



CLINICO EPIDEMIOLOGICAL STUDY ON RECURRENT SPONTANEOUS ABORTION- A HOSPITAL BASED STUDY AT A TERTIARY CARE HOSPITAL

Community Medicine

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ABSTRACT

Background: Recurrent spontaneous abortions (RSA) is a common complication of pregnancy. It is two or more natural terminations of pregnancy before fetal viability. Causes in 50% cases remain unknown. This study demonstrates association of RSA with age, number of abortions, socioeconomic status (SES), etc.

Methods: This study was conducted at Gauhati Medical College & Hospital (GMCH), Guwahati, Assam. It is a hospital based cross-sectional descriptive study; a total number of 269 newly diagnosed cases of RSA were procured from the Out Patient Department (OPD) of Obstetrics and Gynaecology (O&G) of GMCH, over a period of 3 years.

Results: 1) secondary aborters had the highest mean age. 2) Increasing maternal age did not increase risk of RSA. 3) number of previous abortions was inversely proportional to the incidence of RSA. 4) RSA in rural was higher than in urban women. 5) high SES had decreased the risk of RSA.

Conclusion: SES, number of previous abortions can attribute inversely to the risk of RSA, while higher age of the women had no consistent impact on the risk of RSA in the study population.

KEYWORDS

Recurrent spontaneous abortion, socio-economic status, maternal health

INTRODUCTION

Recurrent Spontaneous abortion (RSA) is a common negative outcome of pregnancy. Its cause in about 50% cases remain unexplained. This study was carried out by excluding cases with known causes of RSA to explore epidemiologic factors like age, socioeconomic status (SES), rural/urban, number of abortions, etc. in order to provide reference for policy makers to improve maternal health.

MATERIALS AND METHODS

This study was conducted at GMCH, Guwahati, Assam, India. Data were procured from the OPD of O&G, GMCH.

Research design

To fulfil the objectives of the study, a hospital based cross-sectional descriptive study was used for collection and study of data.

Study setting

The present study has been undertaken in the OPD of O&G, GMCH, and Guwahati, Assam.

Study period

October 2016-19

Study population

The study population comprise of 269 numbers of newly diagnosed cases of RSA attending the Department of O&G of GMCH during the period October, 2016 to 19. Before undergoing the study clearance from institutional ethical committee (IEC) was obtained.

The sample

Sample size was 269.

Selection of cases

The 269 RSA cases were initially selected purely on clinical ground and then with the following inclusion and exclusion criteria.

1. INCLUSION CRITERIA

- History of ≥ 2 number of RSA

2. EXCLUSION CRITERIA

- Obesity (BMI more than 30)
- Factor laden mutation/ thrombophilias
- Thyroid Disorders/ hormonal disorders
- Diabetes Mellitus
- Antiphospholipid IgG antibodies/ lupus anticoagulants
- Uterine anatomic defects
- Old diagnosed cases that are under treatment.

Protocol

The proforma was prepared based on universal standard protocols for evaluation of RSA which contains separate history taking, examination and investigation parts. Then diagnosis was made based on all investigative laboratory reports.

METHODS

Details of the patients were recorded in the manner in order of age, religion, caste, occupation, address, hospital number and registration number for identification and documentation. When patients were first examined a detailed history was taken and thorough clinical examination was done. Then they underwent a battery of investigations to confirm diagnosis. For SES of the patients Kuppaswamy modified criteria were used. All the patient's history, clinical examination, investigation findings, and diagnostic data were recorded in a pre-designed and pre-tested proforma. The women were categorized according to age groups (18-25yrs, 26-30years, 31-35years & 36-40years, 41years and above), according as number of previous abortions (2, 3, 4, more than 5), and primary/secondary/tertiary aborter state.

