



**SMU**  
Sikkim Manipal University



**SMU Medical Journal**



ISSN : 2349 – 1604 (Volume – 3, No. 1, January 2016) Research article

Indexed in SIS (USA), ASI (Germany), I2OR & i-Scholar (India) and SJIF (Morocco)  
databases

Impact Factor: 3.835 (SJIF)

## **A Study of Socio-Economic Risk Factors for Missed Abortion**

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Manuscript received : 07.11.2015  
Manuscript accepted: 27.10.2015

### **Abstract**

Missed abortions represent a significant gynecological emergency workload. Nearly 20% of all confirmed pregnancies end in missed abortion. Clinicians still do not recognize risk factors for miscarriage. Early identification of the at risk women could help decrease this incidence. The investigators did a hospital based analytical study to investigate the risk factors for these abortions. Women with pregnancy which had ended in first trimester missed abortion (<12 weeks of gestation) were compared with normal pregnant women. Socio-demographic profile was assessed and data analyzed to evaluate risk factors difference between the two groups which showed that women with higher age and under 20 years age, poor literacy, lower educational status and with lower income had an elevated risk of missed abortion. Gravidity and

interpregnancy interval showed no effect in the study. The socially patterned risk indicated that a proportion of missed abortions may be preventable and that factors related to social position, probably of the environmental and behavioural type, may affect missed abortion risk.

*Key words:* Missed abortion,high risk,socio-economic status,literacy.

## **Introduction**

Abortion is the most common complication of early pregnancy.The incidence of missed abortion in clinically recognized pregnancies up to 20 gestational weeks is 8 to 20 percent [1] but clinicians still do not recognize risk factors for miscarriage.Early identification of the at risk women could help decrease this incidence.

## **Objective**

The aim of the research was to investigate the risk factors for missed abortions by assessing and comparing the profile of women who experienced missed abortion (cases) with those who experienced normal pregnancy (control).

## **Materials and Methods**

**Research Approach :** Hospital Based Research

**Research Design :** Analytical Research.

**Symbolic Presentation of Research Design:**

### **Variable 1**

} — description of variables — analysis and interpretation of result —  
Hypothesis formation

### **Variable 2**

**Setting :** Department of Obst. & Gynae.,S.M.S. Medical College & Hospital,Jaipur(Rajasthan)

**Population:** pregnant women attending the outpatient department

**Sample:**400 pregnant

**Sampling technique** – Convenient sampling technique

**Sampling criteria:** women 200 pregnant women with pregnancy which had ended in first trimester miscarriage (Variable 1,<12 weeks of gestation) and 200 normal pregnant women (Variable 2 ,control group) were studied.

### **Data collection tools and technique**

#### **Data collection procedure**

Formal permission was taken from the necessary authorities.

Women were informed about the purpose of the study and their informed written consent were taken.

Data collected for the study from 1<sup>st</sup> January to 30<sup>th</sup> June, 2015

**Structured proforma** : was filled by the investigator.

#### **Variables studied:**

Age

Demographic data,

Literacy level,

Socio-Economic class {Revised modified B G Prasad socioeconomic classification scale,Jan 2014} Gravidity

Interpregnancy interval

Gestational age

**Data analysis:**.Significance of difference in proportion in various variables of missed abortion in both the group was inferred by Chi-square test and students T Test.

### **Results And Discussion**

Most of the women in both the groups were in 20-29 years age group. Significant

difference was observed according to age groups.

**Table 1.Relation Between Age And Risk Of Missed Abortion**

Age group	Cases		Control		Total	
	No.	%	No.	%	NO	%
<20	48	24	24	12	18	36
20 to 24	108	54	80	40	47	94
25 to 28	28	14	64	32	23	46
29 to 34	12	6	32	16	11	22
>35	4	2	0	0	1	2
Total	200	100	200	100	400	100

Chi-square = 9.837 with 4 degrees of freedom; P = 0.043 Sig

The table 1 shows that the mean age among cases was 24.7±4.03 yrs which was significantly higher than that of control group,23.10±2.8 years (p=0.023).There were significantly high proportion of women in < 20 years age group in cases than controls.(P=0.03)

**Table 2.Relation Between Literacy Level And Risk Of Missed Abortion**

Literacy Status	CASES		CONTROL		TOTAL	
	N	(%)	N	(%)	N	(%)
Illiterate	52	26	16	8	68	17
Primary	96	48	60	30	156	39
Secondary	44	22	64	32	108	27
Graduate	8	4	60	24	68	17
Total	200	100	200	100	400	100

Chi-square = 17.709 with 3 degrees of freedom; P < 0.001 Sig

Data in table 2 shows that poor literacy had a significant bearing on the outcome of pregnancy. Proportion of women with education secondary or higher was more in control group than the missed abortion one. ( $p < 0.001$ ).

**Table 3. Relation Between Socio-Economic Class And Risk Of Missed Abortion**

Socio-Economic Class	CASES		CONTROL		TOTAL	
	N	(%)	N	(%)	N	(%)
Upper	-	-	8	4	8	2
Upper Middle	-	-	48	24	48	12
Middle	156	78	96	48	252	63
Lower Middle	32	16	48	24	80	20
Lower	12	6	0	0	12	3

( $p < 0.001$ )

In the table 3, significant difference was observed according to socioeconomic status of the family. There were more women with missed abortion from SES middle or less as compared to control group. ( $p < 0.001$ ). Poor economic condition perhaps directly has an affect on the diet, sleep, stress level and physical activity level of the pregnant woman, The data in table 4 shows the majority (59%) of women in the study had gestational age six to eight weeks. Significantly lower mean gestational age was observed in cases than control group. There was no significant difference observed according to gravidity and time since last pregnancy .

