Normal values of atrioventricular valves diameters in neonates.

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BACKGROUND: Normal values of various cardiovascular diameters are needed for facilitate proper diagnosis and decision about treatment of children with congenital heart defects. The larger is analyzed group, the conclusions and received norms are more accurate and helpful. The aim of this study was to assess the normal values of tricuspid and mitral valves in healthy, term neonates and to correlate this with age (1-30 days), weight and body surface area.

MATERIAL AND METHODS: 771 transthoracic echocardiographic examinations performed between years 2002-2008 were reviewed and data were collected retrospectively. All examinations were performed in healthy, term neonates without any structural heart defect. Measurements were taken from four chamber axis view in diastole. Statistical analysis was performed using Statistica 10 software.

RESULTS: The average age of neonates at echocardiographic examination was 10,6 days (SD-7,8), weight 2,6kg (SD-0,7). Mitral valve diameter - average 9,2mm; SD-1,45; 95%CI 9,1-9,4 – was statistically significant correlated with body surface area (BSA) (r=0,18; p<0,001) and weight (r=0,2; p<0,001). Tricuspid valve the observed diameters - average 9,9mm ; SD -1,74; 95%CI 9,8-10,1 – was also correlated significantly with BSA (r=0,19; p<0,001) and weight (r=0,24; p<0,001). All significant correlations were week, however correlations with weight were in each case stronger than with BSA. We calculated the normal values of mitral (7,3-11,6mm) and tricuspid ( 7,5-13mm) valves for our population contains values between 5 and 95 percentile.

CONCLUSION: The diameters of mitral and tricuspid valves in neonatal period doesn’t have strong correlation with age, weight or BSA, despite the fact, that it is statistically significant correlation in case of BSA and weight. It allows to use the normal values range for whole neonatal period. In case of borderline values, the normal values calculated for weight should be taken under consideration, because it has the strongest correlation with atrioventricular valves diameters.