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Research Article

**A COHORT SERIES TO DOCUMENT ANY POSSIBLE  
CORRELATION BETWEEN MISCARRIAGES DURING FIRST  
TRIMESTER WITH AN ONSET OF PRETERM & PPRM  
DELIVERIES**<sup>1</sup>Muhammad Kashif Shabbir, <sup>2</sup>Sarah Anwar, <sup>3</sup>Kiran Fatima<sup>1</sup>Latin American School of Medicine Havana Cuba<sup>2</sup>Akhtar Saeed Medical and Dental College, Lahore<sup>3</sup>CMH Lahore Medical and Dental College**Abstract:**

**Objective:** In this research, we aimed to document the correlation of threatened miscarriage during the first trimester with Preterm and PPRM deliveries.

**Methodology:** We completed this cohort series in Gynecology and Obstetrics Department of Jinnah Hospital, Lahore in the timeframe of February to December 2017. This research included a total of one hundred patients equally divided into two groups having fifty in each group. Group – I and Group – II respectively included the first trimester, bleeding and booked women before the completion of fourteen gestational weeks. The gestational age was estimated on the basis of fetal heart activity and scan; whereas, Group – II all booked, without bleeding and first trimester women having fetal heart activity. The age of the women included in Group – II was in the bracket of 20 years to 35 years having a maximum parity of five. We did not include any female with a twin pregnancy, distorting of uterine cavity large leiomyomata, congenital uterine anomaly, chronic diabetes history or hypertension, gestational diabetes, vaginal spotting, open cervix outcomes, polyhydramnios, preterm labour history and PPRM. All the females were regularly followed from the first day of the appointment to delivery. We also examined the demographic data including gestational and maternal age. First-trimester miscarriage refers to a miscarriage before the completion of fourteen gestational weeks. Preterm labour refers to a birth before the completion of thirty-seven gestational weeks. PPRM refers to a fetal membranes rupture before the completion of thirty-seven gestational weeks. We followed the patients till delivery in both the groups for an absence or presence of Preterm and PPRM delivery.

**Results:** We compared the association of threatened miscarriage during the first trimester with PPRM and preterm deliveries in Group – I & II. Group – I shows 26 females (52%); whereas, Group – II shows 9 females (18%) with a relative risk of (2.889) that is (> 2). We also compared the onset of PPRM deliveries association with threatened miscarriage during the first trimester. There was a significant variation between the outcomes of both groups as Group – I had 9 cases (18%) and Group – II had 6 cases (12%) with a relative risk factor of (2.25).

**Conclusion:** The correlation of threatened miscarriage during the first trimester with Preterm and PPRM deliveries was higher than the patients not in the first trimester.

**Keywords:** Trimester, Miscarriage, Preterm, PPRM, Relative Risk, Bleeding, Parity and Delivery.

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**INTRODUCTION:**

The first trimester is full of pregnancy-associated complications among expecting females with repeated complaints of vaginal pain and bleeding [1]. Threatened miscarriage refers to vaginal bleeding which occurs before twenty-four hours of the gestation and it is common among twenty percent of the pregnancies especially in the UK [2, 3]. A presumptive threatened miscarriage diagnosis basis on early pregnancy vaginal bleeding history along with the closing of the cervix. It is confirmed through an intrauterine gestational ultrasonography with fetal cardiac activity presence [4]. It is also one of the prevalent hypotheses that the first trimester includes adverse outcomes of pregnancy such as preeclampsia, preterm pre-labour membranes rupture, preterm delivery, restriction of intrauterine growth and placental abruption [5]. Whereas, the death rate in the first trimester is very rare [6]. Generally, in the presence of vaginal bleeding, the presence of fetus observed through USG propose that (95% – 98%) pregnancies still survive beyond 20<sup>th</sup> gestational week [2].

