

DOES CONGENITAL HEART DISEASE (CHD) AFFECT INTRAUTERINE GROWTH: CYANOTIC VERSUS ACYANOTIC CHD.

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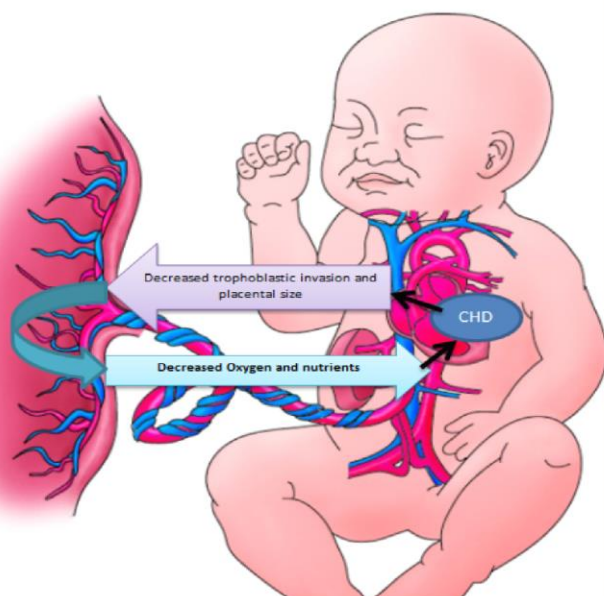
Introduction

Embryogenesis, fetal growth, and survival at the peri-natal period all depend on optimal maternal health and normal placental development.

The heart-placental axis is associated with parallel development of the placenta and heart that utilizes many common molecules and genes and reflects intimate and synergistic growth of both organs.

Abnormal cardiac development leading to CHD can be associated with abnormal placental development with abnormal trophoblast invasion and remodeling resulting in abnormal transfer of nutrients and oxygen.

Effect of CHD on placental and intrauterine growth



Objectives and Methods

We measured the anthropometric parameters (length, weight and head circumference) and the placental weight of 49 FT newborns (gestation period > 36 weeks) infants with :

1. Cyanotic HD {n=8} and
2. Acyanotic HD (n= 41)} diagnosed clinically and by echocardiography and
3. Randomly selected normal FT newborns (n= 104)

Results

Newborn infants with CHD were significantly shorter and had lower birth weight and smaller head size compared to normal newborns. Their placental weights were significantly decreased compared to those for normal newborns.

However, there was no significant difference in the anthropometric parameters of infants with cyanotic versus acyanotic heart disease.

	P wt (g)	BW kg	BL cm	HC cm
Normal newborns n =104	677.6	3185.3	50.6	34.0
CHD newborns n =49	597.3*	2600 *	46.4*	31.7*
Acyanotic n= 41	588.64	2510.0	45.98	31.51
Cyanotic n = 8	640.00	2870.0	48.56	32.69

*p < 0.05, HC= head circumference, BL = Birth length, BW = Birth weight, HC = head circumference.

Discussion

The intrauterine growth restriction in newborn infants with CHD may represent an adaptive mechanism to cope with the compromised perfusion caused by the congenital cardiac anomaly. However, this restricted growth can pose a risk for postnatal development in these infants.

Conclusion

In this study CHD was associated with significant affection of birth weight, length and head circumference and lower placental weight compared to normal newborns.