Determination of Reference Values for Tricuspid Annular Plane Systolic Excursion in Healthy Turkish Children

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Objectives: A tricuspid annular plane systolic excursion (TAPSE) is an echocardiographic measurement used in the evaluation of right ventricular systolic function. While established reference values of TAPSE exist for the adult population, only a limited number of studies have attempted to evaluate reference values for children. The aim of the present study was to determine reference values of TAPSE in healthy children in Turkey.

Methods: A total of 765 healthy children aged between 0 and 18 years, all of whom referred to our clinic with cardiac murmurs, were evaluated. Patients with no cardiac problems or other disorders were excluded from the study. The measurement of TAPSE was obtained using an M-mode echocardiography, and the relationship between age and surface area with TAPSE was investigated.

Results: The mean TAPSE value was found to be 19.56±5.54 cm, and no significant difference was identified between the male and female children subjects. TAPSE values showed an increase with increasing age and surface area. The mean TAPSE was 9.09±1.36 in newborns and 25.91±3.60 cm in the 13–18 age group. A negative correlation was found between TAPSE and heart rate.

Conclusions: In the present study, reference values for TAPSE in healthy Turkish children were presented in percentile tables, and corresponding z-scores were determined. These reference values may be useful in daily practice for the evaluation of right ventricular systolic function in children.