Arck et al [2] and Maconochie N [3] also in their study found that the risk of miscarriage was significantly increased in women at higher age (>33 years). According to Nybo [4] the risk of a spontaneous abortion was 8.9% in women aged 20-24 years and 74.7% in those aged 45 years or more. Wilcox et al [5] and Wang et al [6] both also reported a decreasing frequency with increasing gestational age and lower among women who have previously had a child

(5 percent).Coste J [7] stressed the importance of four risk factors for fetal loss: maternal age, number of prior spontaneous abortions,ethnic origin and psychological problems at the time of conception .

**Table 4.Relation Between Gestational Age And Risk Of Missed Abortion**

Gestational Age In weeks	CASES		CONTROL		TOTAL	
	N	(%)	N	(%)	N	(%)
<6	20	10	12	6	32	8
6 to 8	120	60	116	58	236	59
8 to 10	36	18	52	26	88	22
>10	24	12	20	10	44	11
	Mean±SD :7.6 ±1.7 wks		Mean±SD:7.94±1.8 wks		Mean±SD:7.8±1.7 wks	

Osborn et al [8] found the risk to be increased for women aged 35-39 (odds ratio = 1.45) and women over age 40 (odds ratio = 3.10) in comparison with women under age 20 years,. The odds ratio was almost 2 for women who have been pregnant two or more times previously. Unmarried women have an increased risk (odds ratio = 1.33), but no important effect of education was observed.

Norsker et al [9] found that educational level and income were inversely associated with the risk of spontaneous abortion.The findings indicate that factors related to social position, probably of the environmental and behavioural type, may affect spontaneous abortion risk. The s

study highlights the need for studies addressing such exposures in order to prevent abortions.

In the study of Jibril et al [10] ,51.6% women with missed abortion were aged between 31 to 40 years and 40.5% were gravid 3 or 4.

### **Formulation of hypothesis**

**H1-** There is significant relationship between age and missed abortion at 0.05 level of significance.

**H2** There is significant relationship between socio-economic status and missed abortion at 0.05 level of significance.

**H3** There is significant relationship between literacy level and missed abortion at 0.05 level of significance.

**H4** There is significant relationship between gestational age and missed abortion at 0.05 level of significance.

**H5** There is no significant relationship between gravidity and time since last pregnancy . and missed abortion at 0.05 level of significance.

### **Conclusion**

Higher age and under 18 years maternal age were independently associated with increased risk. We also found an association with educational level and socio-economic circumstances. The analytic methods suggest how age and other factors can be simultaneously examined for associations.

### **Recommendations**

Careful evaluation of the pregnant women should be done for these risk factor at the 1<sup>st</sup> antenatal visit, to recognize pregnant women who require extra monitoring and who might benefit from therapeutic interventions such as progestogen supplementation, especially during the first weeks of pregnancy, so the incidence of missed abortion could be lowered.

### **Limitations of The Study**

The present study is based upon a small population. To study abortions is difficult since a great part of spontaneous abortions happen very early in the pregnancy period, many even before the women themselves know that they are pregnant.

### **References**

- [1] Regan L and Rai R (2000) Epidemiology and the medical causes of miscarriage. *Baillieres Best Pract Res Clin Obstet Gynaecol.* 14, 839.
- [2] Arck PC, Rucke M., Rose M., Szekeres-Bartho J., Douglas AJ, Pritsch M., Blois SM, Pincus MK, Bärenstrauch N., Dudenhausen JW, Nakamura K., Sheps S and, Klapp BF (2008) Early risk factors for miscarriage: a prospective cohort study in pregnant women. *Reprod Biomed Online.* 17(1), 101-13.
- [3] Maconochie N associated with increased risk: high maternal age (2007) Doyle P, Prior S, Simmons R. Risk factors for first trimester miscarriage--results from a UK-population-based case-control study. *BJOG.* 114, 170.
- [4] Nybo Andersen AM, Wohlfahrt J, Christens P, et al. (2000) Maternal age and fetal loss: population based register linkage study. *BMJ.* 320, 1708.
- [5] Wilcox AJ, Weinberg CR, O'Connor JF, et al. (1988) Incidence of early loss of pregnancy. *N Engl J Med.* 319, 189.
- [6] Wang X., Chen C., Wang L., et al. (2003) Conception, early pregnancy loss, and time to clinical pregnancy: a population-based prospective study. *Fertil Steril.* 79, 577.
- [7] Coste J., Job-Spira N and Fernandez H (1991) Risk factors for spontaneous abortion: a case-control study in France. *Hum Reprod.* 6, 1332.
- [8] Osborn JF, Cattaruzza MS and Spinelli A (2000) Risk of spontaneous abortion in Italy, 1978-1995, and the effect of maternal age, gravidity, marital status, and education. *Am J Epidemiol.* 151:98.
- [9] Norsker FN, Espenhain L, Rogvi S, et al. (2012) Socioeconomic position and the risk of spontaneous abortion: a study within the Danish National Birth Cohort. *BMJ Open* 2012;2:e001077. doi:10.1136/bmjopen-2012-001077.



[10] Jibril NU, Kayode OS, Umar AG, Abubakar IA and Ayoade IM (2014) Blessing NJ. Spontaneous abortion among women admitted into gynaecology wards of three selected hospitals in Maiduguri, Nigeria International Journal of Nursing and Midwifery 2014; Vol.6(2):24-31.

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