CONGENITAL ANOMALIES AND THEIR SURGICAL OUTCOME IN TERTIARY CARE HOSPITAL

Dr.C. Chandrasekhar[1]; Dr Sirisha Routhu[2]

1. Associate professor department of surgery maheshwara medical college
2. Assistant professor department of surgery maheshwara medical college

***Corresponding author:**
Dr Sirisha Routhu, Assistant professor department of surgery maheshwara medical college

ABSTRACT
Abstract congenital malformations accounted for6.6% of neonatal deaths in the rural as well as urban slum communities. The variability of incidence of malformation in various parts of the country could be due to inaccurate detection at birth or later or it can be due to various methodologies used. [5] Maternal ultrasonography can diagnose these anomalies prenatally in 2ndtrimester of life. [6, 7, 8] and intervention of congenital malformations in the intrauterine life is gaining popularity now a days. Neonatal surgical intervention is done usually soon after birth, these procedures are not only to restore the structure but function also.100 patients were enrolled in the study. In our study consengeneous marriage was one of the main cause leading to congenital anomaly in our study cleft lip and CTEV were the major anomalies however larger studies with more sample size are needed to come to a conclusion
Keywords: Surgical Outcome; CTEV

INTRODUCTION:

Health is a multidimensional concept that is difficult to capture in a single measure. Common indicators like infant mortality rate, life expectancy at birth, anthropometric measures or nutritional status are used to assess the health status of population. But Most of the studies focus on the infections and their effects during infancy and childhood. Very few studies have been conducted to know about them orbidity rates and outcomes due to congenital anomalies. Congenital anomalies affect approximately 1 in 33 infants (3%) leading to 6.6% deaths in infants and causing significant morbidity in children. Ever since the discovery of Penicillin by Ian Fleming a lot of antibiotics have been introduced along with development inimmunology and medicine also the understanding of the preventive aspect of the infective diseases has lead to significant reduction in the morbidity and mortality of infectious diseases. [1] But these have little impact on congenital anomalies but with the advancement of antenatal ultrasonography and availability of trained paediatric surgeons the congenital anomalies are being identified and treated well. Congenital anomalies also referred as birth defects, affect approximately 1 in 33infants and results in approximately 3.2million birth defects related disabilities every year. [2, 3] Congenital anomaly can be defined as abnormality of physical structure or form seen at birth or few days/weeks after birth that has surgical, medical or cosmetic relevance. Community based study by Indian council of Medical Research (ICMR). [4] Reported that congenital malformations accounted for6.6% of neonatal deaths in the rural as well as urban slum communities. The variability of incidence of malformation in various parts of the country could be due to inaccurate detection at birth or later or it can be due to various methodologies used. [5] Maternal ultrasonography can diagnose these anomalies prenatally in 2ndtrimester of life. [6, 7, 8] and intervention of congenital malformations in the intrauterine life is gaining popularity now a days. Neonatal surgical intervention is done usually soon after birth, these procedures are not only to restore the structure but function also. As the diagnosis of congenitalmal formation invokes an emotional parental response [9] So the life-threatening congenital malformations must be identified by thorough clinical examination because early diagnosis and surgical correction or palliation of these infants offers the best chances for survival. This study will be conducted in the view to find out the prevalence of congenital anomalies affecting various organ systems. Environmental factors, genetic factors also affect the developing fetus. [10, 11] So this type of study may help to document the outcome and pattern of abnormality

AIM& OBJECTIVES:

Aim: To study Congenital Anomalies and their Surgical outcome in tertiary care hospital

Objectives:

1. To study prevalence of Congenital Anomalies in
2. To study Surgical outcome of congenital anomalies treated

MATERIAL AND METHODS:

Study design: Descriptive Longitudinal
Study population: Patientsdiagnosed with congenital anomalies and treated at **maheshwara medical college**
Study period:2 years
Sample size:45

Sample Size for Frequency in a Population

Population size(for finite population correction factor or fpc)(*N*):	1000000
Hypothesized % frequency of outcome factor in the population (*p*):	3%+/-5
Confidence limits as % of 100(absolute +/- %)(*d*):	5%
Design effect (for cluster surveys-*DEFF*):	1

Sample Size(*n*) for Various Confidence Levels

ConfidenceLevel(%)	Sample Size
95%	45
80%	20
90%	32
97%	55
99%	78
99.9%	127
99.99%	177

Equation

Sample size $n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)]$

Ethical clearance: The study will be initiated after approval of Institutional Ethical committee.
Selection criteria: Patients diagnosed with congenital anomalies and treated at,**maheshwara medical college** will be subjected to the following inclusion and exclusion criteria.
Inclusion criteria:

1. Patients diagnosed with congenital anomalies and receiving treatment at **maheshwara medical college**
2. Patientsparents willing to give written informed consent to participate in the study.

Exclusion criteria:

1. Patients operated or treated for the congenital anomaly outside the institute.
2. Patients referred to other hospital for treatment.
3. Patients of anomalies not requiring any treatment

Patients who will satisfy the above inclusion and exclusion criteria will be included in the study. Written informed consent will be taken in all patient's parents.

Study procedure:

After taking consent, patient's demographic data will be collected. The data regarding the following variable will be collected in the pretested Case record form.

The following information regarding the patients will be collected:

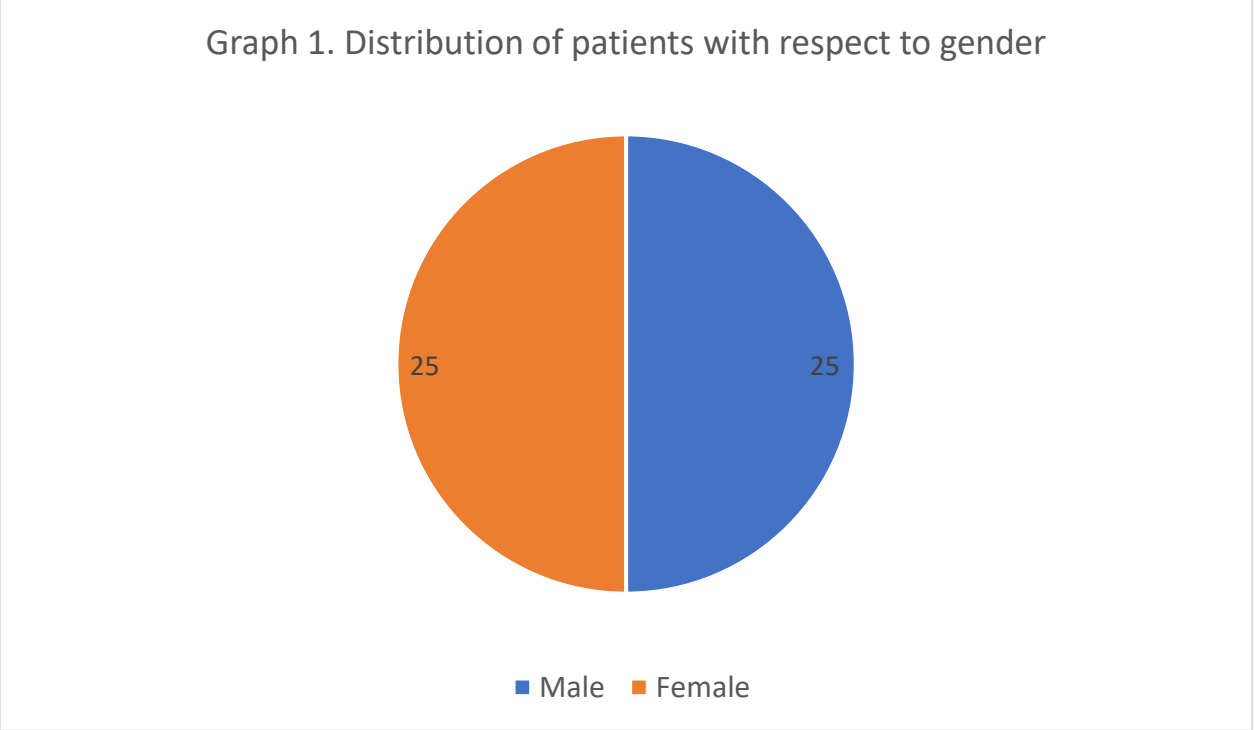
S. No.	Variable	Method of measurement	Measurement scale	Descriptive statistics
1.	Age	Interview	Ratio	Mean, S.D.
2.	Gender	Interview	Nominal	Frequency, Proportion
3.	Congenital anomaly	Records	Ratio	Mean, S.D.
4.	System Involved	Records	Nominal	Frequency, Proportion
5.	Consanguineous marriage	Interview	Nominal	Frequency, Proportion
6.	Family History	Interview	Nominal	Frequency, Proportion
7.	Medication history during pregnancy	Interview and records	Nominal	Frequency, Proportion
8.	Report of anomaly scan if done during pregnancy	Records	Nominal	Frequency, Proportion

