



A STUDY OF TIMLY ANOMALY SCAN: IN ORDER TO REDUCE CHANCES OF MOTHERS TO BECOME CRITICALLY ILL

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ARTICLE INFO

Article History:

Received 15th February, 2022

Received in revised form 7th

April, 2022

Accepted 13th May, 2022

Published online 28th June, 2022

Keywords:

Foetal structural (organs) malformations

ABSTRACT

Introduction: Fetal growth and structural abnormalities are two major causes of perinatal mortality and morbidity. Foetal structural (organs) malformations are seen in 3 to 5 % of all pregnancies.¹ Timely diagnosis and management of congenital anomalies anencephaly, polyhydramnios and others will help in reducing mothers become critically ill by timely termination of pregnancy.

As period of gestation increases more chances of complications will take place.

That will increase maternal morbidity and increase admission in Obstetric HDU/ICU.

Materials and Methods: We conducted retrospective observational study at ZMCH. Medical College and Hospital on 32 cases of congenital malformation out of 3200 pregnancy after taking proper consent from November 2018 till November 2021.

Results: In this period we screened 3200 pregnancy and we got 32 fetus anomalies out of them. In our study incidences of anomalies were 1% in study population.

Conclusion: Antenatal fetal anomaly screening may reduce the number of postnatal investigations and also lessen late clinical presentation in high-risk mothers and other groups. Timely advice and termination of pregnancy should offer in congenital anomaly fetus to reduce chances of becoming critically ill of mothers. Foetal karyotyping should be offered in cases with CNS anomalies to diagnose the genetic cause for further genetic counselling and management.

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INTRODUCTION

Fetal growth and structural abnormalities are two major causes of perinatal mortality and morbidity. Foetal structural (organs) malformations are seen in 3 to 5% of all pregnancies.¹ The psychological trauma to the parents and cost associated with the care of fetal abnormalities, is Prenatal USG anomaly screening can detect several anomalies, about 90% of which occurs in fetuses born to parents with unrecognizable risk factors.^{2,3}

The provision, standard and practice of routine scan vary among different places depending on the availability of qualified operators and ultrasound machines, local medical practices, legal concerns, cost, awareness and charges. Foetal anomalies can be detected by sonography at 11-14 weeks, but for detailed foetal anatomic survey 18-22 weeks sonography is necessary.

It reflects the unawareness of knowledge in patients and also in basic health care facility, especially in developing countries. Some are not yet undergoing anomalies scan in remote areas of developing country. A anomalies of central nervous system, gastrointestinal system, cardiovascular system, urogenital system and skeletal system can be diagnosed by the anomaly scan. So, the study was done to find out the common structural anomalies during the second trimester of pregnancy.

mothers become critically ill by timely termination of pregnancy.

As period of gestation increases more chances of complications will take place. That will increase maternal morbidity and increase admission in Obstetric HDU/ICU.

Such interruption, when done on time, results in a lower perinatal mortality rate and decrease health care cost because of the avoidance of long-term care that children with lethal major congenital anomalies need for survival and will allow time to take decision of termination at established center where facility of obstetric HDU/ICU available so that mother will become less critically ill and in case conditions arises resuscitation would be easy.

AIMS AND OBJECTIVES

1. The aim of the present study was to find out the common anomalies detected by USG fetus anomaly scan at 18 to 24 weeks of gestation. 2. Early detection of malformations was our primary objectives, because timely termination will less complications compare to late termination. Late termination can lead to mothers become more critically ill.

MATERIALS AND METHODS

We conducted retrospective observational study at ZMCH. Medical College and Hospital on 32 cases of congenital malformation out of 3200 pregnancy after taking proper consent from November 2018 till November 2021. Pregnant women who attended OPD for regular antenatal check-up,

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underwent fetal ultrasound anomaly scan during the second trimester of pregnancy and those having past history of severe foetal anomalies, bad obstetric history, IVF treated mother and chronic miscarriages were considered to evaluate for anomaly scan.

The study was conducted in collaboration with radiology and gynaecology department. All ANC cases between 18-24 weeks were included in the study population. Pregnant women before 18 weeks and after 24 weeks were not included in our study. Data were analysed statistically in percentage and presented in tabular and graphical form.

RESULTS

In this period we screened 3200 pregnancy and we got 32 fetus anomalies out of them. In our study incidences of anomalies were 1% in study population.

