International Journal of Pharmaceutical Science and Research
www.pharmacyresearchjournal.com
Volume 1; Issue 2; February 2016; Page No. 04-08

Awareness regarding miscarriages in female population of Karachi

[1]*Sana Sarfaraz, [2] Wajeeha Fatima, [2] Tanveer Bano, [3] Abeer Sarfaraz

[1] Department of Pharmacology, Faculty of Pharmacy, Jinnah University for Women, Karachi, Karachi, Pakistan.

[2] Department of Pharmacy, Jinnah University for Women, Karachi, Karachi, Pakistan.

[3] Resident, Department of Medicine, Liaquat National Hospital Karachi, Karachi, Pakistan.

Abstract
Objective: Pregnancy is an important phase of female reproductive cycle all over the world. It normally consists of three trimesters and care should be taken during each trimester for safe delivery of the offspring into the world. Miscarriages are complication of pregnancy that can result in loss of conception. Miscarriages usually result in leaving the females depressed and devastated. The aim of the study was to evaluate awareness regarding miscarriages in females, its signs, causes, age and trimester at risk and precautions to be taken to avoid miscarriage.
Methodology: It is a cross sectional survey based study comprising of N=250 females from different private and public hospitals and universities of Karachi as well as house wives of different residential areas.
Results and Discussion: From our study we came to know that majority of females (96%) were aware about term miscarriage, 74% were aware about the signs of pregnancy, 94.8% considered heavy workload could induce miscarriage, 28.8% considered hormonal disturbances as main cause of miscarriage. Majority females considered first trimester and age group above 35 years more prone to miscarriage.
Conclusion: From our study we came to conclude that majority of the female population were aware about miscarriage and its signs however awareness needs to be created on large scale regarding its causes, risk factors and precautions to avoid miscarriage

Keywords: Miscarriage, Trimester, Vaginal Bleeding and Vitamins.

1. Introduction

Miscarriage is the most common complication of early pregnancy. [1] It is defined as the spontaneous loss of the conception or the loss of a pregnancy before 20-24 weeks of gestation, [2, 3] which occurs in nearly 25% of clinically recognized pregnancy. [3] Preterm birth, delivery of a baby between 24 and 37 completed weeks of gestation, occurs in 6-10% of pregnancies. [4] Up to 85% of neonatal deaths are attributable to preterm birth (especially those delivered before 28 weeks). [5] The reported rate of pregnancy loss in women with a missed menstrual period and positive urine pregnancy test is 12-24%. The true rate of miscarriage is probably higher because many losses occur preclinical, before a menstrual period is missed. [6] In 10% of pregnancies, miscarriage is a clinically recognized event, and in another 20% of pregnancies, it is manifested only as a transient elevation of the level of human chorionic gonadotropin before or near menses. [7]

According to the March of Dimes, more than 80% of miscarriages occur within the first three months of pregnancy and if it occurs after 20 weeks of gestation it is known as late miscarriage, however they rarely occur. [8] Maternal age of less than 18 years or an age of 35 years or more is an independent risk factor for miscarriage. [9] The rate of miscarriage also increases with an increasing number of previous miscarriages, and increasing parity. [10] The sharp increase in the rate of miscarriage in women 35 years of age or older is due in part to increasing rates of aneuploidy in association with older oocytes. [10, 11]

Although there are many known causes and risk factors for early pregnancy loss, the most common cause is sporadic chromosomal abnormality. [12-16] Knowledge regarding the etiology of pregnancy loss is useful in counseling patients with recurrent and sporadic pregnancy losses. In addition, recent cost-effectiveness analyses have shown significant cost savings when chromosome testing is used to guide further workup in patients with two or more miscarriages. [17, 18]

Recurrent miscarriage, defined as the loss of three or more consecutive pregnancies, occurs in approximately 1% of couples attempting to bear children. [19] Although a small proportion is associated with identifiable abnormalities in the mother or the fetus, the cause of most cases of recurrent loss remains unknown. It is recognized that successful pregnancy outcome depends on the development and maintenance of an adequate utero-placental circulation, with evidence that prothrombotic factors underlie some pregnancy losses. [20]