9.	Child order	Interview	Ordinal	Frequency, Proportion
10.	Gravida	Interview and records	Nominal	Frequency, Proportion
11.	History of Infertility	Interview and records	Nominal	Frequency, Proportion
12.	Term pregnancy	Interview and records	Nominal	Frequency, Proportion
13.	History of recurrent abortion	Interview and records	Nominal	Frequency, Proportion
14.	Surgical outcome of treatment	Records	Nominal	Frequency, Proportion

RESULTS

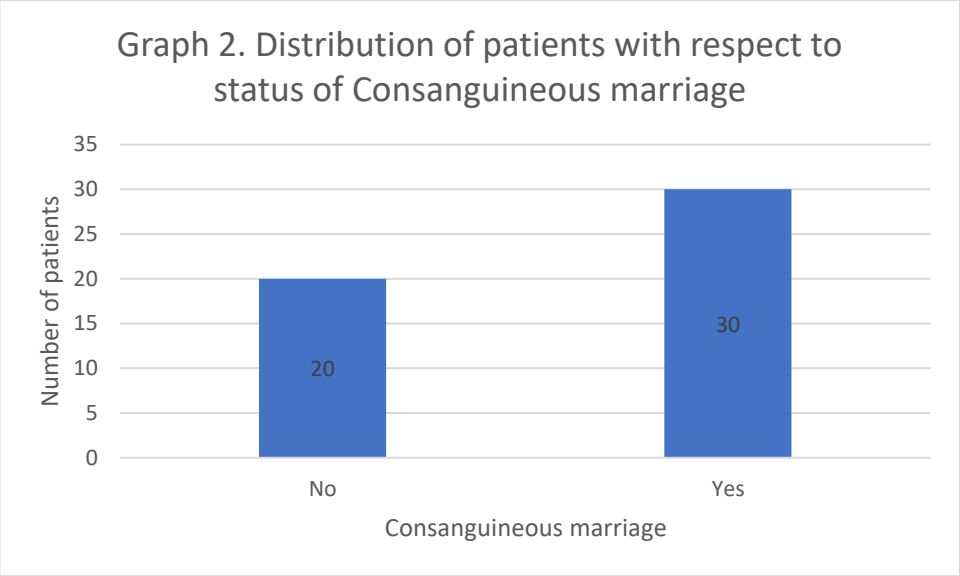
100 Patients with congenital anomaly were included in the study.

Table no. 1. Distribution of patients with respect to gender		
Gender	Frequency	Percent
Male	25	50.0
Female	25	50.0
Total	50	100.0



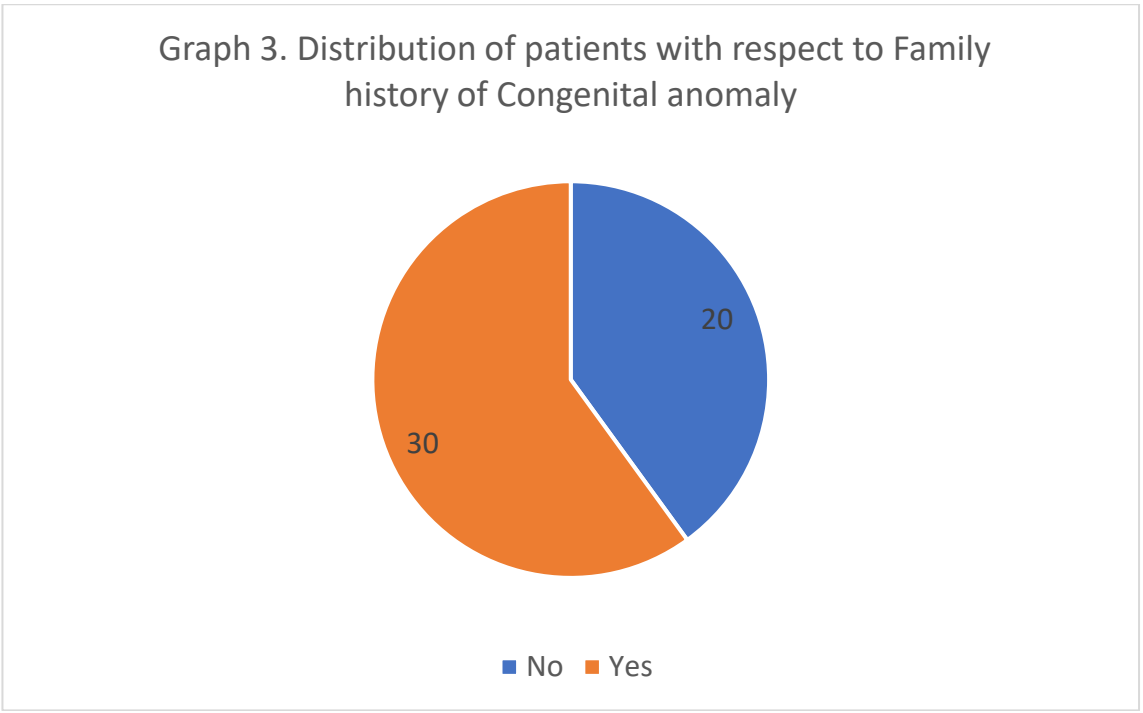
Out of these, 25 were males and females each.

Table no. 2. Distribution of patients with respect to status of Consanguineous marriage		
	Frequency	Percent
No	20	40.0
Yes	30	60.0
Total	50	100.0



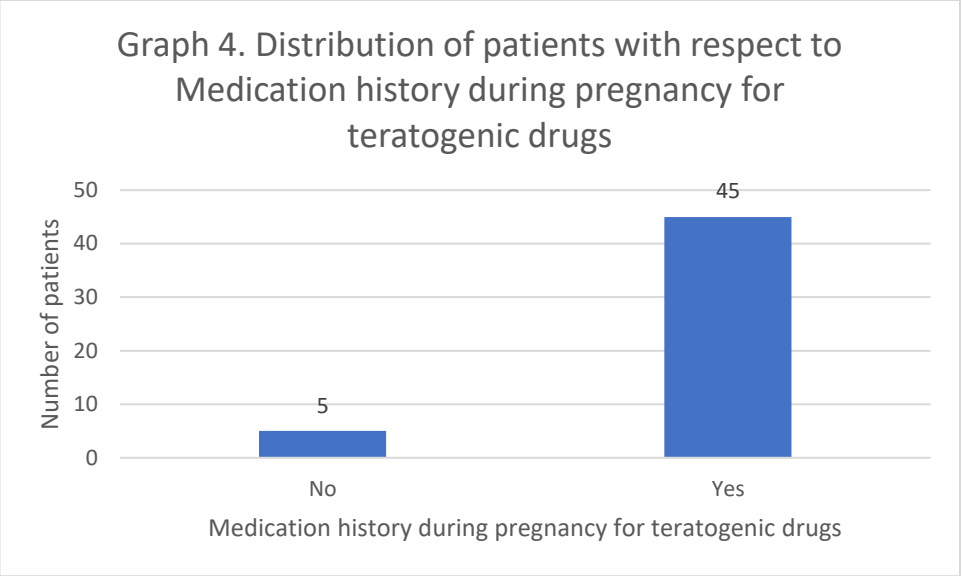
History of consanguineous marriage was present in 30 (60%) patients.

