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Research Article

**THE ABNORMAL ULTRASOUND FINDINGS IN ABORTIONS:  
CASES PRESENTING IN A TERTIARY CARE HOSPITAL**<sup>1</sup>Dr. Hina, <sup>2</sup>Dr. Muhammad Zeeshan Khan, <sup>3</sup>Dr. Muhammad Umer Iqbal<sup>1</sup>Holy Family Hospital Satellite Town, Rawalpindi<sup>2</sup>PIMS Hospital Islamabad<sup>3</sup>Allied Hospital Faisalabad**Abstract:**

**Objective:** Abortion characterizes finishing the pregnancy and removing the pregnancy products before the 20 weeks of pregnancy. it is reported to be the most common complication of pregnancy, estimating prevalence to be 10%.

**Material and Methods:** This research study is aimed at finding out the abnormal ultrasound findings in cases of abortion referred to Holy Family Hospital Satellite Town Rawalpindi, done from June 2016-july 2017. It is a retrospective type of cross-sectional study conducted on 90 patients; The ultra sound was used to confirm abortion, and the gestational sac study was done thoroughly at 12 weeks using Crown-rump length and fetus of 10 mm. The medical history was taken in detail, transvaginal ultrasound was done by trained females sonographer, the findings were recorded. The mean age of patients was  $26 \pm 3.89$ , and highest prevalence was found in 21-25 years' age group. The data was analyzed by SPSS 20.

**Results:** Based on findings of USG, 69.8 % of patients had gestational age less than 12 weeks and 30.2 % of cases had gestational age 12-20 weeks. it was also noted that 37.3 % of cases experienced abortion in their first pregnancy, 25.5% in the second pregnancy, 19.3% in 3rd and 18 % in fourth and above fourth pregnancy.

**Conclusion:** It is concluded from the results of the study that proper health and antenatal education must be given to the pregnant females to decrease the rate of this stigma.

**Key Words:** Gestational, Abortion, Cardiac Activity, Abnormal Ultrasound, Abortion

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**INTRODUCTION:**

Termination or losing of pregnancy before the 20th gestational week is termed to as abortion . At the beginning of pregnancy, it is a quite a prevalent complication, and it is classified into a number of types including Threatened Abortion, Incomplete Abortion, Inevitable abortion, Missed Abortion, Complete Abortion and Septic Abortion [2]. In 15-20 percent of pregnancies, an early complication occurs as pregnancy failure, Blighted-Ovum, forgotten abortion, and results in early fetal death. Although 80 % of the abortions reported to occur in the first 12 weeks of pregnancy yet the exact figure is not known and it much higher, a large number of pregnancies are lost and the mother does not even know about the pregnancy [3]. The significant observation that indicate the viability of fetus is cardiac activity. However, the lack of observing the cardiac activity of the fetus is not abnormal. And Observing the heartbeat in > 90 % of the cases is associated with the pregnancy continuation [4]. Spontaneous Abortion is the loss of pregnancy before 20th week (139 days). If the abortion occurs before the 12<sup>th</sup> week, it is termed as Early Abortion. If it happens in 12-20<sup>th</sup> week it is termed as late abortion. The frequency of spontaneous abortion is %40-50 [5]. The parental age and the number of deliveries pose risk to the spontaneous abortion. Finding the separate and distinct gestational sac with central echoes is quite a strong, yet it is not definite reason to record the death of gestational products. The heartless fetus or no movement in the gestational sac can be observed in missed abortion [6]. As the fetus is more likely to be of smaller size than the expected for the size of gestational sac or it might be appearing formless or unformed that depends on the time passed from the fetal death. Only some part of the fetus remains inside the uterus in incomplete abortion seen with the help of mixed echo. [7] The fetus and the gestational sac get separated from the site of implantation and lie in the lower segment of the uterus in inevitable abortion. In 65 % of the abnormal pregnancies, the proportional relationship between the gestational sac size and  $\beta$ HCG serum level was noted; The level of  $\beta$ HCG turned out to be lower. The hormonal measurement of Estrogen, HCG, Progesterone, AFP, and HPL are applied to

determine the survival of fetus. However, the more precise method for diagnosis is ultrasound [8]. Ultrasonography is a quite cheap and even more accessible than other prevalent methods. The gestational symptoms that would lead to abortion report all forms and the symptoms are studied in USG studies [9]