When a woman presents with symptoms of pain or bleeding in early pregnancy, the main diagnostic possibilities are a currently viable intrauterine pregnancy, a failed (or failing) intrauterine pregnancy, and ectopic pregnancy. A pregnancy is diagnosed as nonviable if it meets one of the commonly accepted positivity criteria for that diagnosis, such as the embryonic size at which nonvisualization of a heartbeat on ultrasonography is diagnostic of miscarriage. [21]

The gestational sac is first seen at approximately 5 weeks of gestational age. [22] Any round or oval fluid collection in a woman with a positive pregnancy test most likely represents an intrauterine gestational sac [23]

The criteria most often used to diagnose pregnancy failure are the absence of cardiac activity by the time the embryo has reached a certain length (crown–rump length), the absence of a visible embryo by the time the gestational sac has grown to a certain size (mean sac diameter), and the absence of a visible embryo by a certain point in time.

Not all miscarriages ever develop a 7-mm embryo or a 25-mm gestational sac, so it is important to have other criteria for diagnosing pregnancy failure. The most useful of such criteria involve nonvisualization of an embryo by a certain point in time. [24] Nonvisualization of an embryo with a heartbeat by 6 weeks after the last menstrual period is suspicious for miscarriage. [25]

The objective of the present study was to evaluate awareness regarding miscarriages in the female population, age groups more prone to miscarriages, causes and factors that induce miscarriages, measures to prevent them and during which trimester miscarriages are common according to laymen population.

2. Methodology

It is a cross sectional survey based study comprising of N= 250 females belonging to age group 18-55 years. The study was carried out in various public and private hospitals, universities and in various residential areas of Karachi.

The study was conducted for 3 months. Data was collected from the participants by directly contacting with them and the answers were recorded as open ended.

Inclusion Criteria:

- Must be female of 18 years and above
- Must be fluent and able to understand English and Urdu language

Exclusion Criteria

- Female of less than 18 years.

Ethical Consideration

The participation of every participant was voluntarily. All the participants had complete right to withdraw from study without any prior notice.

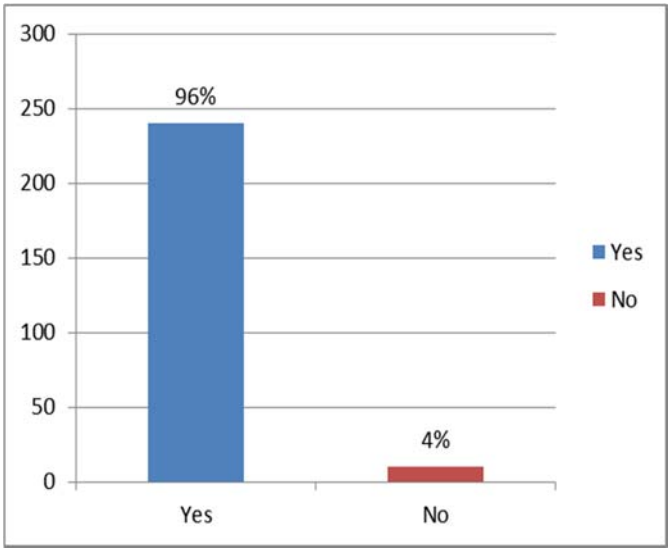
The data was analyzed by using statistical software SPSS version 19.0. The test which was used for the analysis of data was:

* One sample binomial test. P-value of 0.05 (5%) or less was considered as statistically significant.