Table no. 3. Distribution of patients with respect to Family history of Congenital anomaly		
	Frequency	Percent
No	20	40.0
Yes	30	60.0
Total	50	100.0



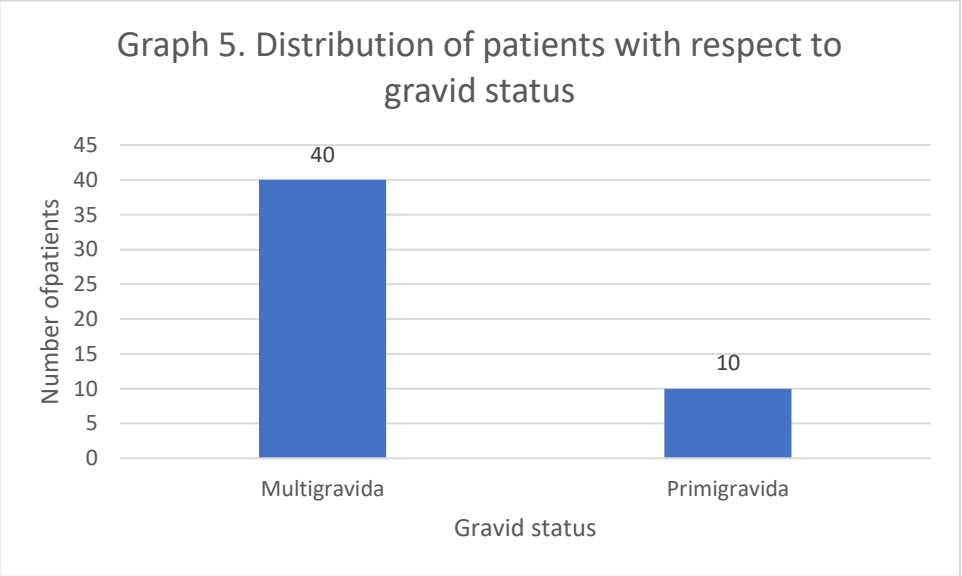
Family history of Congenital anomaly we present in 30 (60%) patients.

Table no. 4. Distribution of patients with respect to Medication history during pregnancy for teratogenic drugs		
	Frequency	Percent
No	5	10.0
Yes	45	90.0
Total	50	100.0



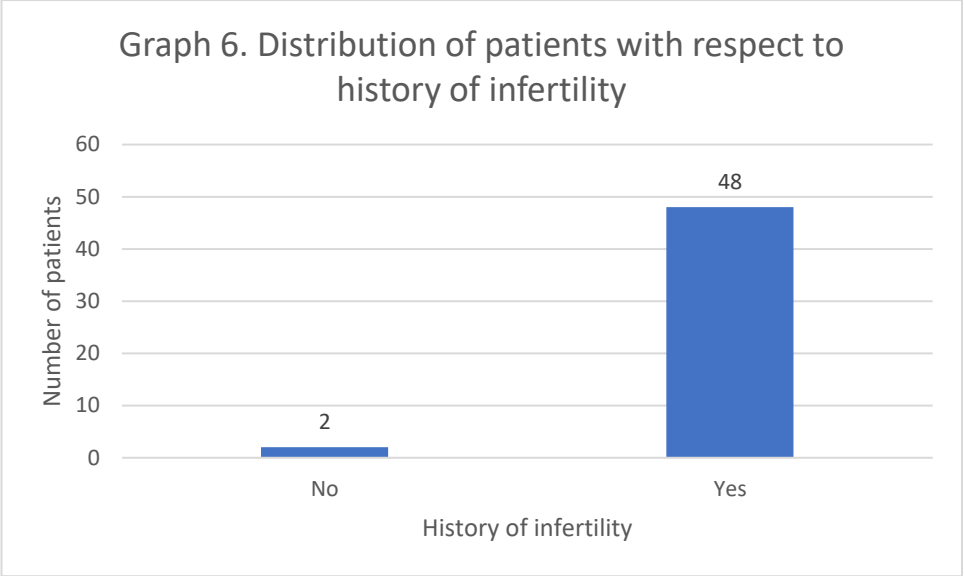
Anomaly scan was not done in any of the patients before delivery. Medication history during pregnancy for teratogenic drugs was present in 45 (90%) patients.

Table no. 5. Distribution of patients with respect to gravid status		
	Frequency	Percent
Multigravida	40	80.0
Primigravida	10	20.0
Total	50	100.0



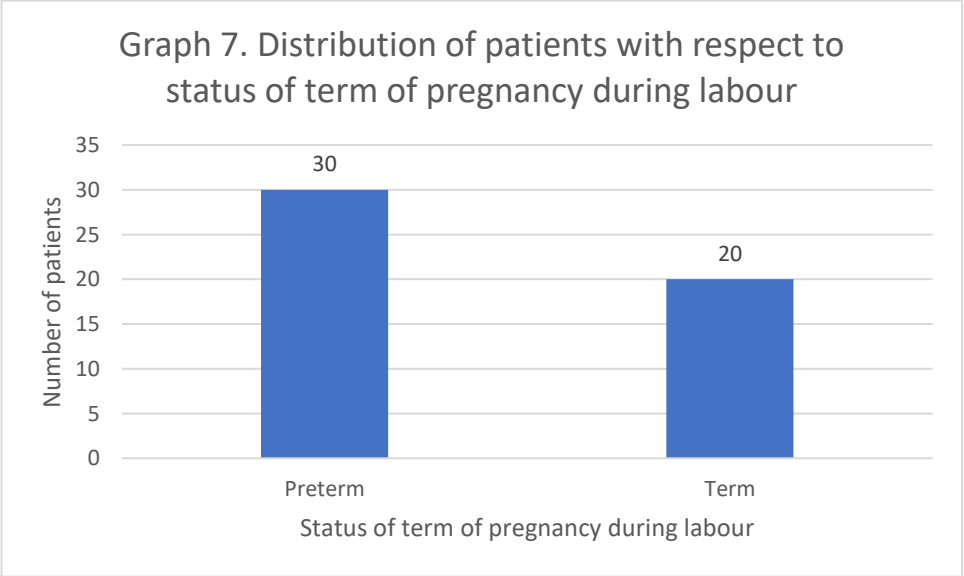
40 mothers (80%) were multigravida while 10 mothers (20%) of the patients were primigravida.

Table no. 6. Distribution of patients with respect to history of infertility		
	Frequency	Percent
No	2	4.0
Yes	48	96.0
Total	50	100.0



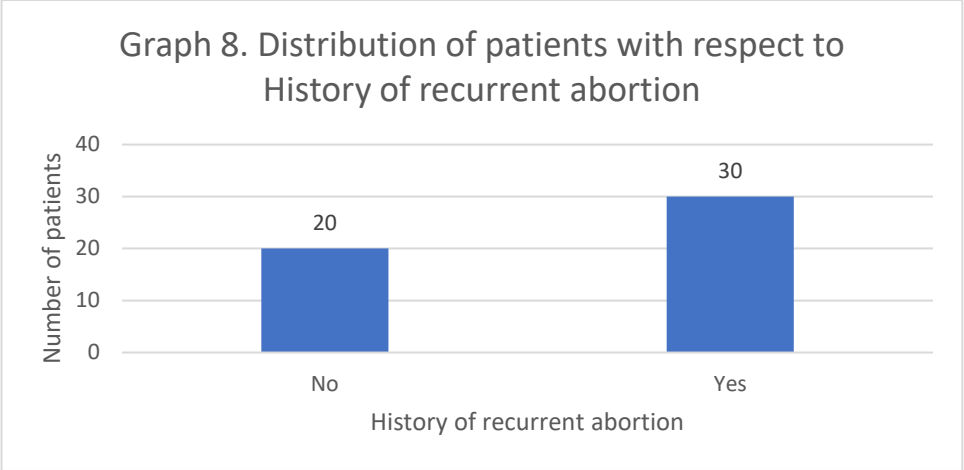
History of infertility was present in 48 (96%) patients.

