one type of interatrial communications. Most often was persistent foramen ovale (22 children), hemodynamically

irrelevant. In 9 of them was registered restrictive ASD secundum type. 5 children had nonrestrictive ASD, one of them type VCS. In all children with nonrestrictive ASD closure was preformed, while in 2 of them open heart surgery was done.

Key words: Mitral valve prolapse, interatrial communication, persistent foramen ovale

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HISTOPATHOLOGICALLY DEMONSTRATED FINDINGS OF INCREASED THICKNESS OF AORTIC INTIMA MEDIA IN NICOTINE EXPOSED RAT PUPS DURING GESTATION AND LACTATION PERIOD

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Epidemiological studies have reported that prenatal factors have a direct effect on the vascular wall that is relevant to atherogenesis from remarkably early in life. The first atherosclerotic lesions usually begin to develop in the abdominal aorta. Our previous studies assessed the influence of maternal smoking on neonatal aortic intima-media thickness (aIMT) by non-invasive ultrasound technique and found that neonates whose mothers smoked have significantly increased aIMT. We have now evaluated the effect of nicotine exposure during pregnancy on rat aIMT histopathologically at three months postnatal age.

Gravid rats were assigned into three groups. In Group Nicotine A, pregnant rats received 6 mg/kg/day nicotine subcutaneously during pregnancy from 1 to 21 days of gestation and lactation (until postnatal day 21). Group Nicotine B received 3 mg/kg/day nicotine for the same period. Control pregnant rats (Group Control) received only saline subcutaneously. We removed abdominal aorta of rat offsprings and were measured by histopathologically via light microscope at postnatal thirth month of age. Finally, aIMT size values of the rat offsprings exposed to nicotine were rised in both groups Nicotine A and B groups were higher than those of Control group (103.78±21.33µm, 99.11±30.12µm, 62.56±7.18µm respectively). This difference was statistically significant in Nicotine Group A and Nicotine Group B (p< 0.05). Additionally nicotine exposure decreased birth weight and pregnancy weight gain.