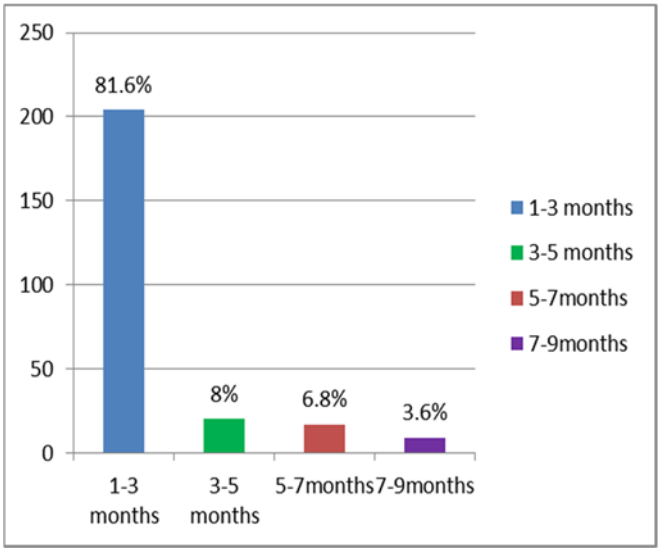
Table 1: Binomial Test

		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Awareness regarding miscarriage	Group 1	yes	240	.96	.50	.000
	Group 2	no	10	.04		
	Total		250	1.00		
Suffered Miscarriage	Group 1	yes	153	.61	.50	.000
	Group 2	no	97	.39		
	Total		250	1.00		
Signs of miscarriage	Group 1	yes	185	.74	.50	.000
	Group 2	no	65	.26		
	Total		250	1.00		
Early age marriages cause	Group 1	yes	102	.41	.50	.004
	Group 2	no	148	.59		
	Total		250	1.00		
No gap between previous deliveries	Group 1	yes	142	.57	.50	.037
	Group 2	no	108	.43		
	Total		250	1.00		
Stress cause miscarriage	Group 1	yes	227	.91	.50	.000
	Group 2	no	23	.09		
	Total		250	1.00		
Heavy workload can cause miscarriage	Group 1	yes	237	.95	.50	.000
	Group 2	no	13	.05		
	Total		250	1.00		
can miscarriage be prevented	Group 1	no	127	.51	.50	.850
	Group 2	yes	123	.49		
	Total		250	1.00		

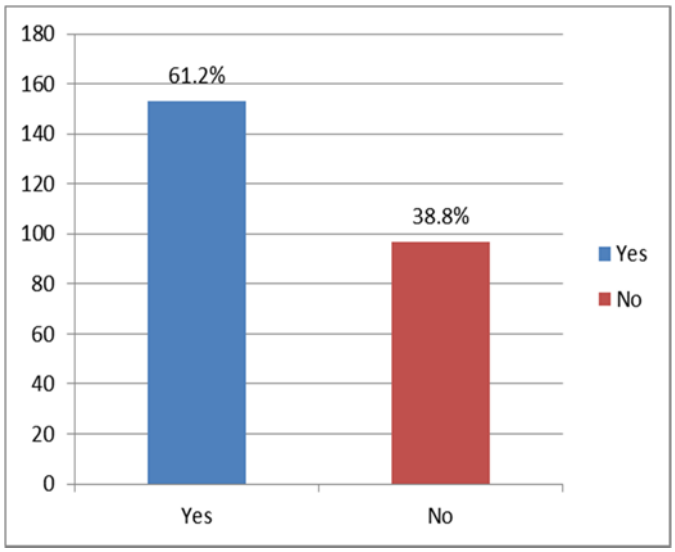
A value of $p< 0.05$ is considered significant, $p< 0.001$ as moderately significant and $p< 0.0001$ as highly significant.



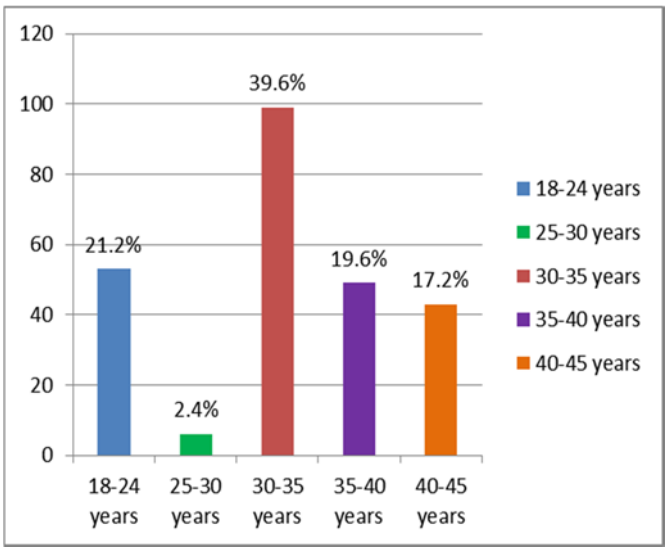
Graph 1: Awareness regarding Miscarriage in Female population of Karachi.