Table no. 7. Distribution of patients with respect to status of term of pregnancy during labour		
	Frequency	Percent
Preterm	30	60.0
Term	20	40.0
Total	50	100.0



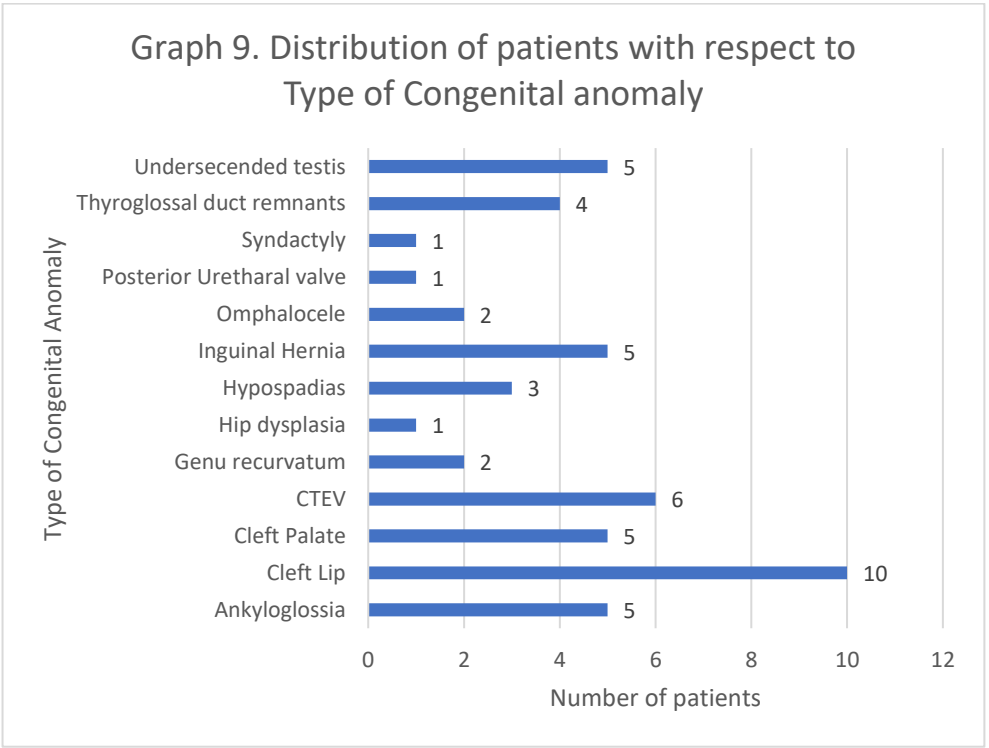
30 (60%) patients were born preterm, while 20 (40%) patients were born at term.

Table no. 8. Distribution of patients with respect to History of recurrent abortion		
	Frequency	Percent
No	20	40.0
Yes	30	60.0
Total	50	100.0



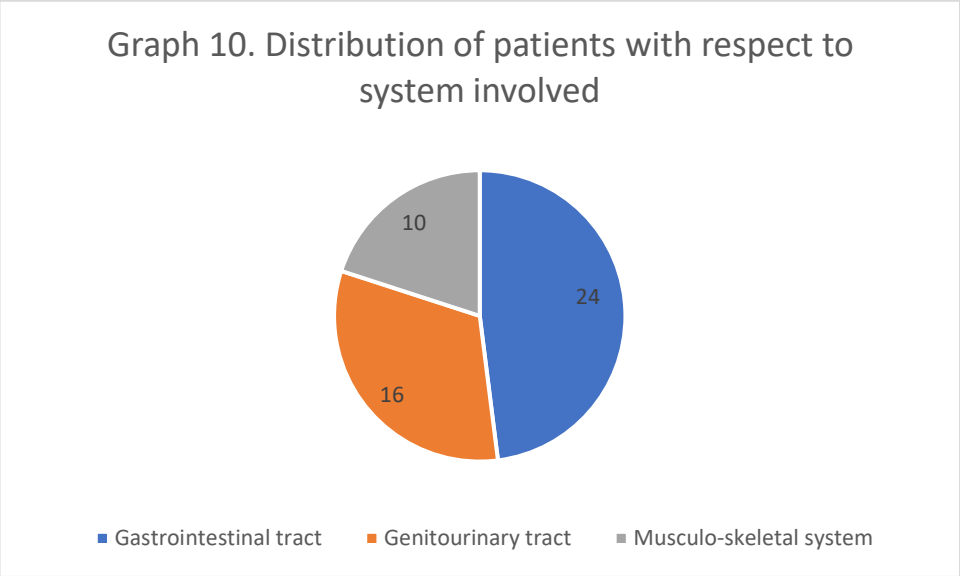
History of recurrent abortion was present in 30 (60%) patients.

Table no. 9. Distribution of patients with respect to Type of Congenital anomaly		
	Frequency	Percent
Ankyloglossia	5	10.0
Cleft Lip	10	20.0
Cleft Palate	5	10.0
CTEV	6	12.0
Genu recurvatum	2	4.0
Hip dysplasia	1	2.0
Hypospadias	3	6.0
Inguinal Hernia	5	10.0
Omphalocele	2	4.0
Posterior Uretharal valve	1	2.0
Syndactyly	1	2.0
Thyroglossal duct remnants	4	8.0
Undersecended testis	5	10.0
Total	50	100.0



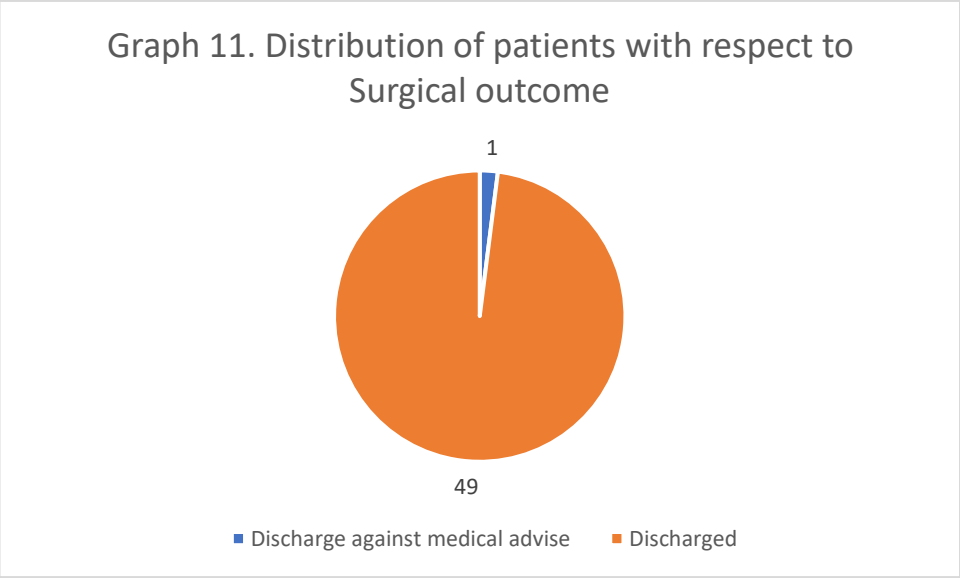
Cleft lip (10, 20%) was the most common congenital anamoly, followed of CTEV (6, 12%)

Table no. 10. Distribution of patients with respect to system involved		
	Frequency	Percent
Gastrointestinal tract	24	48.0
Genitourinary tract	16	32.0
Musculo-skeletal system	10	20.0
Total	50	100.0



Anomalies of Gastrointestinal system were commonest (24, 48%) followed by that of Genitourinary system (16, 32%).

