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Original Research Article

Ultrasonographic Frequency of Twin Pregnancies in General Population of District Jhang

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Abstract: ***Background*:** Twin pregnancy has always been of great importance and huge interest since ancient times. For the past 25 years there has been an increase in multiple pregnancies due to modern therapies. According to a study the incidence and prevalence of twin pregnancies have been increased from 18.9 cases per 1000 in 1980 to 32.1 cases recorded in 2005. ***Objective:*** To determine the ultrasonographic frequency of twin pregnancies in general population of district Jhang. ***Material and Method*:** This cross sectional study was carried out on a total of 100 participants for a period of three months. A convenient sampling technique was used in patients who visited the Manzoor Diagnostic Center, Jhang. Data was calculated by a specified performa and all measurements were taken by an experienced radiologist using ultrasonography. Data was analyzed by using SPSS version 20.0. Maternal age group and gestational age group and number of gestation were expressed in the form of frequency and percentage. Graphs were also used to display the data. ***Result:*** Among 100 participants The mean value of the maternal age was calculated as 26.80±3.53 with minimum age of 19 years and 33 years as maximum of age. The mean gestational age was calculated as 24.11±7.90. Single pregnancy was seen in 94% females while twin pregnancy was seen in 5% patients and only 1% female reported with multiple pregnancy status. 3% of twin pregnancies were seen in age group 23-27 following 2% in age group 28-32 years and 1% triple pregnancies were seen in age group 33-37 years. ***Conclusion:*** Our study established the relation of maternal age with number of gestation on ultrasound. We found ultrasonography allows a reliable, simple and rapid determination of number of gestations and in this way can improve obstetric care.

Key words: Biparietal diameter, Femur length, Gestational age, Twins, Triplet.

INTRODUCTION

Blacks have the highest incidence of twin pregnancies meanwhile; the least incidences of twin pregnancies have been seen among Asians. Africa has the highest incidences of up to 49-53 per 1000 births. Meanwhile, the incidences recorded in Japan are 1.3 in 1000 births. Incidence rate of monozygotic twins seen in worldwide population lies at 3.9 out of 1000 pregnancies.

The study was designed to evaluate the trends and rate of twin pregnancy in general population of district Jhang [1]. Chances of complications are expected to increase 6 times higher in women having multiple gestations and are expected to be hospitalized. Twin babies have a 4 times higher mortality rate than single tons.

This atypical increase in multiple pregnancies is a huge concern for public health. The cost and health hazards of twin pregnancy have always been greater as compared to a singleton pregnancy. Fetuses in multiple gestation are highly susceptible to various complications and anomalies including twin to twin transfusion syndrome [1, 2].

The use and availability of ovulation inducing drugs have contributed to this rise in multiple gestational pregnancies. Another major leading cause is the use of assisted reproductive technology known as (ART) [3, 4]. Dizygotic twinning is common with females having a long term history of using oral contraceptives [5].

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Previous studies showed extensive data for development of twinning distribution rate, but now there is need of further research for recent twinning distribution rate globally [6-8].

Marriage age of women and family size, usually influences the twinning rate in women. Higher maternal age is directly proportional to high incidence of twins. Medically assisted reproduction (MAR) has been contributing a lot in increase in twinning rates. Since 1970s. This treatment is totally different from assisted reproductive technology (ART) [6].

Year 1990 showed sudden rise in twinning pregnancies rate worldwide, which created a problem for health practitioners as well as public health because twinning rates increase the population at much higher rate. Many underdeveloped countries have few resources and this will put stress on authorities with many issues emerging like unemployment and many other things, directly and indirectly affecting the society [6]. Pakistan has population of 226.6 million as recently results showed [12], which created problems for public health department as Pakistan have very limited resources and this increase in population rate might create havoc and will promote many issues like poverty.

MATERIAL AND METHODOLOGY

This observational study was performed in Jhang district. The data was collected from patients at radiology department of Manzoor Diagnostic Center Jhang. The study duration was three months after the approval of synopsis. Total 100 patients were participated in this study.