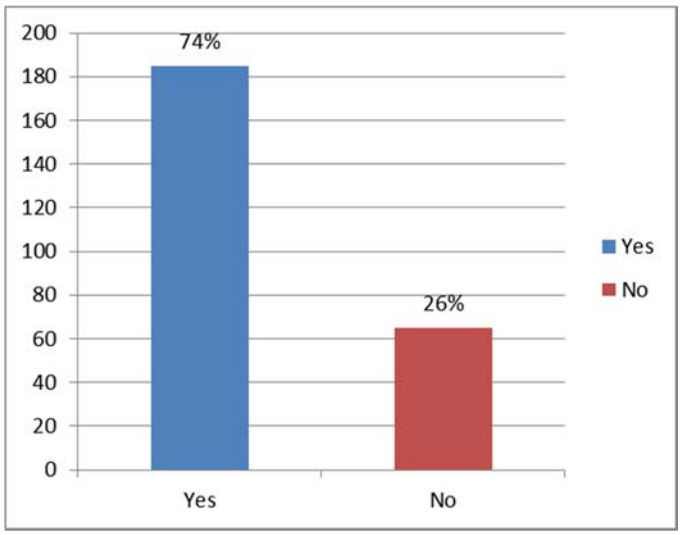
Graph 4: Months of Pregnancy during which Miscarriages common



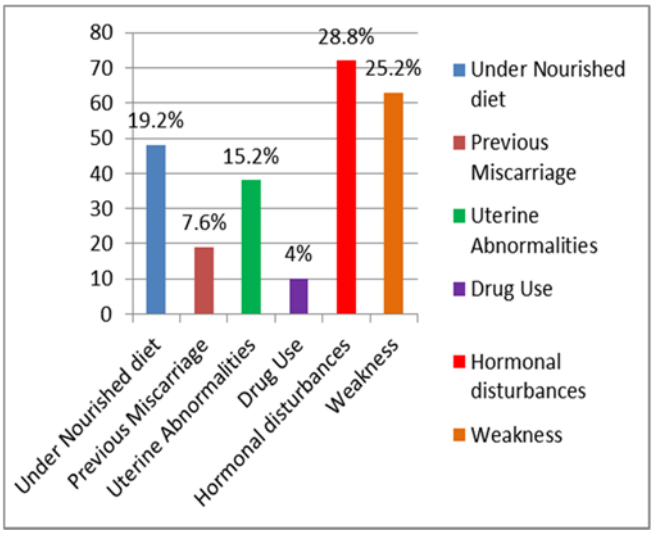
Graph 2: Percent of Female population suffered from Miscarriage



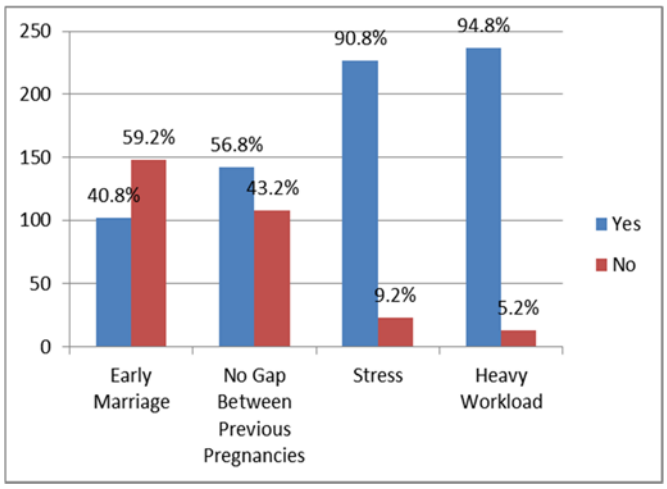
Graph 5: Age group at increased risk of Miscarriage



