INTRODUCTION

Congenital abnormalities of the heart and great vessels are considered as a significant problem, as it occur some 7:12 per 1000 live birth, without medical or surgical intervention, only 10% to 15% of those children will reach adulthood ***(Clinical embryology 1998).***

Some of imaging modalities in radio-diagnosis like plain X-ray and nuclear imaging are used in cardiac examination, but they have a limited role in diagnosis as the earned information's by previous imaging modalities about that specific clinical situations is a very limited ***(Imaging of human anatomy 1998).***

By increasing the scientific & technological progress in radio-diagnosis Magnetic Resonance imaging (MRI) has become an important tool for accurate and non-invasive diagnosis.

Cardiac magnetic resonance is a powerful, rapidly advancing technology that complements other imaging modalities in the noninvasive evaluation of congenital heart disease. Magnetic resonance plays an important role in diagnosis and follow-up by assessing anatomic features, functional effects and post-operative complications. An understanding of the pathophysiology and imaging

characteristics of various congenital heart lesions is essential for effective implementation and accurate interpretation of the cardiac magnetic resonance examination ***(Gutierrez et al., 2008).***

Recent advances in MRI have made this modality an important tool for evaluating congenital heart disease. Faster scanning techniques, high spatial resolution, lack of ionizing radiation, lack of dependence on contrast material and capability for functional imaging have made it an emerging diagnostic tool with great potential in congenital heart disease ***(Woodard et al., 2008).***

Cardiac MR imaging has much to offer by generating high resolution morphological images, offering quantitative information of the severity of regurgitant or stenotic lesions with peak velocity and flow measurements and quantification of shunt. The greatest challenge of cardiac MR imaging is motion artifact from the heart, adjacent vascular structures and respiration. With the ongoing developments in gradient hardware and pulse sequence technology, imaging sequences that can freeze the motion of the heart during the cardiac cycle is now available. Moreover, with the development of rapid pulse sequences, breath-hold imaging is facilitated, which is necessary to accommodate the wide range of motion the heart undergoes during respiration ***(Ram et al., 2005).***

The indications for MRI in the evaluation of patients with congenital heart disease have been now determined. The major indications include: segmental description of cardiac anomalies, evaluation of thoracic aortic anomalies, detection and quantification of shunts, stenosis and regurgitations, evaluation of cono-truncal malformations and complex anomalies, identification of pulmonary and systemic venous anomalies and postoperative studies ***(Ram et al., 2005).***

AIM OF WORK