INTRODUCTION

Congenital cardiothoracic disease is a leading cause of morbidity and mortality in infancy. Congenital malformations account for about one quarter of all infant deaths and one third of these are of infants with cardiac abnormalities ***(Gillum, 1994).***

The detection of a fetal cardiac anomaly demonstrated early in pregnancy has serious repercussions, Prenatal counselling is very much more productive if diagnosis is made antenatally than when a major cardiac anomaly is identified postnatally ***(Cooper &Parmar, 2008).***

Ultrasonography is the primary screening modality for fetal imaging because of its relative low cost, lack of harmful effects to the fetus or mother, and real time imaging, among other advantages. However, there are limitations, including small field of view, limited soft-tissue acoustic contrast, beam attenuation by adipose tissue, poor image quality in oligohydramnios ***(Garel et al, 1998)*** and only around 1% of prenatal scans will reveal a fetal structural anomaly ***(Grane et al, 1994).***

In recent years, magnetic resonance imaging (MRI) has seen increasing use as a technique for examining the fetus in utero. Advantages of fetal MRI are that it offers operator-independent imaging in a number of different planes, with excellent soft tissue contrast and a large field of view .No radiation or contrast agents are required, and no sedation for fetal motion is necessary with the use of fast imaging techniques ***(Levine, 2004).***

Unlike ultrasound imaging, this modality is not affected by maternal and fetal conditions such as obesity and oligohydraminos***(Hendler a et al ,2004)*** which particularly impair sonographic visualization of the fetal heart; maternal obesity increases the rate of sub-optimal ultrasound visualization of the fetal cardiac structures by 49.8%7, despite advanced ultrasound equipment ***(Hendler b et al,***

2004).

Fetal MRI can provide useful information on developmental abnormalities of the lung and thorax; in one study, MRI results led to a change in diagnosis or yielded additional findings to that of ultrasound in 38% of cases ***(Levine, et al, 2003).***

Common thoracic fetal pathology evaluated with MRI includes space-occupying lesions e.g. congenital pulmonary airway malformation, congenital diaphragmatic hernia , and bronchial atresia. Along with the intrathoracic airway and pleural spaces, each can be evaluated with the 3-dimensional SSFP sequence using MPR and thin-slab MIP. This sequence can also be used for qualitative and quantitative evaluation of fetal lung volumes and the position of the liver, providing prognostic information for pulmonary development and fetal survival ***(Pugash et al, 2008).***

Cardiac MRI has improved dramatically, thanks to the availability of fast sequences and cardiac gating, making MRI one of the most powerful approaches to imaging congenital heart diseases ***(Samyn ,2004).***

Features visualized on MRI help narrow down the differential diagnosis of abnormalities detected on ultrasound, which in turn inuences counselling and management ***(Williams & Johnson, 2002).***