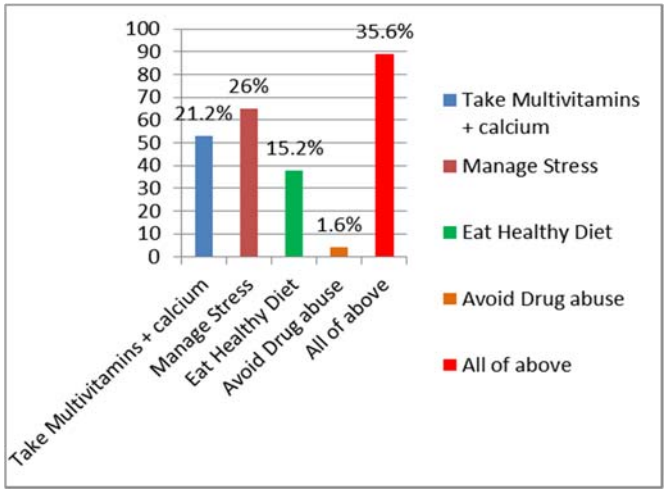
Graph 3: Awareness regarding Signs and Symptoms of Miscarriage



Graph 6: Causes of Miscarriage



Graph 7: Factors which can induce Miscarriage



Graph 8: Measures to prevent Miscarriages

3. Discussion

The term 'miscarriage' is applied to complications of early pregnancy. In 2005, the European Society of Human Reproduction and Embryology (ESHRE) introduced a revised terminology regarding early pregnancy events. [26]

The term clinical miscarriage is used when ultrasound examination or histological evidence has confirmed that an intrauterine pregnancy has existed. Clinical miscarriages may be subdivided into early clinical pregnancy losses (before gestational week 12) and late clinical pregnancy losses (gestational weeks 12 to 21). [27]

Clinical miscarriage is both a common and distressing complication of early pregnancy. In recent years, progress in the fields of cytogenetic and immunogenetics and a greater understanding of implantation and maternal-embryo interactions has offered new insights into the possible causes of this condition, and opened up new avenues for research into its prevention and treatment. [28]

Graph 1 shows that 96% of the female population of Karachi is aware of miscarriage. Implantation of a pregnancy is a complex immunological process; the field has progressed a lot in recent years and is termed as reproductive immunology. [29] Besides Medical personnel the term is also well known by laymen population.

61.2% of the Female Population said that they suffered from Miscarriage according to graph 2. However, it is estimated that a miscarriage occurs in 15-20% of recognized pregnancies, with 85% of spontaneous miscarriages occurring in the first trimester (weeks 1 to 12). [30]

Graph 3 shows that 74% Female population are aware about the signs and symptoms of miscarriage. The usual symptoms of miscarriage are vaginal bleeding and abdominal cramps. Pregnant women may then pass some tissue from the vagina, which often looks like a blood clot or clots. In many cases, the bleeding then gradually settles. [31]

More than 80% of miscarriages occur within the first three months of pregnancy. They are less likely to occur after 20 weeks' gestation; if they do, they are called late miscarriages.[32] Our results from graph 4 support the literature study in such a way that 81.6% miscarriages are common during 1-3 months of pregnancy.

Graph 5 shows women older than 35 years have a higher risk of miscarriage than younger women. According to literature search at age 35, you have about a 20% risk. At age 40, the risk increases to about 40%. And at age 45, it's about 80%. Paternal age also might play a role. [33] Our results show highly significant figure of 39.6% for the age group 30-35 years that are at increased risk of miscarriage. Second highest figure is 21.2% for the age group 18-24 years while least effected group is 25-30 years (2.4%).

