

## MP2-4

### **Echocardiographic prevalence of cardiac malpositions, at birth and in children 5-15 years: Data from two large cross sectional observational studies.**

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**Introduction:** Cardiac malposition refers to an abnormal intrathoracic position of the heart and is due to disturbance of cardiac looping. The heart may lie on right side, left side or in the midline. Abnormalities of atrial and visceral situs may be associated and if so, congenital heart disease (CHD) is almost always present. The prevalence of cardiac malposition varies in different series, perhaps due to undiagnosed cases of situs inversus with dextrocardia where CHD is unlikely. We present our data on prevalence of cardiac malposition based on two large cross sectional echocardiographic screening studies, at birth and in school children.

**Methods:** 20,307 newborns underwent screening echocardiography for CHD within 48 hours of birth in a general hospital setting in the city of New Delhi, India. The other cohort was of 14,724 school children, aged 5-15 years, residing in rural areas close to New Delhi, in whom echocardiography was performed as a part of screening for rheumatic heart disease. Both datasets were analyzed for presence of cardiac malposition and its association with structural heart disease.

**Results:** Of the 20,307 newborns (53.5% males) screened, 5 had cardiac malpositions (prevalence 0.25/1000, 95% CI 0.11-0.58/1000), all were males. Three had situs inversus with dextrocardia. One of these three had a severe CHD (complete atrioventricular septal defect with pulmonary atresia), other two had no CHD. Situs solitus with dextrocardia and situs solitus with mesocardia was present in one case each, both had cyanotic CHD (complete transposition and corrected transposition with ventricular septal defect, pulmonary stenosis, respectively).

Of the 14,724 school children (52.5% males) screened in 5-15 years age group (mean age 10.6±2.8 years), two (both females) had cardiac malposition (prevalence 0.14/1000, 95% CI 0.04-0.50/1000), both having situs inversus, dextrocardia. CHD was not seen in any of these.

**Conclusions:** Situs solitus dextrocardia is the commonest type of cardiac malposition, CHD is absent in majority. Survival in those with no CHD is expected to be comparable to that of control population. Patients with other types of cardiac malpositions are associated with significant CHD and their survival is likely to be reduced.