Antenatal care and clinical interventions are easy to plan in the presence of awareness and knowledge about ongoing pregnancies outcomes after the onset of bleeding during the first trimester bleeding. Threatened miscarriage and vaginal bleeding are mostly reported in our hospital. In the absence of relevant literature on the onset of threatened miscarriage, we aimed to document the correlation of threatened miscarriage during the first trimester with Preterm and PPRM deliveries.

**METHODOLOGY:**

We completed this cohort series in Gynecology and Obstetrics Department of Jinnah Hospital, Lahore in the timeframe of February to December 2017. This research included a total of one hundred patients equally divided into two groups having fifty in each group. Group – I and Group – II respectively included the first trimester, bleeding and booked women before the completion of fourteen gestational weeks. The gestational age was estimated on the basis of fetal heart activity and scan; whereas, Group – II all booked, without bleeding and first trimester women having fetal heart activity. The age of the

women included in Group – II was in the bracket of 20 years to 35 years having a maximum parity of five. We did not include any female with a twin pregnancy, distorting of uterine cavity large leiomyomata, congenital uterine anomaly, chronic diabetes history or hypertension, gestational diabetes, vaginal spotting, open cervix outcomes, polyhydramnios, preterm labour history and PPRM. All the females were regularly followed from the first day of the appointment to delivery. We also examined the demographic data including gestational and maternal age. First-trimester miscarriage refers to a miscarriage before the completion of fourteen gestational weeks. Preterm labour refers to a birth before the completion of thirty-seven gestational weeks. PPRM refers to a fetal membranes rupture before the completion of thirty-seven gestational weeks. We followed the patients till delivery in both the groups for an absence or presence of Preterm and PPRM delivery.

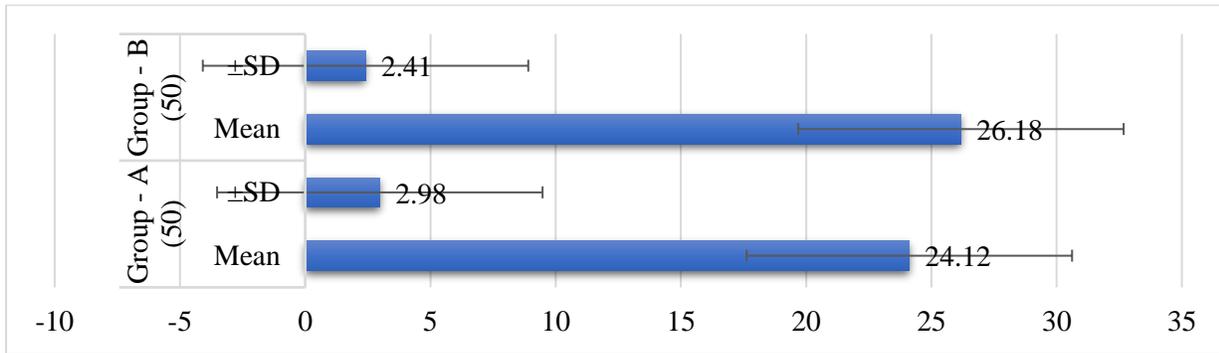
We also calculated the factor of relative risk by taking a significant ( $RR > 2$ ) to see an association between miscarriage, preterm and PPRM deliveries. Statistical analysis was done through SPSS software.

**RESULTS:**

The age bracket of 20 – 30 years were respectively found in Group – I and Group – II among 29 patients (58%); whereas, Group – II had 33 patients (66%). The age bracket of 31 – 35 years were respectively found in Group – I and II among 21 patients (42%) and 17 patients (34%). The mean age of Group – I and II were respectively reported as ( $24.12 \pm 2.98$ ) years and ( $26.18 \pm 2.41$ ) years as shown in Table – I. We compared the association of threatened miscarriage during the first trimester with PPRM and preterm deliveries in Group – I & II. Group – I shows 26 females (52%); whereas, Group – II shows 9 females (18%) with a relative risk of (2.889) that is ( $> 2$ ). We also compared the onset of PPRM deliveries association with threatened miscarriage during the first trimester. There was a significant variation between the outcomes of both groups as Group – I had 9 cases (18%) and Group – II had 6 cases (12%) with a relative risk factor of (2.25) as shown in Table – II.