Anomalies according to Age Table..1

Maternal age years	Number(N=32)	Percentages
<20	1	3.1
21-29	9	28.12
30-39	18	56.25
40 AND MORE	4	12.5

Anomalies are more common in 30-39 years age

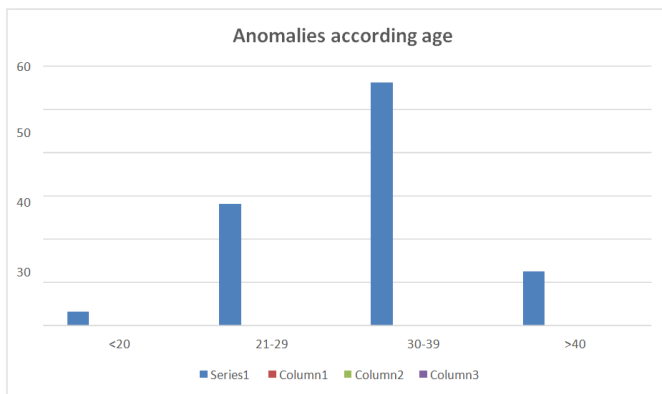
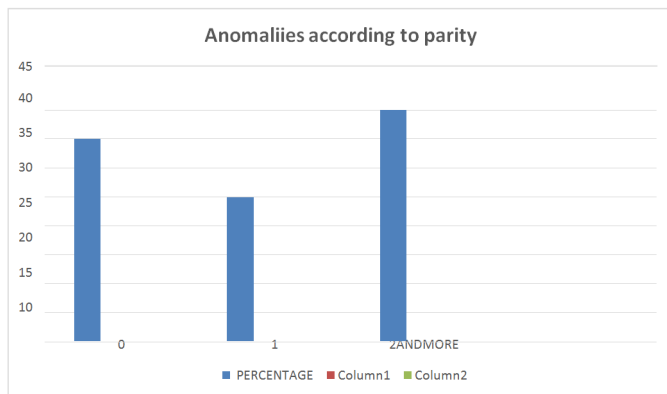


Table 2

Parity	Number	Percentage
0	11	34.3
1	8	25
2 And More	13	40.6

Anomalies are more common in multigravida



Anomalies according to system Table..3

Anencephaly			
CNS (13 Anomalies from 32) 40.62%	hydrocephalus	7	21.87%
	Spinabifida	2	6.2%
	encephalocele	1	3.12%
	Choroidplexuscyst	1	3.12%
GIT(18.75%)	Omphalocele	6	18.75%
	Gasroschisis	0	0%
CTEVS	Ectopy in left ventricle	4	12.5%
CVS		2	6.2%
	VSD	1	3.12%
(9.37%)			
MISCILANEOUS	Hydronephrosis	1	3.12%
	Polydactyly	2	6.2%
	Hdropesfetalis	1	3.12%

CNS system was involved in most number of cases.

In our study in CNS system Anencephaly, hydrocephalus, Spinabifida, encephalocele and Choroidplexuscyst were major anomalies.

In our study we found 2 cases of polydactyly. One case of hdropesfetalis from RH negative mother.

Critical conditions/admission in obstetric HDU Table..4

Termination of pregnancy In weeks	Need for blood transfusion	Need for Resuscitation	Need for obstetric HDU/ICUADMISSION
AFTER 27 weeks	1	1	1
Termination before 27 weeks	0	0	0

(Need of ICU admission after 27wks of termination)

Complications Table 5

COMPLICATIONS	Termination after 27wks (>27wks)	Termination before 27wks (<27wks)
Postpartemhaemrh age	1	0
Shoulder dystocia	1	0

(Postpartemhaemrh age took place after 27 wks)

DISCUSSION

We found a high frequency of congenital malformations in the elderly age group and especially among multigravida women. A routine anomaly scan should be offered to all pregnant mothers as, Though Detection of anomalies usually depends on the skill of the radiologist as well the sophistication or resolution of the equipment is going to be used A normal fetal anatomy survey can provide reassurance of a normal pregnancy in most pregnant women. Certain High risk factors as advance medical age, elderly primigravida, known medical condition, previous malformed baby, multiple gestation, are challenging. Prenatal detection of congenital anomalies allows the couples several options in addition to standard care, including special care during delivery, in utero intervention, or termination of pregnancy if it is allowed in that country. When the placenta overlaps the internalos, there is a high risk of placentaprevia at delivery.⁴

A trend toward more pregnancy terminations and fewer new born with anomalies are apparent over the year. Antenatal fetal anomaly screening may reduce the number of postnatal

investigations, lessen late clinical presentation in high-risk mothers and give chance to take decision of place where delivery should be conducted.

Elderly mothers to be focused more carefully, as the risk of giving birth to a foetus with congenital anomalies is higher. In present study Maternal age and multigravid as are associated with an increase prevalence of congenital anomalies. A high frequency of congenital anomalies in the age group of 30-39 years. Incidence of congenital anomalies in our study is 1% (32 cases from 3200 USG scan). Incidence of congenital anomalies according to Vinodh SL is 2.48%.⁵

Late abortion would lead to massive bleeding, perforation of uterus, cervical incompetence, shock need for ICU/HDU admission and some times even death of patient. That's why author believetimly and early termination for betterment of mother. In present study we found more chances of shoulder dystocia, need for blood transfusion, admission in ICU/HDU and need for resuscitation in those mothers who went for termination after 27 weeks even after positive counselling. In present study 3.12 % of anomalies required need for resuscitation and became critically ill termination after 27 weeks. so that the parents can be informed about the consequences arising from continuity of pregnancy. Parents have the choice to discontinue or improve the safety of birth.