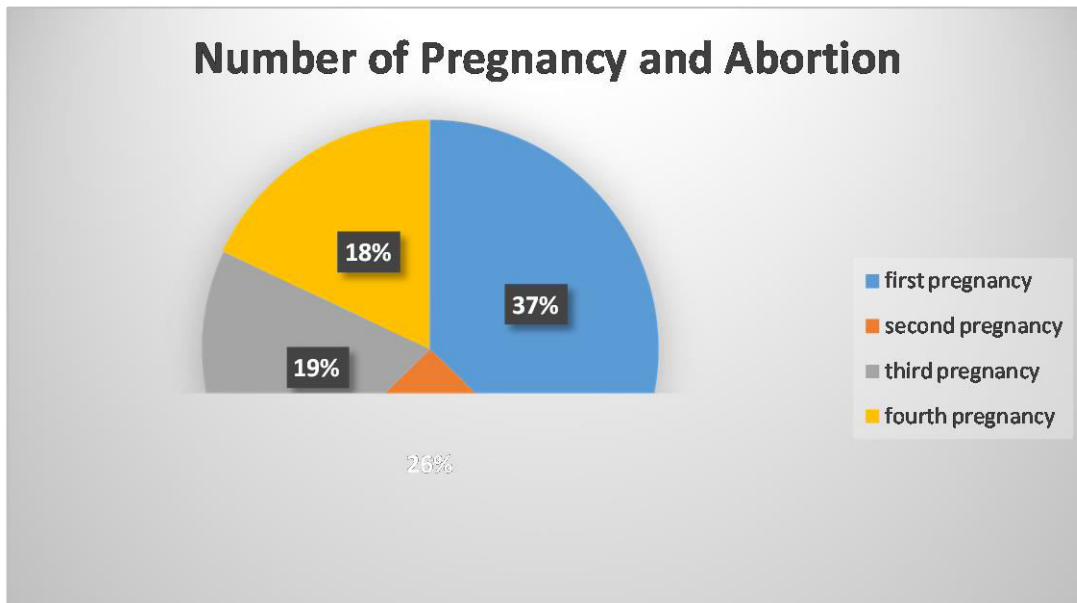
**MATERIAL AND METHODS**

This is descriptive cross sectional study done in Holy Family Hospital Satellite Town Rawalpindi from June 2016-july 2017. 90 patients were enrolled in the study who presented in the radiology department for ultrasound. Those patients were included in the study who have features suspected for pregnancy loss like amenorrhea, abdominal pain, positive pregnancy test and vaginal bleeding. The patients with appendicitis were not enrolled in the study. The preformed questionnaires were used to collect data then it was analyzed with spss21. The patients first were got checked by physicians then transvaginal and transabdominal ultrasound was done by consultant radiologist. 7.5 MHZ TVS frequency probe for TVS and 3.5 MHZ TVS probe used for trans abdominal USG.

**RESULTS**

In our study, 90 patients whose mean age was  $26 \pm 3.89$  were enrolled in the study. The rate of abortion had highest prevalence for patients aging 21-25, and it was the lowest for patients aging 37-44. On the basis of the LMP or USG, the gestational age was observed to be <12 weeks in 69.8 percent cases of abortion, and in 30.2 % cases of 12-20 weeks. The observations emphasize that, in 37.3% of the cases the first pregnancy was followed by abortion; 25.5 % of cases faced this in their second pregnancy, 19.3 percent during their third pregnancy, and 18 percent underwent this in their fourth pregnancy or subsequent pregnancies. It was also noted that 50.8% cases had no history of abortion. According to our study, 26.15 % cases had a history of single abortion, 14.8 percent had a history of more than one abortions, and 11.6 percent of the patients suffered from this for three times or more. In terms of the clinical symptoms, the most commonly reported symptom was spotting.