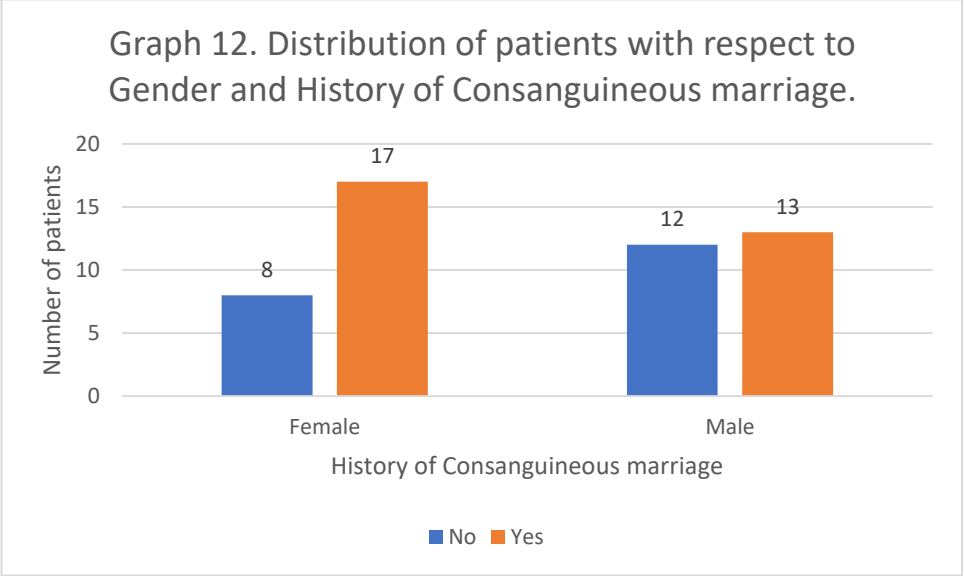
Table no. 11. Distribution of patients with respect to Surgical outcome		
	Frequency	Percent
Discharge against medical advice	1	2.0
Discharged	49	98.0
Total	50	100.0



All patients in the present study underwent successful Surgical treatment. 49 patients were discharged while one patient took discharge against medical advice.

Table no. 12. Distribution of patients with respect to Gender and History of Consanguineous marriage.			
	Female	Male	Total
No	8	12	20
Yes	17	13	30
Total	25	25	50

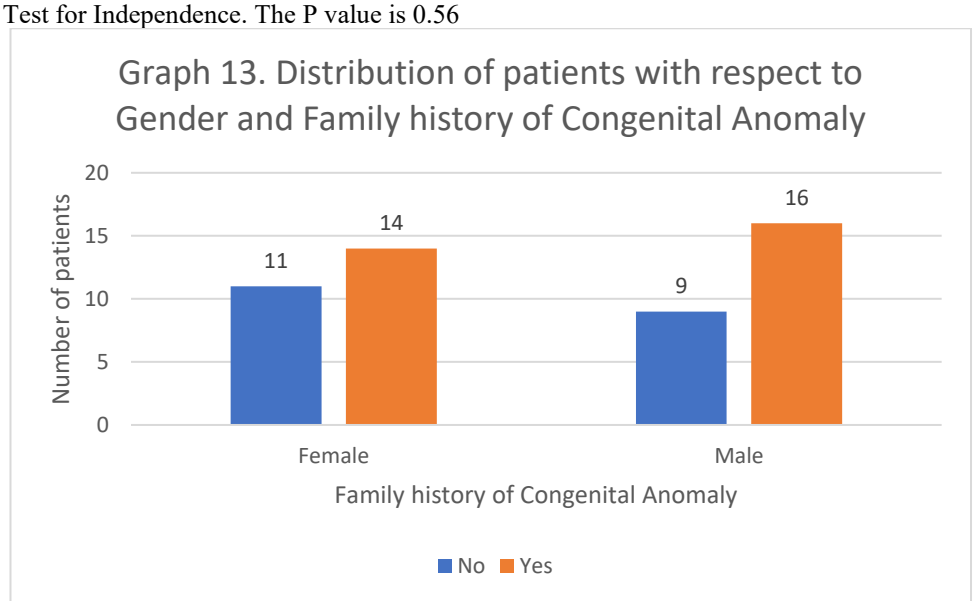
Chi-squared Test for Independence. The P value is 0.24



Difference between History of Consanguineous marriage with respect to gender was not statistically significant.

Table no. 13. Distribution of patients with respect to Gender and Family history of Congenital Anomaly			
Gender	Female	Male	Total
No	11	9	20
Yes	14	16	30
Total	25	25	50

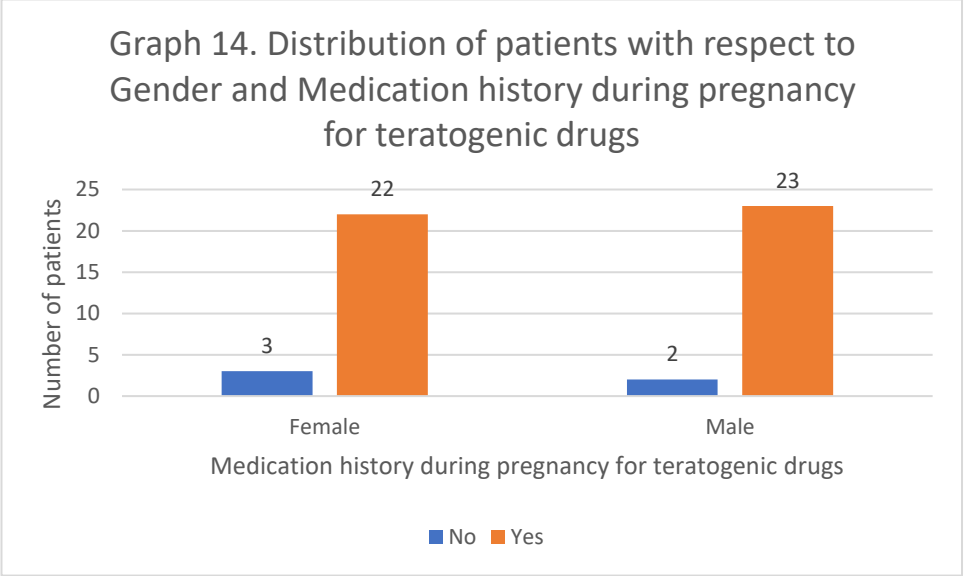
Chi-squared Test for Independence. The P value is 0.56



Difference between Family history of Congenital Anomaly with respect to gender was not statistically significant.

Table no. 14. Distribution of patients with respect to Gender and Medication history during pregnancy for teratogenic drugs			
Gender	Female	Male	Total
No	3	2	5
Yes	22	23	45
Total	25	25	50

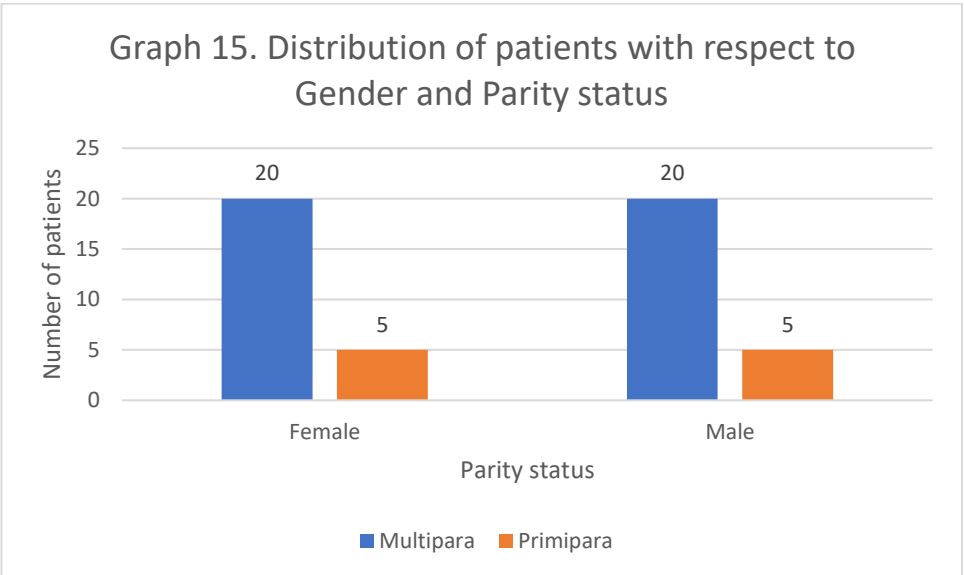
Chi-squared Test for Independence. The P value is 0.63



Difference between Medication history during pregnancy for teratogenic drugs with respect to gender was not statistically significant.

