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SENSITIVITY OF SONOGRAPHY IN THE ASSESSMENT OF GESTATIONAL TROPHOBLASTIC DISEASE

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Abstract:
Objective: *Hydatiform mole is a disorder of fertilization categorized by an anomalous development of the chorionic tissues. The occurrence of this disorder is 1 per 547 persons in our country Pakistan. There is much importance of early recognition of this complication. The aim of this research work is to examine the sonographic value in the assessment of GDT (gestational trophoblastic disease).*
Methodology: *This was a transverse hospital based research work. Total ninety-five females diagnosed with GTD, various condition of abortions and wrecked ovum with the usage of sonography were the part of this research study. All the patients experienced hysterectomy and pathology confirmed the various kinds of disorders.*
Results: *Total 95 patients were the participants of this research study with an average age of 24.050 years. Total 89 patients among them were available with CHM (Complete Hydatiform Mole) & remaining 6 patients were available with PHM (partial hydatiform mole). The sensitivity was 87.50% for the identification of the molar pregnancies completely when sensitivity was 91.30% in the detection of complete hydatiform mole and &60.0% in the detection of partial hydatiform mole.*
Conclusion: *The results of this research work displayed that sonography is very effectual diagnostic method for discovery of the molar pregnancies; however, it has high sensitivity in the identification of complete and partial hydatiform moles. There is need of further studies to elaborate the performance of ultrasonography in this matter.*
KEY WORDS: *Ultrasonography, Kidney, Hydatiform, Trophoblastic, Endometrium, Molar Pregnancies.*

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INTRODUCTION:

GTD is the abnormal growth as well as development of the chorionic tissues [1]. They include CHM, PHM, chorio-carcinomas & invasive moles [2]. The most common types are the hydatiform moles and categorization of these moles carried out in to two types as PHM & CHM [3]. The rarest forms of GTD are chorio-carcinomas &invasive moles. The metastasis of multiple organ as liver, breast, kidney, pancreas, lungs, adrenal & thyroid glands can also occur in later entities [4]. There are some reports which presents the prevalence of GTD varying from 1per 1200 to 1 per 2000 cases of pregnancies in United States of America [5], one per 1347 to one per 3004 in Tunisia [6],4.80 per 1000 to 2 per 10,000 in Turkey [7] and 1 per 547 in Pakistan [8]. Because of the high prevalence of this complication in our country Pakistan, the danger of the persistent GTD or GTN (gestational trophoblastic neoplasia) is high, so there is much importance of the molar pregnancies [9,10].

Ultrasonography provides very detailed and secure analysis for not only the structure of placenta but also for its function [11]. Variable features of sonography which predicted the gestational trophoblastic diseases have been stated [12]. The features of sonography of CHM normally defines a heterogeneous echogenic mass of endometrium with many different sized cyst, though only greater than half of the first three months of pregnancy, there is classic appearance of the molar pregnancies [2,13]. Bleeding through vagina is mostly appearing g symptom of trophoblastic disease because of delayed identification of complete hydatiform mole in the duration of 16 to 17 weeks of pregnancy [3]. The size of placenta is much high as compared to the gestation age and increased HCG levels are other clinical aspects [3].

Females suffering from partial hydatiform moles historically are present with less prominent aspects in comparison with the patients of CHM [3,14]. Though the ultrasound is very effective in the identification of the molar pregnancies, but histological verifications mandatory [3,9]. The in time identification of the molar pregnancies is the result of the sonographic detection or early examination in the laboratory [15]. This research work aimed to examine the sonographic value in the identification of the GTD.

METHODOLOGY:

This was a transverse research work. The duration of this research work was from December 2014 to March 2019 in Allied Hospital Faisalabad. Total ninety-five females with the diagnosis of GTD with sonography, various types of abortions and wrecked ovum and unidentified pathology who could face the hysterectomy, were the part of this research work. Two pathologists determined the type of gestational trophoblastic disease. We gathered the information about demography as age, pregnancy number & previous clinical history of GTD from the nurse. This research work performed in accordance with Helsinki declaration. The ethical committee of the hospital gave the permission to conduct this research work. We took the written consent from every participant before the start of the research work.