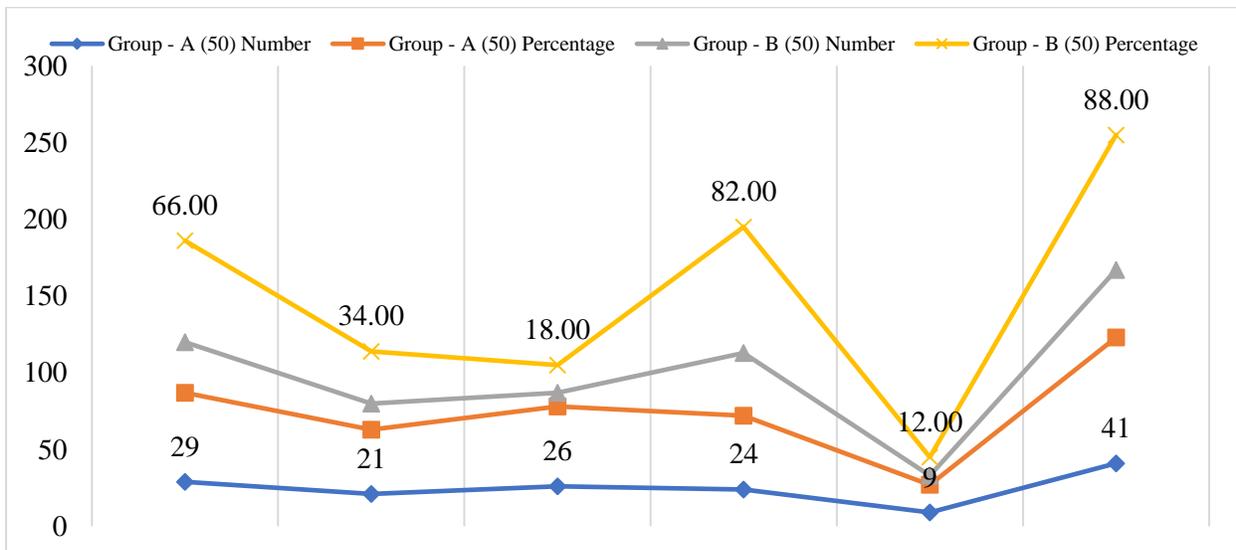
**Table – I:** Group Wise Mean  $\pm$  SD (100)

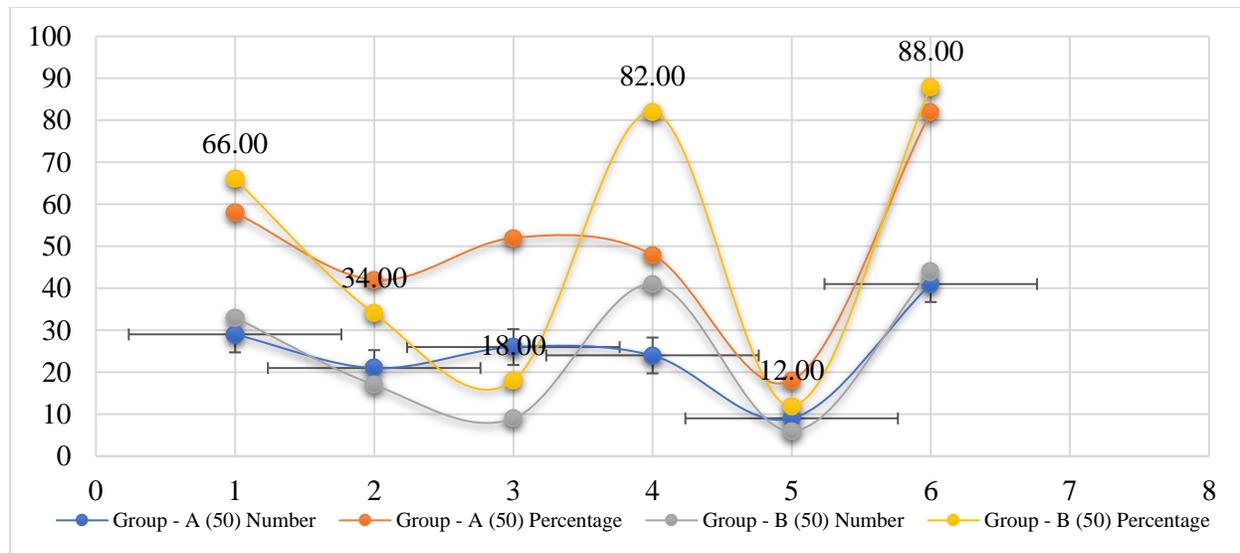
Group – I (50)		Group – II (50)	
Mean	$\pm$ SD	Mean	$\pm$ SD
24.12	2.98	26.18	2.41



