**Prenatal Diagnosis of Total Anomalous Pulmonary Venous Connection**

**Introduction:** Total anomalous pulmonary venous connection is an uncommon congenital heart disease with an incidence of about 0.6 to 1.2 / 10,000 live births. The pathogenesis of TAPVC is the failure of pulmonary veins to establish drainage into the left atrium, leading to abnormal connections, draining through the systemic veins to the RA. Darling described 4 types of TAPVC based on the site of pulmonary venous drainage: type 1 supra cardiac (43%), type 2 cardiac (18%), type 3 infra cardiac (27%), and type 4 mixed (12%).

**Materials and Methods:** We conducted a systematic retrospective review of the 2-dimensional and Doppler sonographic features that had helped to make the diagnosis of TAPVC at our scan centre from June-2016 – June 2017. The prenatal diagnosis of TAPVC was based on the sonographic depiction of 2 components of the simple rule as follows:

1. Major criterion, which was failure to show normal connections of the pulmonary veins to the LA on both 2-dimensional scanning and color flow mapping.
2. At least one of the following minor criterion:
   a. The presence of vascular confluence behind the atria.
   b. Abnormal spectral Doppler wave form in the pulmonary veins.
   c. A smooth posterior wall of the LA.
   d. Increased retro atrial space.
   e. A dilated coronary sinus (cardiac type).
   f. A dilated SVC or brachiocephalic vein and
   g. An additional vessel on the 3 vessel / 3 VT view or a vertical descending vein.

**Results:** During the study period four fetuses were diagnosed prenatally to have TAPVC.

**Discussion:** Prenatal diagnosis of TAPVC is challenging. In the largest series ever reported including 26 fetuses TAPVC retrospectively reviewed by Ganesan et al, several consistent sonographic features were observed in association with TAPVC of all types and irrespective of the presence or absence of other cardiac abnormalities. The simple rule described by Tongsong et al is helpful in increasing the number of accurate prenatal diagnoses of TAPVC. Careful examination of the 4 chamber view with awareness of possibility of TAPVC can lead to accurate diagnosis in most cases. We suggest that in the evaluation of anomaly screening, attention should be paid to the entry of pulmonary veins to the LA on 2D imaging with the aid of color doppler sonography at a low velocity range.

**Conclusion:** With advances in sonographic equipment and careful evaluation of cardiac structures, it is possible to diagnose TAPVC prenatally. Pulmonary venous anatomy should be checked during prenatal examination.

**References**