Convenient sampling technique was used for the collection of data during October 2020 -December 2020.Ultrasound machine Toshiba Apilo XU with convex transducer probe of 3-5 MHz, transvaginal probe of 5-7.5 MHz frequency and ultrasound gel was used.

Primary data collection method was applied. Data was collected from patients attending the Manzoor diagnostic center Jhang, who meet the inclusion criteria. Data about their socio-demographic characteristics was collected through predesigned questionnaire after taking consent from the participant (Annexure attached). Ultrasound machine Toshiba Apilo XU with transabdominal probe of 3-5 MHz and transvaginal probe of 5-7.5 MHz frequency was used. A usual protocol of obstetric ultrasound scan was used, and all measurements were taken by the radiologist. Data collected through the specified Performa was entered using SPSS (Statistical package for social sciences) version 20.0. The Maternal age and Gestational age were expressed as means and standard deviation. Maternal age group and gestational age group and number of gestations were expressed in the form of frequency and percentage. Graphs were also used to display the data.

RESULTS

Total 100 cases of all age were involved in this study. The mean value of the maternal age was calculated as 26.80±3.53 with minimum age of 19 years and 33 years as maximum of age.

Table 2: Showing descriptive statistics for maternal age

	N	Minimum	Maximum	Mean	Std. Deviation
Maternal Age (years)	100	19	33	26.80	3.533

Among 100 patients, maximum frequency of patient seen in age group 28-32 (50%) following (30%) in age group 23-27 years.

Table 3: Showing descriptive statistics for maternal age class

Maternal Age (Years)	Frequency	Percent (%)
18-22	19	19.0
23-27	30	30.0
28-32	50	50.0
33-37	1	1.0
Total	100	100.0

Among 100 patients' single pregnancy was seen in 94% females while twin pregnancy was seen in 5% patients and only 1% female reported with multiple pregnancy status.

Table 4: Showing descriptive statistics for number of gestation

Gestation	Frequency	Percent (%)
Single	94	94.0
Twins	5	5.0
Triplet	1	1.0
Total	100	100.0

Among 100 cases, the mean value of the gestational age was calculated as 24.11±7.90 with minimum gestational age of 12 weeks and 39 weeks as maximum value.

Table 5: Showing descriptive statistics for gestational age

	N	Minimum	Maximum	Mean	Std. Deviation
Gestational age	100	12	39	24.11	7.901

Among 100 patients, maximum frequency of patient seen with gestation age ranges between 12-25 weeks (29%) following (24%) in GA group between 26-32 weeks.

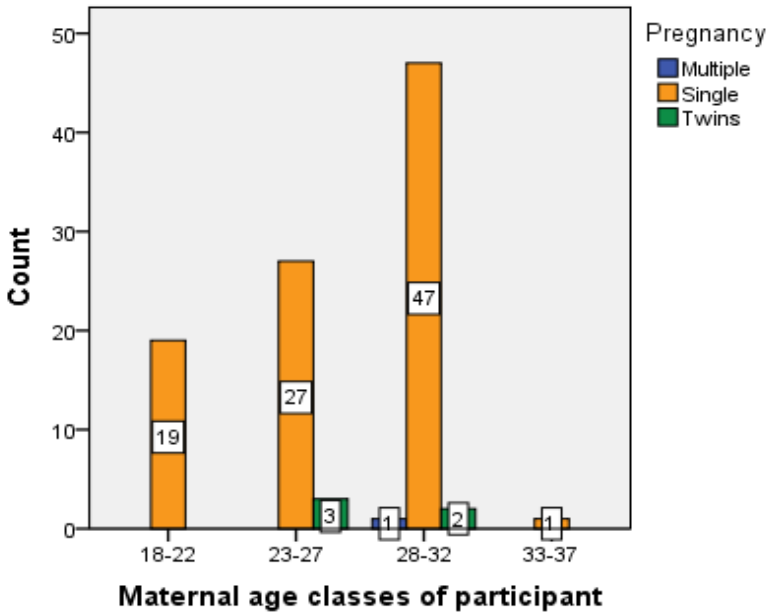
Table 6: Showing descriptive statistics for maternal age class

		Frequency	Percent
Gestational Age Groups (weeks)	**12-18**	29	29.0
	19-25	29	29.0
	26-32	24	24.0
	33-39	18	18.0
	Total	100	100.0

Among 100 cases, 3% of twin pregnancies were seen in age group 23-27 following 2% in age group 28-32 years and 1% triple pregnancies were seen in age group 33-37 years.