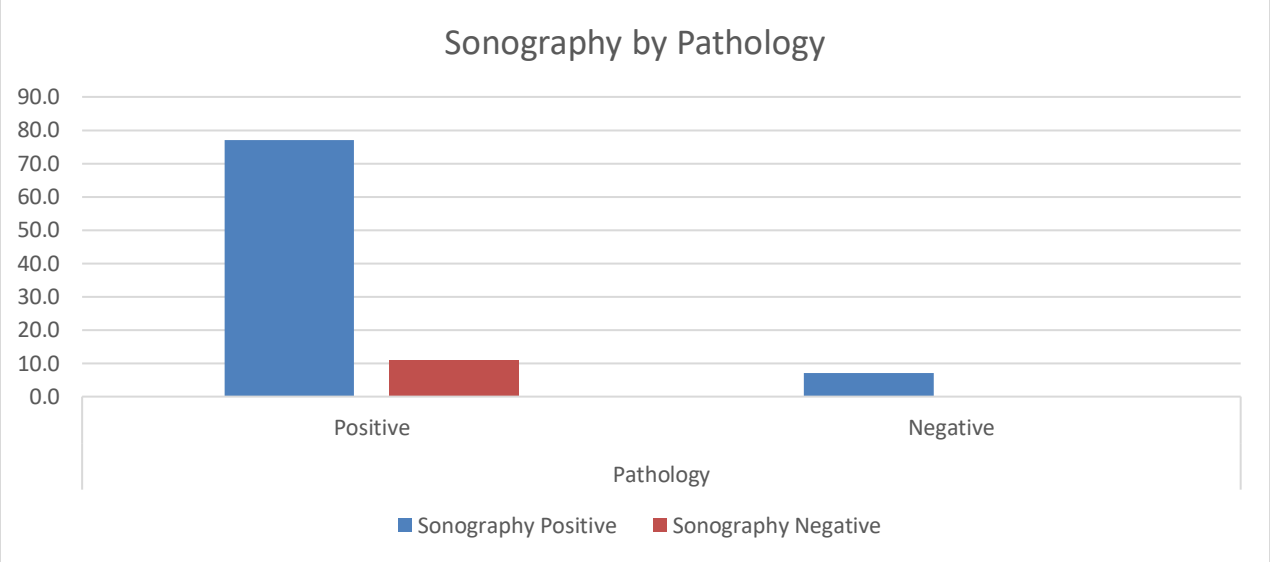
SPSS V. 12 was in use for the statistical analysis of the collected information. The presentation of the demographic data carried out in average, median & standard deviations. We employed the non-parametric association to check the relationship between type of GTD with the mother's age, experience of gestational trophoblastic disease and kind of GTD; we also calculated the sensitivity of the process of sonography. Furthermore, we calculated the odd ratios with CI of 95.0%. P value of less than 0.050 was significant.

RESULTS:

There were total 95 patients in this research work, eighty-nine patients were available with CHM and 6 patients were available with PHM. The range of the age of patients was from 16 to 55 years with an average age of 24.050 years. The division of the patients carried out into various groups in accordance with their age & pregnancy number they had. The comparison of the sonographic assessment of the complication carried out with pathological identification which is available in Table-1.

Table-I: Evaluation of Sonography by Pathological Confirmation

		Sonography	
		Positive	Negative
Pathology	Positive	77.0	11.0
	Negative	7.0	0.0



The sensitivity was 87.50% for sonographic assessment of the molar pregnancy completely; though sensitivity was 91.30 for complete hydatiform moles detection and 60.0% for the detection of partial hydatiform identification.

DISCUSSION:

The features of sonography of CHM normally defines a heterogeneous echogenic mass of endometrium with many different sized cyst, though only greater than half of the first three months of pregnancy, there is classic appearance of the molar pregnancies, the other may appear as an anembryonic GS, not complete miscarriage or heterogeneously broad endometrium with no characteristic vesicular manifestation [13]. The differential identification of complete hydatiform moles in sonography contains hydropic degeneration of placenta & pseudo-mole of placenta. The earlier happens after the demise of the fetal and it can appear indistinguishable to complete hydatiform mole on sonography [13]. Pseudo-mole of the placenta can have association with the preeclampsia & syndrome of Beckwith-Wiedemann. There is availability of the normal development of the fetal in the first three months of pregnancy [13].

The appearance of the partial mole on sonography is an inflated placenta with focal region with different-sized cysts. Fetus has many congenital abnormalities and retardation of the growth. The differential identification for PHM includes one twin pregnancy with single fetus & placenta with an associated CHM pregnancy. In the case of invasive moles, sonography can represent the availability of the mass of uterine similar to complete hydatiform mole and sometimes with incursion to myometrium [13]. This research work displayed the 87.50 was the sensitivity of the sonography in the identification of the gestational trophoblastic diseases. We found the 91.30% sensitivity in the detection of complete & 60.0% sensitivity in the identification of the partial hydatiform moles. In this research work, we were not able to find out the other diagnostic features as specificity, negative & positive predictive values and precision because of the deficiency of the control group. In one transverse research work, sensitivity of the sonography in the identification of the gestational trophoblastic diseases was 75.860%, which was more precise in the identification of the CHM as 96.150% & 28.0% in case of PHM [16].

In one other research work, overall sensitivity of the ultrasound was approximately 44.0% for these diseases, 20.0% for partial and 95.0% for complete hydatiform moles, they discovered that the reliability of the ultrasonography is much high in the identification of the complete hydatiform moles in comparison with the partial hydatiform moles [17]. Some other research work has stated that sensitivity of 39.0% for ultrasound in identification of gestational trophoblastic diseases, however there was small sample size in all these research works [18]. In the research work of Dobkinet, he compared the Doppler sonography with the sonography of ultrasound sonography, he found 70.0% sensitivity for the ultrasound and there was 90.0% sensitivity for the procedure of Doppler sonography [19].

In accordance with the findings and comparison of various research works, we come to know that one of the effective tools for the identification of the gestational trophoblastic diseases is ultrasound. There are some limitations of this research work as this was

a transverse research work and the sample size of this research work was not too high. There is need of further research to consolidate the findings of the findings of this research work.

CONCLUSION:

The results of this research study concluded that sonography is very effectual diagnostic method for the molar pregnancies. However, it has high sensitivity in the detection of partial and complete hydatiform moles. There is need to perform other research works to explain the performance of ultrasonography in its diagnostics.

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