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Morphological and functional characteristics of right heart in children

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Introduction: In previous echocardiographic studies less importance is given to the right heart chambers due to the dominant opinion that the right heart plays a minor role in the global cardiac function. Recent studies emphasized the undoubted importance of the right heart and indicated the study of right heart cavities as priority.

Aim: The aim of this study was to perform echocardiographic measurements of morphological and functional parameters of the right atrium and right ventricle in healthy children and present the results as a possible reference values.

Materials & Methods: The study included a group of 93 healthy children (48 boys and 45 girls), aged 1 month to 18 years. Dimensions and function of the right atrium and ventricle were examined by standard and new echocardiographic techniques.

Results: The values of the parameters were as follows: VCI / BSA: 11.25 ± 2.67 mm/m², RAVI: 23 ± 6.2 ml/m², TAPSE: 22.4 ± 3.7 mm , diameter of the RVOT: 16.2 ± 4.5 mm. PW of hepatic veins: S: 0.58 ± 0.16 m/s, D: 0.43 ± 0.15 m/s, AR: 0.26 ± 0.06 m/s. PW of tricuspid flow E: 0.67 ± 0.15 m/s, A: 0.44 ± 0.14 m/s, E/A ratio 1.63 ± 0.5 . TDI values of speed of tricuspid annulus movements: Sm: 0.14 ± 0.02 m/s, Em: 0.16 ± 0.03 m/s, Am: 0.11 ± 0.03 m/s, Em/Am ratio of 1.58 ± 0.47 , E/Em ratio 4.4 ± 1.3 , Tei index 0.32 ± 0.07 .

Conclusion: Transthoracic echocardiography is applicable and reliable method for measuring the parameters of the morphology and function of the right heart cavities in children . The values obtained in our study with the supposed limits of the range of normal values \pm SD , could be used as reference values.

Biography

Miroslav Elek is currently working at East Sarajevo Health Center as Resident of Pediatrics. Previously he was working as General practitioner at same venue. He is educated from University of Novi Sad.

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