In our study CNS anomalies were the most common in live born and still born foetuses. During second trimester detected anomalies are terminated with consent, so incidence of anomalies at full term new borns might be less.

In CNS system Anencephaly, hydrocephalus, Spina bifida, encephalocele and Choroid plexus cyst were major anomalies. Anencephaly is serious birth defect in which a baby is born without parts of the brain and skull. It is a type of neural tube defect. Anencephaly can be diagnosed as a acrania with varying degrees of cerebral degeneration. It can be diagnosed from 11 weeks onwards. A baby born with anencephaly might be stillborn or survive only a few hours to a few days after birth.

Terminations of anencephaly may lead to shoulder dystocia, massive bleeding, need for hysterotomy and ICU admission sometimes. In the present study, frequency of anencephaly during second trimester showed 2.1 per 1000 pregnancies. Chatzipapas IK⁶ et al found frequency of anencephaly 1.1/1000 pregnancy. Spina bifida is a birth defect in which a developing baby, spinal cord fails to develop properly. In the present study, frequency of spina bifida during second trimester showed 0.6/1000 pregnancies. ZHU chenatel found frequency of spina bifida in their study 1.6/10000⁷.

Hydrocephalus is an accumulation of extra fluid in the normal spaces within brain (ventricles) and Middle layers of tissues that cover the brain (the subarachnoid space). The extra fluid usually causes an enlarged head and developmental problems. In present study frequency of hydrocephalus was 0.6 per 1000 pregnancy. In this study we got encephalocele 0.3/1000 cases of pregnancy. In present pregnancy choroid plexus cyst was 0.3/1000 pregnancy.

This decision to terminate fetus should be taken with facilities of blood bank, operation theatre and ICU/obstetric HDU. This decision to terminate their pregnancies may be due to The established counseling program among the study population and possible greater acceptance of the circumstances due to

varied reasons ranging from level of education to religious and cultural beliefs⁸

In gastro intestinal tract Omphalocele was diagnosed as abdominal wall Defect. Omphalocele is associated with advancing maternal age, with most of these mothers being over 30 years old.⁹ omphalocele was in relation to anterior abdominal wall, with a frequency of 1/5000 during pregnancy, decreasing to 0.8/10000 for live births¹⁰.

In the present study, frequency of omphalocele during second trimester showed 1.8 per 1000 pregnancies. Similar findings were also observed in the present study. For many anomalies, early prenatal diagnosis of structural anomalies provides the opportunity to influence perinatal management favorably by changing the site of delivery for immediate postnatal treatment; altering the mode of delivery.

CTEV diagnosis by Simultaneous visualisation of leg and foot bones in the same plane. Present study showed frequency of 1.2 per 1000 pregnancies during the second trimester. Incidence ranges from about 0.1% in the new born population to 0.4% when diagnosed antenatally by ultrasound¹¹.

Incidence of CTEV diagnosed before birth varies significantly in published studies. Few cases are diagnosed on a late stage of gestation ranging from 22nd to 24th week with initially normal ultrasounds.¹²

Cleft lip with or without cleft palate is best identified between 20-22 weeks.¹³ A study reported an incidence of orofacial clefts is about 1 in 700-1000 deliveries.¹⁴ Present study also showed frequency of 0.6 per 1000 pregnancies during the second trimester.

In Miscellaneous group of present study there was 1 (one) case of hydronephrosis. Its frequency was of 0.3 per 1000 pregnancy. There were two cases of polydactyly and one case of hydrops fetalis, Its frequency respectively 0.6 per 1000 pregnancy and 0.3 per 1000 pregnancy. Hydrops fetalis was present in RH negative mother, as more common in isoimmunisation of cases.

The prevalence from this study of 3 (9.37%) case of cardiac anomaly is low compared with previous studies. In a large study with 4799 affected fetuses, Bull¹⁵ reported an antenatal detection rate of cardiac anomalies of 23.4% in the UK, with large geographic variability.

The Eurosc an stud¹⁶ reported a prevalence of between 14% and 45%. The prevalence of ectopic foci in left ventricle 0.6 /1000 pregnancy. Amato JJ at el found frequency of ectopic a cordis from 0.7 to 0.8 per 10,000

Deliveries¹⁷. In this study frequency of VSD was 0.3/1000 pregnancy and ectopic foci in left ventricle 0.6/1000 pregnancy.