Primary aborters were- women who never had a previous viable infant.^[1] Secondary aborters were-women who had previously delivered a pregnancy beyond 20 weeks gestational weeks and then suffered pregnancy losses.^[1] Tertiary aborters were-women with multiple miscarriages interspersed with normal pregnancies.^[1]

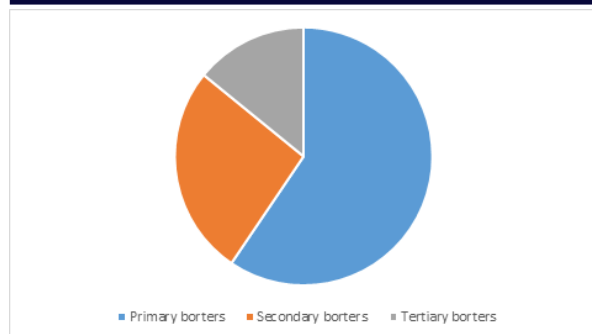
IEC clearance was taken for the study. Consent was taken from each participant.

RESULTS AND OBSERVATIONS

1. Distribution of women according to primary/secondary/tertiary aborter states and their mean ages and prevalence rate in percentage. N=269

Table1-The Primary/Secondary/Tertiary aborters and their mean age $\pm$ SD, prevalence (in %)

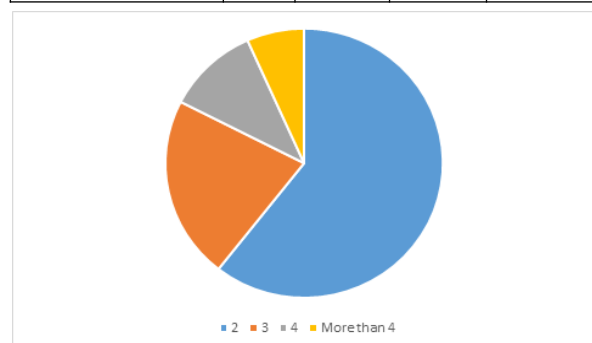
	No of women	Minimum age	Maximum age	Mean age $\pm$ SD	percentage (%)
Primary aborters	160	21	38	29.5 $\pm$ 12.02	59
Secondary aborters	71	22	45	33.5 $\pm$ 16.26	26
Tertiary aborters	38	25	36	30.5 $\pm$ 07.77	14

**Table2- The age groups and the number of women and percentages.**

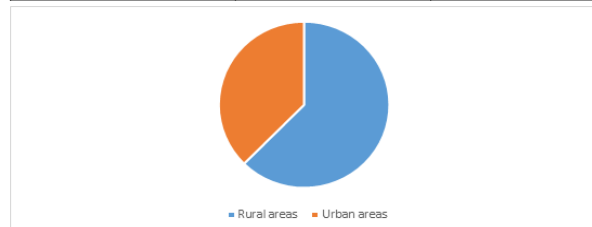
Age Group	Number of women	Percentage (%)
18-25 years	39	14.49
26-30 years	98	36.43
31-35 years	59	21.93
36-40 years	49	18.21
41 years and above	24	8.92

Table3- The Number of Previous abortions and association with age.

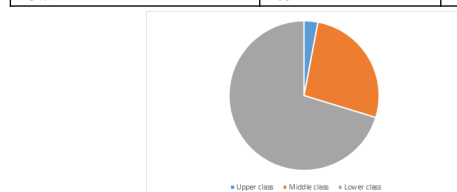
No. of previous abortions	No. of women	Minimum age	Maximum age	Mean age $\pm$ SD
2	163	20	43	31.5 $\pm$ 16.26
3	59	25	38	31.5 $\pm$ 9.12
4	29	33	45	39 $\pm$ 8.48
More than 4	18	27	37	32 $\pm$ 7.07

**Table 4-Distribution of women by rural/urban Area of Residence:**

Area of Residence	No. of females	%
Rural areas	168	62.45
Urban areas	101	37.55
Total	269	100

**Table 6-Socio Economic Status:**

Socio Economic Status	No. of females	%
Upper class	8	2.97
Middle class	72	26.77
Lower class	189	70.26
Total	269	100

**DISCUSSION****1. Distribution of women according to primary/secondary/tertiary aborter state, mean ages and prevalence rate**

Most of the patients of our study were belonging to the group of primary aborters with the mean age of 29.5 ± 12.02 years and a prevalence rate of 59%. Maximum mean age 33.5 ± 16.26 years was seen in the group of secondary aborters which had a prevalence of 26%. Tertiary aborters were least prevalent at 14% with the mean age of 30.5 ± 07.77 years.