Table no. 15. Distribution of patients with respect to Gender and Parity status			
	Female	Male	Total
Multipara	20	20	40
Primipara	5	5	10
Total	25	25	50

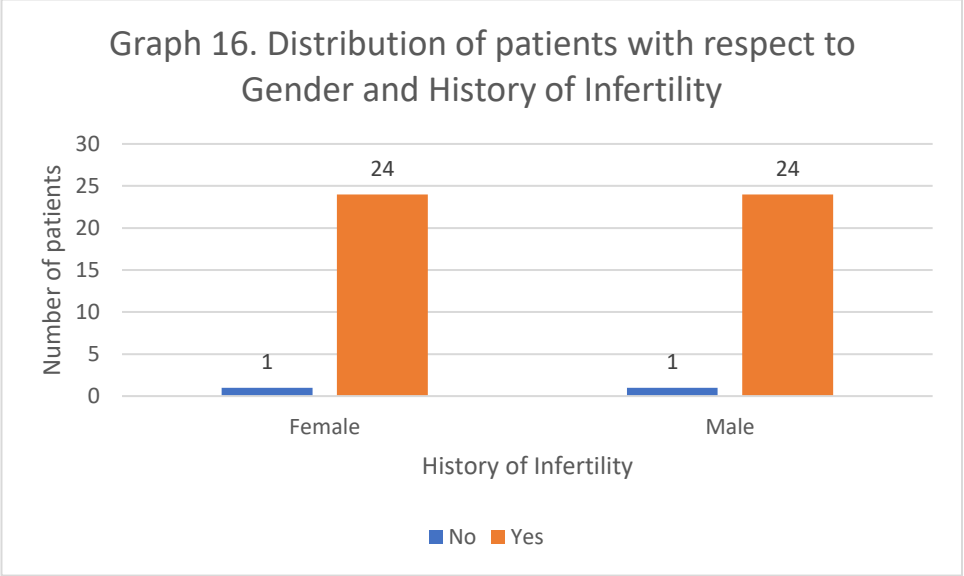
Chi-squared Test for Independence. The P value is 1



Difference between Parity status of mother with respect to gender of patient was not statistically significant.

Table no. 16. Distribution of patients with respect to Gender and History of Infertility			
	Female	Male	Total
No	1	1	2
Yes	24	24	48
Total	25	25	50

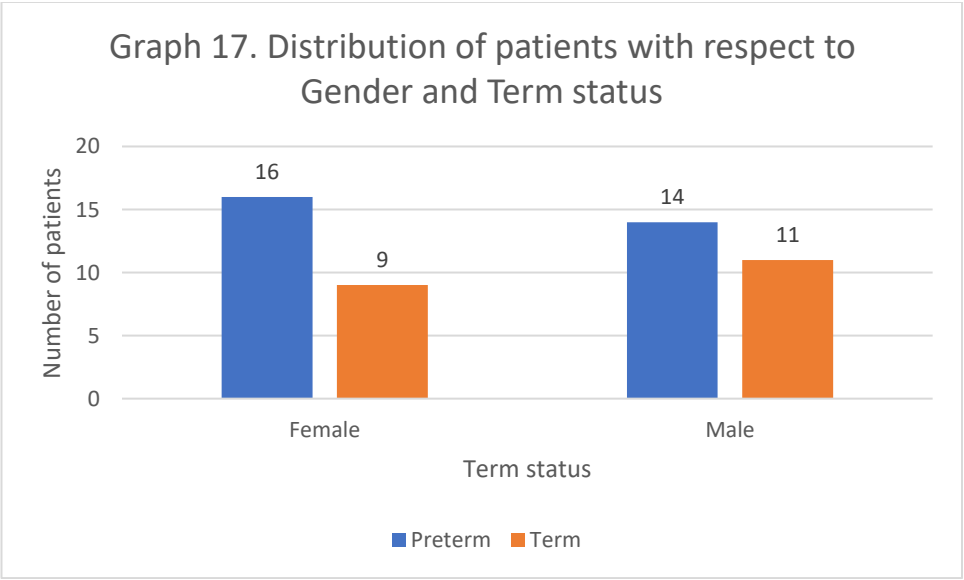
Chi-squared Test for Independence. The P value is 1



Difference between History of Infertility of mother with respect to gender of patient was not statistically significant.

Table no. 17. Distribution of patients with respect to Gender and Term status			
	Female	Male	Total
Preterm	16	14	30
Term	9	11	20
Total	25	25	50

Chi-squared Test for Independence. The P value is 0.56



Difference between Term status of mother with respect to gender of patient was not statistically significant.

Table no. 18. Distribution of patients with respect to Gender and History of recurrent abortion			
	Female	Male	Total
No	14	6	20
Yes	11	19	30
Total	25	25	50

Chi-squared Test for Independence. The P value is 0.0209

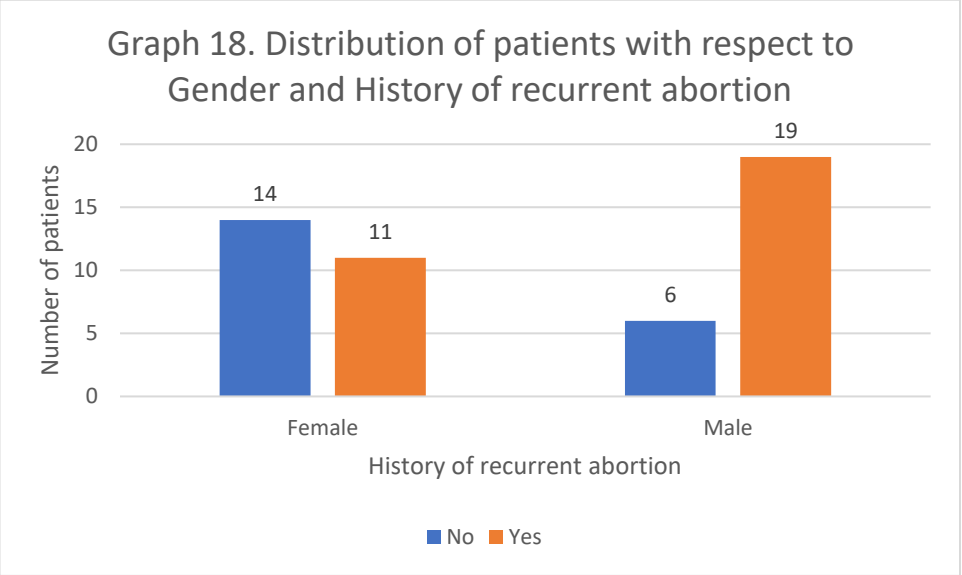


Table no. 19. Distribution of patients with respect to Gender and Type of Congenital anomaly			
Gender	Female	Male	Total
Ankyloglossia	3	2	5
Cleft Lip	6	4	10
Cleft Palate	2	3	5
CTEV	4	2	6
Genu recurvatum	2	0	2
Hip dysplasia	1	0	1
Hypospadias	2	1	3
Inguinal Hernia	2	3	5
Omphalocele	0	2	2
Posterior Uretharal valve	1	0	1
Syndactyly	1	0	1
Thyroglossal duct remnants	1	3	4
Undersecended testis	0	5	5
Total	25	25	50