**Table – II:** Distribution of Age, Preterm Delivery and PPRM Delivery (100)

Outcomes		Group – I (50)		Group – II (50)	
		Number	Percentage	Number	Percentage
Age	20 – 30 Years	29	58.00%	33	66.00%
	31 – 35 Years	21	42.00%	17	34.00%
Pre-Term Delivery	Yes	26	52.00%	9	18.00%
	No	24	48.00%	41	82.00%
PPROM Delivery	Yes	9	18.00%	6	12.00%
	No	41	82.00%	44	88.00%





### DISCUSSION:

Antenatal care and clinical interventions are easy to plan in the presence of awareness and knowledge about ongoing pregnancies outcomes after the onset of bleeding during the first trimester bleeding. Threatened miscarriage and vaginal bleeding are mostly reported in our hospital. In the absence of relevant literature on the onset of threatened miscarriage, we aimed to document the correlation of threatened miscarriage during the first trimester with Preterm and PPRM deliveries.

We compared the association of threatened miscarriage during the first trimester with PPRM and preterm deliveries in Group – I & II. Group – I shows 26 females (52%); whereas, Group – II shows 9 females (18%) with a relative risk of (2.889) that is ( $> 2$ ). We also compared the onset of PPRM deliveries association with threatened miscarriage during the first trimester. There was a significant variation between the outcomes of both groups as Group – I had 9 cases (18%) and Group – II had 6 cases (12%) with a relative risk factor of (2.25).

It is also one of the prevalent hypotheses that the first trimester includes adverse outcomes of pregnancy such as preeclampsia, preterm pre-labour membranes rupture, preterm delivery, restriction of intrauterine growth and placental abruption; whereas, the death rate in the first trimester is very rare [5 – 7]. Few authors also noted the relation between preterm delivery and vaginal bleeding in their research series [8 – 10]. According to Williams and Batzofinetal, vaginal bleeding cases are at an increased preterm delivery risk (almost double) than non-bleeding patients [11, 12]. Williams only discussed the first

trimester patients; whereas, Batzofinet discussed the vaginal bleeding up to twentieth week [7, 12]. Pantel-Silverman and Strobino did not provide any association between preterm deliveries before 36<sup>th</sup> gestational week with the minor onset of vaginal bleeding in 1<sup>st</sup> or 2<sup>nd</sup> trimester [13]. In another research, the increased preterm delivery was significant in either light or heavy respectively (OR,  $< 2.0$ ) or (OR, 3.0) in the bleeding during the first trimester [14].

Davari-Tanha also proposed vaginal bleeding of the first trimester as a sole risk of the adverse outcomes with a significant difference of first trimester patients about the vaginal bleeding, 46 preterm deliveries (52.9%) against 66 cases (14.7%) and 24 PPRM deliveries (16%) against 29 PPRM deliveries (6.4%). These outcomes correlate with the research outcomes of our research. These outcomes will definitely help the patients and obstetricians in order to decide better management options and healthcare provisions.

### CONCLUSION:

The correlation of threatened miscarriage during the first trimester with Preterm and PPRM deliveries was higher than the patients not in the first trimester.

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