Clinical symptoms on presentation	
Pain	66.15%
Tissue disposal	16.45%
Severe bleeding	17.4%



The frequency of pain, tissue disposal and severe bleeding, were 66.15, 16.45, and 17.4 respectively. The percentage of various ultrasounds result in different types of abortions was recorded as 55.50 percent for forgotten abortion, 26.14 percent incomplete abortion, 7.3 percent mole, 7.05 percent ectopic pregnancy, and 4.01 percent septic abortion. Ultrasound symptoms include deformed gestational sac, heterogeneous areas in the uterine cavity, no embryo sac and pelvic free fluid.

#### DISCUSSION:

Abortion is characterized by the loss of the pregnancy followed by the removal of the products of abortion during the first 20 weeks of the pregnancy. It is the most common complication of the pregnancy in accounts to be 10% prevalent [15]. It may be caused by disorders related to fetus like genetic disorders, congenital anomalies of mother or the fetus i.e uterin structural problem, autoimmune disease, thrombophilia, genetic diseases or hormonal issues. [16] Furthermore, the infections like *Neisseria gonorrhoeae*, *Chlamydia trachomatis*, *ureaplasma urealyticum*, *Escherichia coli*, play role in creating abnormalities in the reproductive system and cause

infertility [17]. The general part of pregnancy care all across the world includes routine ultrasound [18]. These days, the usage of ultrasound is emphasized as a screening or as diagnostic tool having least complications [20]. In our study, 90 patients were enrolled. The study reports that the highest percentage was noted for ages 21-25, and it was reported to have the lowest prevalence in patients aging 37-44 years. The gestational age was observed to be of than 12 weeks in 69.8% of the cases, and in 30.2 % cases in 12-20 weeks. The results of our study are similar to those of the study done by Zanei-Ghahramani *et al*, 2002 to find out the findings of ultrasound in abortion cases that result in curettage in

Imam Hussein Hospital in Tehran from 1999 to 2002 [21]. The results of our indicated that in 37.3 % of cases, the first pregnancy resulted in abortion; 25.5 % subjects experienced this in the second pregnancy, 19.3 percent suffered in their third pregnancy, and 18 percent faced the stigma in their fourth pregnancy. The results also indicated that 50.8 percent of the patients were having no history of abortion. In a study done by Yazdani et al, 2008, a case of forgotten pregnancy was recorded with primary diagnosis of abdominal pregnancy in Babol. A 29-year-old woman with the first pregnancy was included in the study. She was having abdominal pain and vaginal bleeding. In the study mentioned above, it was indicated that the abdominal ectopic pregnancy diagnosis might be a cause of problem based on the reports of ultrasound examination. Definite diagnosis can be made on Laparoscopy or Laparotomy [22]. This shows somehow consistency with the results of the present study. In a study done by Shekarchi et al (2008) performed to observe the USG findings of the cases of abortion that result in curettage in Imam Hussein Hospital in Tehran from 2002 to 2005, the mean age of patients was 28.1 ( $\pm 5.1$ ); the prevalence was highest in patients aging 20-30 years. In 69% of cases of abortion, the age of gestation was < 12 weeks and in 31 percent of the cases it was reported to be 12 to week 20 [23]. Besides the difference of the statistical population, the results of the aforementioned study are in line with our study. Sadr et al, 2005 performed a study to assess the gestational age in the first 12 weeks of pregnancy based on size of gestational sac in patients being referred to the hospitals of Shahid Beheshti University of Medical Sciences. The results of the study indicate a positive correlation coefficient among all diameters of gestational age and sac. That suggests that they were quite consistent with each other and it confirms the increasing importance of ultrasound in the first 12 weeks of pregnancy [24]. This is consistent with the findings of the present study.

### CONCLUSION:

The ultrasound scan plays a vital role in the diagnosis when clinical symptoms are not enough for diagnosis. The results of our present study emphasize on ever increasing importance of early diagnosis of pregnancy in the less than 12 weeks in patients having no history of disease. The results also highlight the importance of abnormal ultrasound findings for the diagnosis of the cases resulting in abortion in pregnant women. It is recommended that Similar studies with larger statistical population be performed so that the procedure may be explained in detail.

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