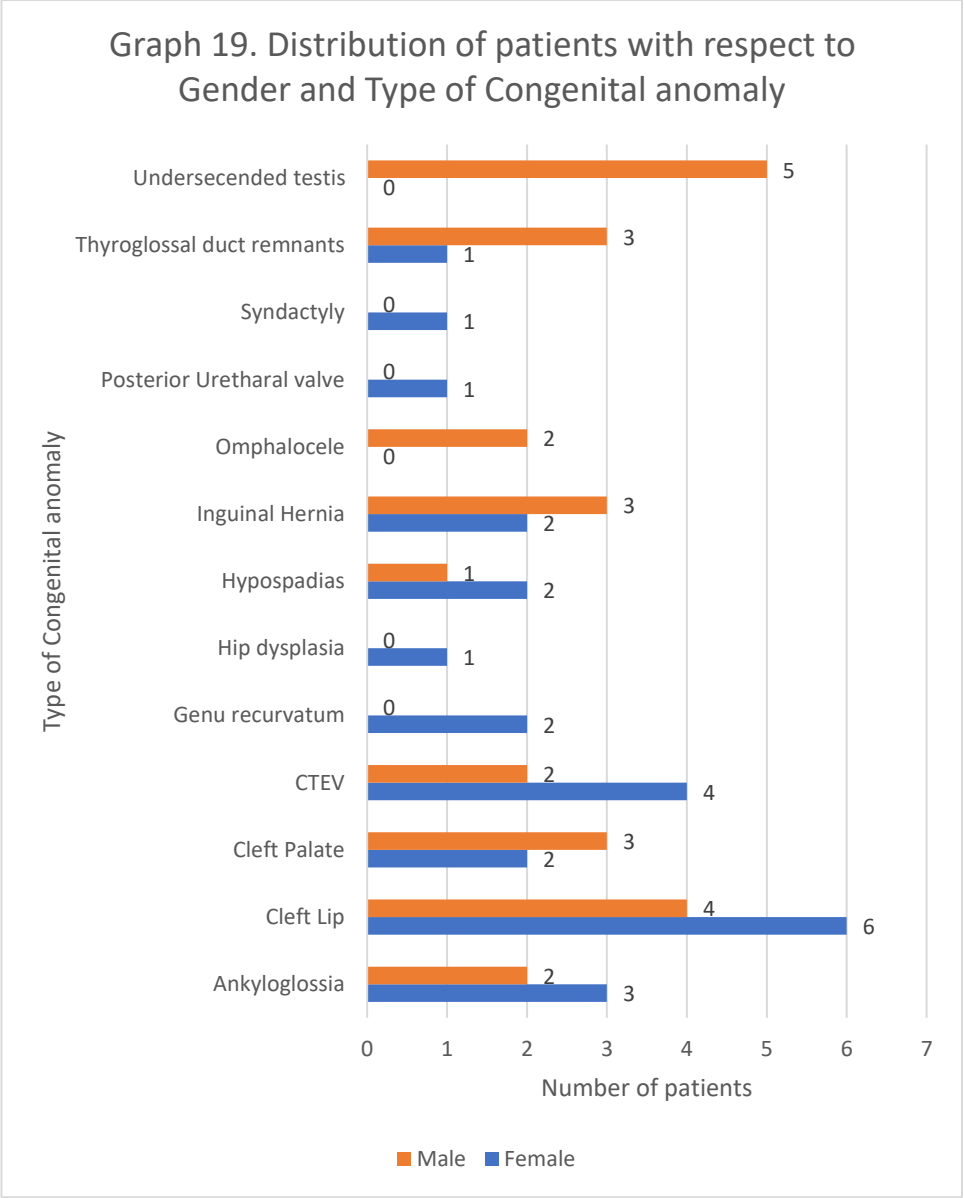
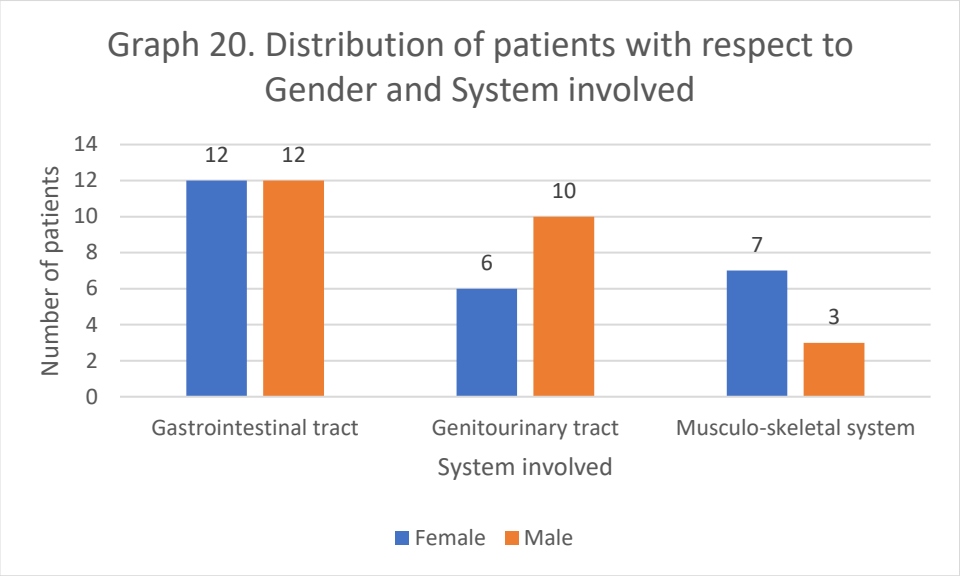


Table no. 19 and Graph 19 displays Distribution of patients with respect to Gender and Type of Congenital anomaly. CTEV and cleft palate was more in females as compared to males. However, the sample size was not enough for estimation of statistical difference with respect to gender.

Table no. 20. Distribution of patients with respect to Gender and System involved			
System	Female	Male	Total
Gastrointestinal tract	12	12	24
Genitourinary tract	6	10	16
Musculo-skeletal system	7	3	10
Total	25	25	50

Chi-squared Test for Independence. The P value is 0.2725.



With respect to the system involved in the congenital anomaly, there was no statistically significant difference reference to gender.

Table no. 21. Distribution of patients with respect to Gender and Final outcome of surgical treatment			
Gender	Female	Male	Total
Discharge against medical advice	0	1	1
Discharged	25	24	49
Total	25	25	50

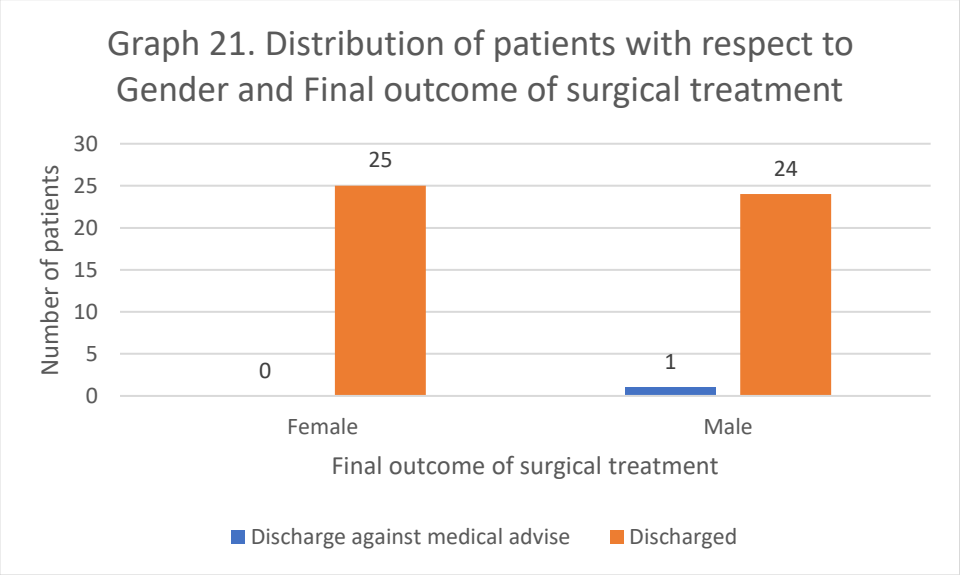
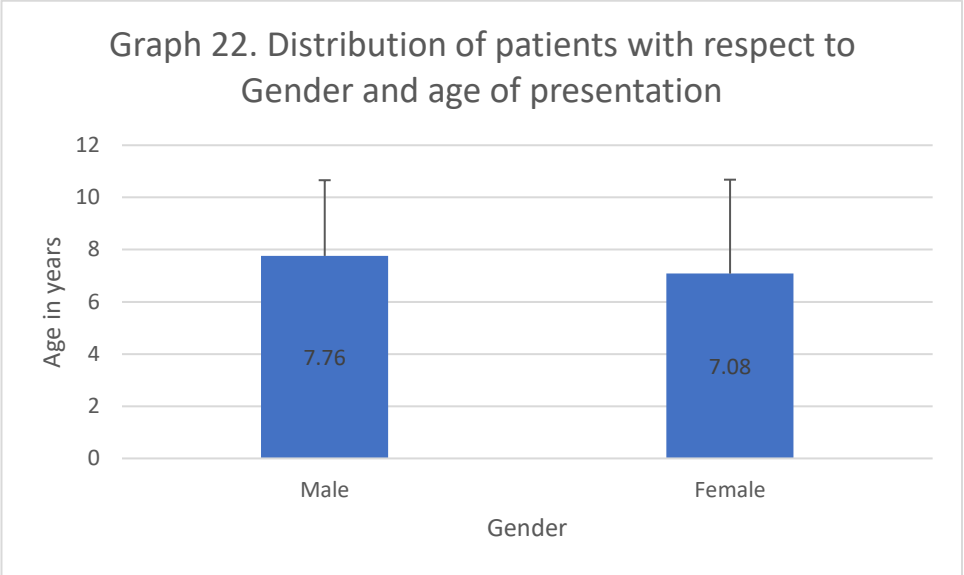


