

**Statistical Analysis of Fetal Echocardiography
Clinic at Fetal Care Unit Ain Shams Maternity
Hospital over a 12-month period**

Thesis

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List of abbreviations

Ao	Aorta
Ao root	Aortic root
AscAo	Ascending aorta
ASD	Atrial septal defect
AV	Atrioventricular
AVSD	Atrioventricular septal defect
BCEE	Basic cardiac echocardiographic examination
CF	Color flow
CHB	Congenital heart block
CHD	Congenital heart disease
CTA	Conotruncal abnormalities
CTAR	Cardio-thoracic area ratio
DA	Ductus arteriosus
DescAo	Descending aorta
DM	Diabetes mellitus
ECEE	Extended cardiac echocardiographic examination
FE	Fetal echocardiography
ICSI	Intra-cytoplasmic sperm injection
IUFD	Intrauterine fetal death
IVC	Inferior vena cava
IVF	In-vitro fertilization
IVS	Inter-ventricular septum
LA	Left atrium
LMWT	Left myocardial wall thickness
LV	Left ventricle
NE	Neonatal echocardiography
OTV	Outflow tract view

PA	Pulmonary artery
PKU	Phenyl ketonuria
PV	Pulmonary valbe
RA	Right atrium
RMWT	Right myocardial wall thickness
RPA	Right pulmonary artery
RV	Right ventricle
SLE	Systemic lupus erythromatosus
SVC	Superior vena cava
SVT	Supra ventricular tachycardia
TGA	Transposition of great arteries
Tra	Trachea
TCD	Total cardiac dimension
VSD	Ventricular septal defect
3VTV	3 vessels-trachea view

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Introduction

Congenital Heart Disease (CHD) is defined as an abnormal structure or cardio-circulatory function that occurs from birth, even if it was diagnosed later in life (*Friedman, 1997*). It differs in severity, starting from communications between cavities that regress spontaneously up to major malformations that may need many interventions, surgical or catheterization. It can lead to intrauterine, childhood or adulthood death (*Go et al., 2013*). A contemporary definition of critical CHD is one which requires urgent intervention/treatment in the first 24 h of life to prevent death. Such cardiac intervention may be not only life saving for the infant but also decrease subsequent morbidity (*Donofrio et al., 2015*).

CHDs are one of the most common forms of congenital anomalies found in humans. Their approximate incidence is about 6 in 1,000 live births and about 8 to 10 in 1,000 pregnancies (*Rodger, 2010*). The **World Health Organization (WHO)** stated that cardiac defects account for 42% of infant deaths and have become the main cause of infant mortality (*Rosano et al., 2000*).

The first experience with visualization of the fetal heart was reported in 1972 by Winsberg (*Winsberg, 1972*). Since then, improvements in two-dimensional image resolution and the

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implementation of Doppler techniques have made it possible to examine the human fetal heart without invasion and to detect normal and abnormal cardiovascular physiology (***Reed, 1989***). To date, nearly all forms of structural CHD have been determined in utero using echocardiographic techniques. The large collective experience with fetal echocardiography (FE) has lead to valuable information about the presentation of heart disease in utero, the non-invasive detection of cardiac defects in the fetus, and the indications and limitations of FE. Therefore, the cardiologist now is capable of extending the care of the child with cardiac disease to include the fetus, allowing in utero diagnosis of cardiovascular disease and, sometimes, providing fetal therapy for certain disease states (***Snider et al., 1997***).

Aim of Work

The aim of this study was to evaluate the FE as an emerging diagnostic tool for early detection of CHD.