In our study CNS anomalies were more, in contrast Munim *et al.*^{18,19}. They found more anomalies in genitourinary system. In the genitourinary system, the commonest anomaly was hydronephrosis, a finding, which agrees with reports from the works of Beke *et al.*²⁰ and Agunloye *et al.*²¹. In a study by Chitty *et al.*,²² detected (1.1%) congenital anomalies which were found prenatally, of which (77%) were lethal.

Accurate dating may reduce induction for post-term pregnancies, and improve obstetric care through allowing the

optimal timing of necessary screening and interventions and the avoidance of unnecessary ones.^{23,24}

Timely diagnosis and management of congenital anomalies anencephaly, polyhydramnios and others will help in reducing mothers become critically ill by timely termination of pregnancy. As period of gestation increases more chances of complications will take place. That will increase maternal morbidity and increase admission in Obstetric HDU/ICU.

Termination of pregnancy in lesser period of gestation will encounter less maternal complication compare to termination of pregnancy in advance period of gestation.

In advance period of gestation will invite more complication of polyhydramnios, prolong labour, chances of shoulder dystocia and postpartum haemorrhage. these complication may require resuscitation of mother and vigorous management to prevent mother becoming critically ill. These complication May require admission of mother in obstetric HDU to decrease maternal morbidity.

In our study we required admission of mother in obstetric HDU for one patient. As she developed shoulder dystocia and Postpartum haemorrhage in one patient, she was terminated after 27 wks of pregnancy. Emre ekmekci at el found that shoulder dystocia, polyhydramnios and PPH may takes place in congenital anomalies like anencephaly.²⁵

Dasguptas et al²⁶ concluded that, maternal health is a priority domain for any nation, and hence, strengthening of critical care services to save high -risk obstetric patients is of paramount importance. Adequate number of general critical care beds and dedicated obstetric HDUs are essential necessities in high volume obstetric centers.

Miglani et al²⁷. have concluded the obstetric medical emergency team as a new concept, aggressive teamwork in intensive care unit (ICU), is required. Also the various levels of the delays, which are significant contributors to the high MMR. They concentrated on other preventive strategies, availability of trained manpower, blood storage facilities, timely referrals, transport facilities, etc., at peripheral levels. According to them In the tertiary care centers, there is an increased need for trained manpower in critical care,

CONCLUSION

Antenatal fetal anomaly screening may reduce the number of postnatal investigations and also lessen late clinical presentation in high-risk mothers and other groups, So, anomaly scan between 18-24 weeks of gestation should be done. We found a high frequency of congenital malformations in the elderly age group and especially Among multigravida women.

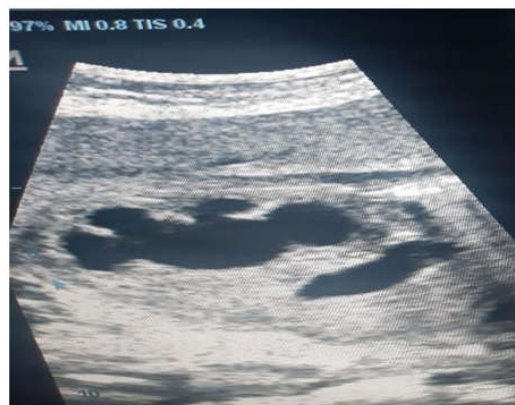
Timely advice and termination of pregnancy should offer in congenital anomaly fetus to reduce chances of becoming critically ill of mothers. Foetal karyotyping should be offered incases with CNS anomalies to diagnose the genetic cause for further genetic counselling and management.

Highlights. In our study we required admission of mother in obstetric HDU for some patients. As she developed shoulder dystocia and Post partem haemorrhage in some patients, she was terminated after 27 wks of pregnancy. Timly advice and

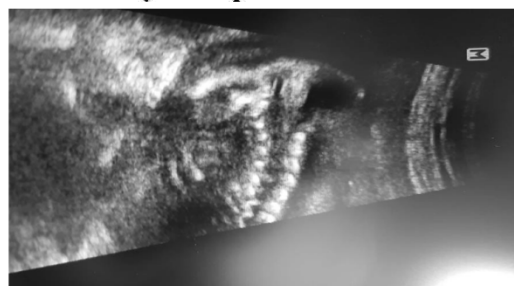
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Financial Support NA

Conflict Intrest NA



Hydrocephalus



Spinabifida

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How to cite this article:

Dinesh Kumar *et al* (2022) 'A study of Timly Anomaly Scan: In Order To Reduce Chances of Mothers to Become Criticallyill', *International Journal of Current Advanced Research*, 11(06), pp. 1106-1110.
DOI: <http://dx.doi.org/10.24327/ijcar.2022.1110.0247>