Table no. 22. Distribution of patients with respect to Gender and age of presentation			
Gender	Mean age (years)	Standard Deviation	P value
Male	7.76	2.9	0.475
Female	7.08	3.6	

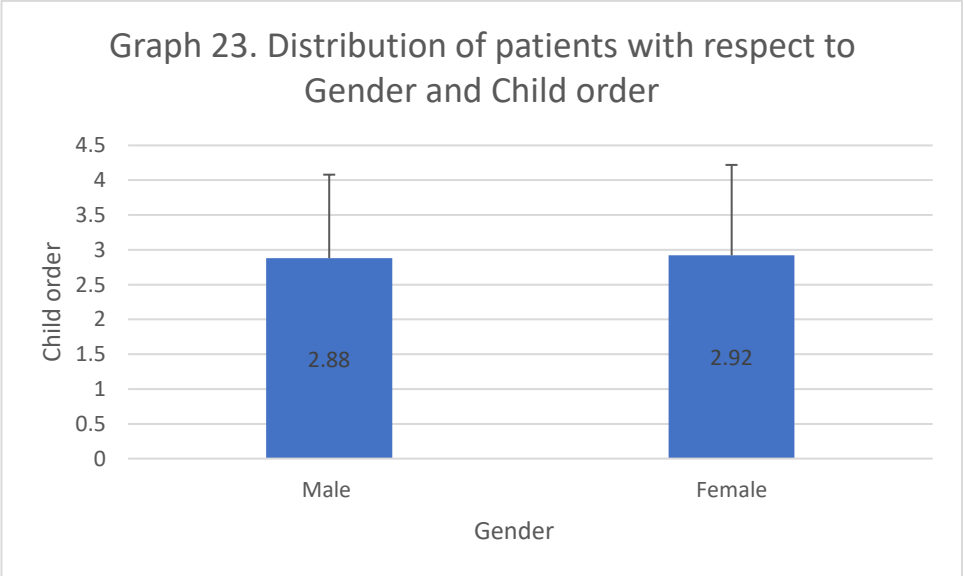
Independent Samples T Test



There was no statistically significant difference in age of presentation of males (7.76 ± 2.9 years) and females (7.08 ± 3.6 years).

Table no. 23. Distribution of patients with respect to Gender and Child order			
Gender	Mean	Standard Deviation	P value
Male	2.88	1.2	0.913
Female	2.92	1.3	

Independent Samples T Test



There was no statistically significant difference in child order of males (2.88 ± 1.2 years) and females (2.92 ± 1.3 years).

DISCUSSION

100 Patients with congenital anomaly were included in the study. Out of these, 25 were males and females each. History of consanguineous marriage was present in 30 (60%) patients. Family history of Congenital anomaly we present in 30 (60%) patients. Anomaly scan was not done in any of the patients before delivery. Medication history during pregnancy for teratogenic drugs was present in 45 (90%) patients.40 mothers (80%) were multigravida while 10 mothers (20%) of the patients were primigravida. History of infertility was present in 48 (96%) patients.30 (60%) patients were born preterm, while 20 (40%) patients were born at term. Cleft lip (10, 20%) was the most common congenital anamoly, followed of CTEV (6, 12%)Anomalies of Gastrointestinal system were commonest (24, 48%) followed by that of Genitourinary system (16, 32%). All patients in the present study underwent successful Surgical treatment. 49 patients were discharged while one patient took discharge against medical advice. Difference between

History of Consanguineous marriage with respect to gender was not statistically significant. Difference between Term status of mother with respect to gender of patient was not statistically significant. Table no. 19 and Graph 19 displays Distribution of patients with respect to Gender and Type of Congenital anomaly. CTEV and cleft palate was more in females as compared to males. However, the sample size was not enough for estimation of statistical difference with respect to gender. With respect to the system involved in the congenital anomaly, there was no statistically significant difference reference to gender.

There was no statistically significant difference in age of presentation of males (7.76 ± 2.9 years) and females (7.08 ± 3.6 years).There was no statistically significant difference in child order of males (2.88 ± 1.2 years) and females (2.92 ± 1.3 years).here our study is in concordance with the study done by Singh S etai there was no statistically significant difference in child order of males (2.88 ± 1.2 years) and females (2.92 ± 1.3 years).

CONCLUSION

In our study consengeneous marriage was one of the maim cause leading tocongenital anomaly in our study cleft lip and CTEV were the major anomalies however larger studies with more sample size are needed to come to a conclusion

REFERENCES:

1. Singh A, Gupta RK. Pattern of congenitalanomalies in newborn: A hospital basedprospective study. JK Sciences 2009;1:34-6.
2. World Health Organization. Birth defects.Executive Board, 126th session, provisionalagenda. December 2009;EB 126/10.3.
3. S Swain, A Agrawal, BD Bhatia. Congenitalmalformations at birth. Indian paediatrics1994;31(10):1187-91.
4. Suresh S, Thangavel G, Sujatha J. Methodicalissues in setting up a surveillance systemfor birth defects in India. The nationalmedical journal of india.2005 Sept-Oct;18(5):259-62.
5. Jehangir W, Ali F, Jahengir T, Masood MS.Prevalence of gross congenital malformationsat birth in the neonates in a tertiarycare hospital. APMC 2009;3:47-50.
6. Verma M, Chattwal J, Singh D. CongenitalMalformations-A Retrospective study of10,000 cases. IJP 1991;58(2):245-252.
7. Singh S, Shergill A, Singh R. Role of ultrasoundin detection of antenatal fetalanomalies. In J RadiolImag2006;16:831-34.
8. Munim S, Nadeem S, Khuwaja NA. Theaccuracy of ultrasound in the diagnosis ofcongenital abnormalities. J Pak Med Assoc2006;16:6-9.
9. Grover H. Congenital malformations inShimla. Indian J Pediatrics 2000;67:249-51.
10. Khaskheli M, Baloch S, Khushk IA, Shah SS.Pattern of fetal deaths at a universityhospital of Sindh. J Ayub Med Coll Abbottabad2007 April;19(2):32-34.
11. Rafi M, Iqbal Z, Saleem M. Pattern of congenitalmalformations and their neonataloutcome at Sheik zayed Medical college/Hospital Rahim Yar khan. Pak J MedHealth Sci 2011;5:94-6.