For a pregnancy to succeed, the mother's body must supply the right amount of hormones and nutrients to the baby, and the fetus must develop correctly throughout the entire pregnancy. If either of these conditions are not met, then the pregnancy might end early. [34] Our results from graph 6 showed that the most common cause of Miscarriage is Hormonal Disturbances (28.8%) and second most common cause is weakness (25.2%). Nearly half of miscarriage cases have no apparent cause. [32]

Our results from graph 7 show that 94.8% population believes that Heavy Workload is the most common factor which induces Miscarriage while 90.8% of the population said that Stress is the most common factor for inducing miscarriage. According to the literature study, 76 per cent participants believed a stressful event could be a culprit of miscarriage. [35]

There are ways to lower the chances of miscarriage. In fact, a few simple lifestyle changes can make a world of difference: Avoiding smoking, drinking alcohol and using illicit drugs during pregnancy, eating a healthy diet, maintaining a healthy weight before and during pregnancy. [35] Prenatal vitamins can help support even the healthiest of diets to ensure that the mother and baby get all of the nutrients needed. [34] Graph 8 shows that majority of the population (35.9%) said that taking vitamins+ Calcium, managing stress, eating healthy diet and avoiding drug abuse all are the measures to prevent miscarriage.

Table 1 shows highly significant result (p<0.0001) that majority of female population are aware about the term miscarriage, have suffered from miscarriage, are aware about the signs of miscarriage, consider stress and heavy workload major cause of miscarriage. Table 1 shows moderately significant data (p<0.001) that early age marriages cause increase chances of miscarriage while significant data (p<0.001) showed that no gap between pregnancies can lead to miscarriage.

4. Conclusion

From our study we came to conclude that majority of female population are aware about the term miscarriage and have also suffered from it. Awareness regarding its symptoms was also there. However emphasis and awareness needs to be created among the population regarding early marriages, gap between pregnancies, proper nutrition during pregnancy and life style modifications and precautions during pregnancy to avoid miscarriages.

5. Acknowledgement

We would like to acknowledge Fatima Ahmed, Arooba Qayyum, Abeer Arif, Rabia Rasheed and Anum saleem in helping with data collection.