Table 7: Showing descriptive statistics for number of gestation with maternal age

		Pregnancy			Total
		Single	Twins	Triple	
Maternal age classes of participant (Years)	**18-22**	19	0	0	19
		19.0%	0.0%	0.0%	19.0%
	23-27	27	3	0	30
		27.0%	3.0%	0.0%	30.0%
	28-32	47	2	1	50
		47.0%	2.0%	1.0%	50.0%
	33-37	1	0	0	1
		1.0%	0.0%	0.0%	1.0%
Total		94	5	1	100
		94.0%	5.0%	1.0%	100%



Graph 1: Showing descriptive statistics for number of gestations with maternal age

DISCUSSION

This study was conducted at Manzoor Diagnostic Center Jhang. Among 100 cases, the mean value of the gestational age was calculated as 24.11±7.90 with minimum gestational age of 12 weeks and 39 weeks as maximum value. Among 100 cases, 3% of twin pregnancies were seen in age group 23-27 following 2% in age group 28-32 years and 1% triple pregnancies were seen in age group 33-37 years. Twin pregnancies carry a much higher risk of neonatal mortality and morbidity compared to singleton pregnancies. The risk of perinatal death is approximately sixfold higher than in singleton pregnancies. One of the main reasons for this markedly elevated mortality rate is preterm birth and fetal prematurity resulting. The risk of preterm birth is significantly higher in twin pregnancies than in singleton pregnancies. The odds ratio is between 11.2 and 48.3 [15].

The elevated incidence of preterm birth in twin pregnancies has an impact on therapeutic and diagnostic procedures in pregnancy. Appropriate preventive measures are being discussed controversially. Strategies of prophylactic treatment have been suggested. In this regard bed rest is the primary measure to be taken. The lack of knowledge about the danger of preterm birth in the public is remarkable. In this respect, 50% of women did not know that not only twin pregnancy, but also preterm delivery is a risk factor for their present pregnancy [13]. Twin pregnancy carries about a three-fold risk of toxemia as compared with single pregnancy but without any corresponding increase in the fetal mortality rate. Twin pregnancy is not a significant cause of prolonged labor [4].

There is broad evidence that the enormous change in the global twinning rate is to a large extent caused by the increased use of medically assisted reproduction, which started in the wealthier regions of our world in the 1970s, spread to emerging economies in Asia and Latin America in the 1980s and 1990s, and reached the more prosperous sub-populations of South Asia and Africa only after 2000 [18-20].

The strong increase in number of twin births started to raise concerns among medical authorities and policy makers, because of the public health problems related to twin births. Twins are a high-risk group associated with complications during pregnancy, at birth and thereafter, including preterm deliveries, lower birth weight, increased still births and infant and maternal mortality [11, 21, 22].

CONCLUSION

Accurate and detailed data on twin rates are also important for forecasting the demand for health services given the health implications for twins and their mothers. This is particularly important in low-income countries, where mortality among twins is highest and care for women expecting twins is often inadequate by modern standards. Improved registration and monitoring of twin births would help target these health issues. More generally, it would allow us to better understand the cultural, political, and economic factors that contribute to differences in twin rates not only between but also within countries. Pakistan has very limited resources and these sources are depleting day by day. Increase in twin pregnancy will result in increase in population and affects overall health of mother and fetus as well. On the other hand, rise in twin pregnancies will increase overall population and thereby resulting in poverty.