Miscarriage risk rate increased from 1.5 after one miscarriage to 2.2 after two and 4.0 after three.^[2]

Published literature could not be found of any study where the RSA women were categorized discretely as primary, secondary and tertiary aborters where their mean ages and prevalence rates were also correlated. This study can possibly be one of its kind with this precision or to this extent.

2. Distribution of women among different Age groups.

In the present study, 98 (36.43%) RSA patients belonged to the age group 26-30 years; 59 (21.93%) number of RSA patients belonged to the age group 31-35 years; 49 (18.21%) number of RSA patients belonged to the age group 36-40 years; 39 (14.49 %) RSA patients belonged to the age group 18-25years, and 24 of them (8.92%) belonged to the age group 41 years and above.

From the observed data., increasing age of the women cannot be attributed to the increased risk of RSA in this study. One possible explanation of this nonconforming result with global findings could be that higher turning rate of women in the age group 25-30 years was incidental during the study period. Indignant younger women made visits to the hospital to find causal inference from the doctors. Complacent older age groups aware about their condition had fewer footfalls at the OPD.

Miscarriage becomes recurrent in 2–3% of couples.^[3] The risk of fetal loss rises steeply after the age of 35 years,^[4] from 9.5% at 20–24 years to 76% at 45 years and older. In clinical practice, the chances of a successful pregnancy in women ≥ 40 years are poor, when risks of miscarriage increase.^[5]

Gestational age at the time of pregnancy loss should be considered, since recurrent miscarriage typically occurs at a similar gestational age in consecutive pregnancies.^[6]

In a study conducted by Maria C Magnus and others in 2019, the risk of miscarriage was lowest among women aged 25-29 (9.8%), with the absolute lowest risk at age 27 (9.5%), and the highest risk at age 45 and over (53.6%). The youngest mothers (<20 years) had a risk of 15.8%.^[7]

3 Distribution of women according to the number of previous abortions

The risk of miscarriage increases as much as fourfold after three consecutive previous miscarriages, implying considerable variability in risk between couples.^[7]

In the present study it was found that the number of patients with history of two RSA was highest at 163 with a mean age of 31.5 ± 16.26 years; 59 cases with a history of three RSA with the mean age of 31.5 ± 9.12 years; 29 cases with a history of four RSA with the mean age in years 39 ± 8.48 ; 18 cases of four previous RSA with the mean age in years at 32 ± 7.07 only.

From the observed data, it appears that there is a significant decrease in the prevalence rate of RSA cases with increase in the count of previous number of RSA. Also mean age of the subgroups were found to increase with the increase in the number of previous abortions from 18 years to 40 years, but decreased when the number of abortions was beyond four.

4 Distribution of women according to rural/urban residence

It may be observed in this study that rural areas of residence had a higher number 168 (62.45%) of cases of RSA compared to the urban where the number stood at 101 (37.55%).

The incidence of RSA is significantly higher in rural area than urban (p-value = <0.0001).

This suggests that women in rural setups have to face more reproductive health challenges in comparison to their urban counterparts. This can also point to skewed distribution of healthcare workforce in rural area.

In 2017, Danni Zheng, Chunyan Li, Taiwen Wu, et al.^[8] reported that rural women were at 2.41 times increased risk for RSA compared to urban women.

Thus, findings of the present study are comparable with this international study.

6 Distribution of women according to their SES

It may be observed from this study that cases from lower SES were highest at 189 (70.26%); upper SES were least in number 8 (2.97%); middle SES stood at 72 (26.77%)

p-value = < 0.0001

RSA is significantly low in Upper class and significantly high in lower class (p-value = < 0.0001).

According to a study in 2006, by Price SK,^[9] it was reported that a history of RSA was significantly related to household income.

Therefore, in countries like India where greater distinction in living conditions exist between the SES due attention be given to low SES women to improve their quality of living, education levels, the nutritional status that influences their reproductive health.

CONCLUSIONS

- 1) secondary aborters had the highest mean age among the studied population.
- 2) age association with RSA was inconsistent.
- 3) number of previous abortions was inversely proportional to the incidence of RSA
- 4) the risk of RSA in rural was higher than urban
- 5) women with high SES had a decreased risk of RSA.
- 6) rural and low SES need more care and support on health promotion strategies.

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