6. References

1. Practice Committee of the American Society for Reproductive Medicine. Evaluation and treatment of recurrent pregnancy loss: a committee opinion. FertilSteril. 2012; 98:1103-1111.
2. NHS Direct Wales Encyclopaedia. Miscarriage. 2010.
3. Wilcox AJ, Weinberg CR, O'Connor JF. Incidence of early loss of pregnancy. N Engl J Med. 1988; 319:189-194.
4. Creasy RK. Preventing preterm birth. N Engl J Med. 1991; 325:727-9.
5. Mangham LJ, Petrou S, Doyle LW, Draper ES, Marlow N. The cost of preterm birth throughout childhood in England and Wales. Pediatrics. 2009; 123:312-27.
6. Caroline Overton, consultant gynaecologist St Michael's University Hospital, Bristol, UK www.caroline-overton.co.uk/clinics-times. Retrieved 23/11/2015.
7. Cox AJ, Weinberg CR, O'Connor JF. Incidence of early loss of pregnancy. N Engl J Med. 1988; 319:189-194
8. Kecia Gaither. The March of Dimes Medem National Institutes of Health. American Pregnancy Organization, 2014.
9. Nybo Anderson A. Maternal age and fetal loss: population based register linkage study. BMJ. 2000; 320:1708-12.
10. Hassold TJA cytogenetic study of repeated spontaneous abortions. Am J Hum Genet. 1980; 32:723-730.
11. Sierra S, Stephenson M. Genetics of recurrent pregnancy loss. Semin Reprod Med. 2006; 24:17-24.
12. Funkhouser J, Jooss T, Manuel B, Matsuura J. A cytogenetic study of 1000 spontaneous abortions. Ann Hum Genet. 1980; 44:151-178.
13. Simpson JL. Incidence and timing of pregnancy losses: relevance to evaluating safety of early prenatal diagnosis. Am J Med Genet. 1990; 35:165-173.
14. Boue J, Bou A, Lazar P. Retrospective and prospective epidemiological studies of 1500 karyotyped spontaneous human abortions. Teratology. 1975; 12:11-26.
15. Kajii T, Ferrier A, Niikawa N, Takahara H, Ohama K, Avirachan S. Anatomic and chromosomal anomalies in 639 spontaneous abortuses. Hum Genet. 1980; 55:87-98.
16. Bernardi LA, Plunkett BA, Stephenson MD. Is chromosome testing of the second miscarriage cost saving? A decision analysis of selective versus universal recurrent pregnancy loss evaluation. FertilSteril. 2012; 98: 156-161.
17. Foyouzi N, Cedars MI, Huddleston HG. Cost-effectiveness of cytogenetic evaluation of products of conception in the patient with a second pregnancy loss. FertilSteril. 2012; 98:151-155.
18. Rai R, Regan L. Recurrent miscarriage. Lancet 2006; 368:601-611.
19. Clark P, Greer IA, Walker I. Interaction of the protein C/protein S anticoagulant system, the endothelium and pregnancy. Blood Rev. 1999; 13(3):127-146.
20. Creanga AA, Shapiro-Mendoza CK, Bish CL, Zane S, Berg CJ, Callaghan WM. Trends in ectopic pregnancy mortality in the United States, 1980-2007. ObstetGynecol. 2011; 117:837-843.
21. Bree RL, Edwards M, Bohm-Velez M, Beyler S, Roberts J, Mendelson EB. Transvaginal sonography in the evaluation of normal early pregnancy: correlation with hCG level. AJR Am J Roentgenol. 1989; 153:75-79.
22. Goldstein I, Zimmer EA, Tamir A, Peretz BA, Paldi E. Evaluation of normal gestational sac growth: appearance of embryonic heartbeat and embryo body movements using the transvaginal technique. ObstetGynecol, 1991; 77:885-888.
23. Benson CB, Doubilet PM, Peters HE, Frates MC. Intrauterine fluid with ectopic pregnancy: a reappraisal. J Ultrasound Med. 2013; 32:389-393.
24. Barnhart K, van Mello NM, Bourne T. Pregnancy of unknown location: A consensus statement of nomenclature, definitions, and outcome. FertilSteril 2011; 95:857-866.
25. Abdallah Y, Daemen A, Guha S. Gestational sac and embryonic growth are not useful as criteria to define miscarriage: a multicenter study. Ultrasound ObstetGynecol, 2011; 38:503-509.
26. Farquharson RG, Jauniaux E, Exalto N. Updated and revised nomenclature for description of early pregnancy events. Hum Reprod. 2005; 20:3008-3011.
27. Jauniaux E, Farquharson RG, Christiansen OB, Exalto N. Evidence-based guidelines for the investigation and medical treatment of recurrent miscarriage. Hum Reprod, 2006; 21:2216-2222.
28. Practice Committee of the American Society for Reproductive Medicine. Evaluation and treatment of recurrent pregnancy loss: a committee opinion. FertilSteril. 2012; 98:1103-1111.
29. Patient.co.uk. Miscarriage (spontaneous abortion). http://www.patient.co.uk/doctor/miscarriage-spontaneous-abortion, 2013. (Accessed 9/12/ 2015).
30. Bhattacharya S, Smith N. Pregnancy following miscarriage: what is the optimum inter pregnancy interval? Womens Health (LondEngl). 2011; 7(2):139-41.
31. Kecia Gaither. Health & Pregnancy. The March of Dimes Medem. National Institutes of Health. American Pregnancy Organization, 2014.
32. Lentz GM. Comprehensive Gynecology. 6th ed. Philadelphia, Pa Mosby Elsevier, 2012.
33. Kristeen Moore. Miscarriage. 7/11/ 2012.
34. Joseph Nordqvis. What is a miscarriage? What causes a miscarriage? Medical News Today. Last updated: 27/11/2015.http://www.medicalnewstoday.com/articles/262941.php
35. Kunal Guha. Five factors leading to miscarriage. The Times of India, 13/05/ 2015.