REFERENCES

1. Akaba, G. O., Agida, T. E., Onafowokan, O., Offiong, R. A., & Adewole, N. D. (2013). Review of twin pregnancies in a tertiary hospital in Abuja, Nigeria. *Journal of health, population, and nutrition*, *31*(2), 272-277.
2. Rezavand, N., Veisi, F., Malek-Khosravi, S., Zangeneh, M., & Kohzadi, M. (2014). Assessment of frequency of twin pregnancy and neonatal outcome in deliveries of Mo'tazedi Hospital, Kermanshah in 2004–2007. *The Journal of Obstetrics and Gynecology of India*, *64*(1), 19-22.
3. Turton, P., Neilson, J. P., Quenby, S., Burdyga, T., & Wray, S. (2009). A short review of twin pregnancy and how oxytocin receptor expression may differ in multiple pregnancy. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *144*, S40-S44.
4. Pathan, N. F., Jamali, S., Siddiqui, M. A., Sohu, K. M., Jamali, A. A., Naz, A., & Ahmer, A. (2021). Perinatal Outcome in Twin Pregnancy at Khaipur Medical College, Khairpur Mirs, Pakistan. *Journal of Pharmaceutical Research International*, 46-52.
5. Pison, G., & Couvert, N. (2004). The frequency of twin births in France: The triple influence of biology, medicine and family behaviour, Population (Paris), 59(6), 765–794.
6. Monden, C., Pison, G., & Smits, J. (2021). Twin Peaks: more twinning in humans than ever before. *Human Reproduction*, *36*(6), 1666-1673.
7. Bulmer, M. G. (1970). The Biology of Twinning in Man. Oxford: Clarendon Press.
8. Hall, J. G. (2003). Twinning. *The Lancet*, 362, 735-743.
9. Botha, B., Shamley, D., & Dyer, S. (2018). Availability, effectiveness and safety of ART in sub-Saharan Africa: a systematic review. *Human reproduction open*, *2018*(2), hoy003.
10. Gómez, N., Sosa, A., Corte, S., & Otta, E. (2019). Twinning rates in Uruguay between 1999 and 2015: association with socioeconomic and demographic factors. *Twin Research and Human Genetics*, *22*(1), 56-61.
11. Smits, J., & Monden, C. (2011). Twinning across the developing world. *PloS one*, *6*(9), e25239.

12. https://worldpopulationreview.com/countries/pakistan-population. (Cited, 15-09-2021)
13. Chervenak, F. A., & Lockwood, C. J. (2016). Twin pregnancy: Prenatal issues, pp. 1–35.
14. Bender, S. (1952). TWIN PREGNANCY* A Review of 472 Cases. *BJOG: An International Journal of Obstetrics & Gynaecology*, *59*(4), 510-517.
15. Campbell, D. M., & Templeton, A. (2004). Maternal complications of twin pregnancy. *International Journal of Gynecology & Obstetrics*, *84*(1), 71-73.
16. Büscher, U., Horstkamp, B., Wessel, J., Chen, F. C. K., & Dudenhausen, J. W. (2000). Frequency and significance of preterm delivery in twin pregnancies. *International Journal of Gynecology & Obstetrics*, *69*(1), 1-7.
17. Glinianaia, S. V., Pharoah, P. O. D., Wright, C., & Rankin, J. M. (2002). Fetal or infant death in twin pregnancy: neurodevelopmental consequence for the survivor. *Archives of Disease in Childhood-Fetal and Neonatal Edition*, *86*(1), F9-F15.
18. Botha, B., Shamley, D., & Dyer, S. (2018). Availability, effectiveness and safety of ART in sub-Saharan Africa: a systematic review. *Human reproduction open*, *2018*(2), hoy003.
19. Inhorn, M. C., & Patrizio, P. (2015). Infertility around the globe: new thinking on gender, reproductive technologies and global movements in the 21st century. *Human reproduction update*, *21*(4), 411-426.
20. Mills, M., Tanturri, M. L., Rotkirch, A., Sobotka, T., Takacs, J., Miettinen, A., ... & Barban, N. (2013). State of the art report–The changing role of children: Assisted reproduction, late fertility and childlessness. Report to the European Union of the Collaborative Project, 2014.
21. Choi, Y., Bishai, D., & Minkovitz, C. S. (2009). Multiple births are a risk factor for postpartum maternal depressive symptoms. *Pediatrics*, *123*(4), 1147-1154.
22. Jena, A. B., Goldman, D. P., & Joyce, G. (2011). Association between the birth of twins and parental divorce. *Obstetrics and gynecology*, *117*(4), 892-897.

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