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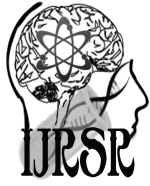
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## Research Article

### SECONDARY POST PARTUM HEMORRHAGE - SCENARIO IN A LOW RESOURCE SETTING

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#### ABSTRACT

Secondary PPH is any excessive bleeding from the birth canal occurring between 24 hours and 12 weeks postnatal<sup>1</sup>. Despite dramatic increase in hospital deliveries secondary PPH is still common and a cause of significant morbidity to the delivered woman especially in developing countries or in a low resource setting. Incidence of secondary PPH in our study was 1.25%. Caesarian delivery is an important risk factor for secondary PPH. Initial conservative management with uterotonics is the mainstay of treatment. In our study 76 women (25.5%) were managed successfully by conservative management. Surgical evacuation was done in 221 (74.4%) women who had USG documented retained products of conception/placental polyp. 66 (22.2%) had torrential bleeding which was controlled by tamponade in 62 (20.8%) and hysterectomy had to be resorted to in 4 women. 4 post cesarean secondary PPH patients with USG documented empty uterus did not respond to conservative management and were diagnosed as cases of AV fistula / pseudoaneurysm on color Doppler.

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#### INTRODUCTION

Secondary PPH is any abnormal or excessive bleeding from the birth canal occurring between 24 hours and 12 weeks postnatal<sup>1</sup>. Postnatal period is a time of significant psychological upheaval for women and their families, which would be worsened by secondary PPH<sup>2</sup>. Secondary PPH is usually caused by subinvolution of placental site or by partial retention of placental fragments. Infrequently the cause may be a placental polyp, ruptured varix, submucous myoma or exogenous estrogen therapy<sup>3</sup>. Retention of blood clot, piece of membrane, retroversion, puerperal inversion, chorio-epithelioma, growth within uterus, carcinoma cervix and too early coitus are some other causes of secondary PPH<sup>4</sup>.

#### Objective

To assess the incidence of secondary PPH and identify factors that predispose to its occurrence. To analyze the women presenting to a tertiary care hospital as secondary PPH in terms of presentation, causes, methods of treatment along with associated morbidity.

#### METHODS

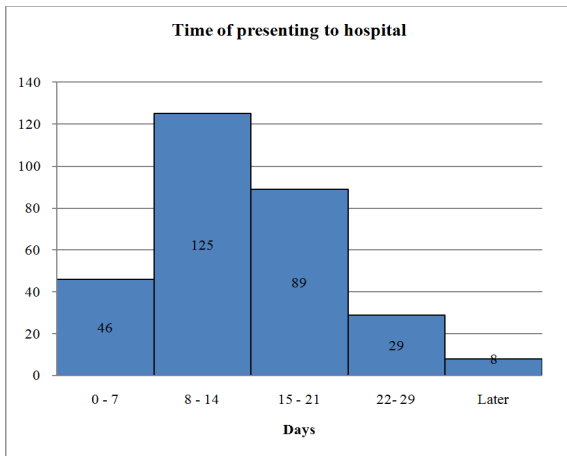
A total of 297 patients with clinically significant bleeding per vaginum at any time between 24 hours and 12 weeks following delivery of more than 28 weeks fetuses were admitted over a period of one year from March 2013 to February 2014 in Lalla Ded Hospital an Associated Hospital of Government Medical College Srinagar, which is the lone tertiary care obstetric hospital of Kashmir valley. The information recorded included age, parity, labor onset, and mode of delivery, indication of cesarean delivery, associated antenatal complications and third stage complications. Presentation of secondary PPH, USG findings, management and complications encountered during management were documented for each woman.

#### RESULTS

During this one year study 23586 deliveries occurred in the hospital out of which 253 women were readmitted as secondary PPH. 44 cases were admitted in emergency as secondary PPH after delivering elsewhere. This put the incidence of secondary PPH at our centre as 297/23586 (1.26%). Time of onset of bleeding was variable. 46 women presented within 7 days of delivery, 125 within 8 – 14 days, 89 in 15 to 21 days, 29 in 22 – 29 days and 8 beyond 29 days (Table 1).

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The patients had different characteristics and profile (table 2)

**Table 2** Patient characteristics

Characteristic	Count	Percentage
<b>Primipara</b>	<b>109</b>	<b>36.70%</b>
Multipara	188	63.30%
Induced labor	120	60.91%
Multiple pregnancy	13	4.38%
Spontaneous vaginal delivery	160	53.87%
Assisted vaginal delivery	20	6.73%
Elective C-Section	28	9.43%
Emergency C-Section	92	30.98%
H/o Primary PPH	15	5.05%
H/o Retained placenta	12	4.04%

The ratio of primipara to multipara was 1:1.7. Certain specific antenatal complications were encountered in most patients (Table 3)

**Table 3** Antenatal predisposing factors

Factor	Count
<b>Anemia</b>	<b>219</b>
History of threatened abortion	45
Ante Partum Hemorrhage	48
Pre labor rupture of membranes	169
Pregnancy induced hypertension	43
H/O PPH in previous pregnancy	31
Multiple pregnancy	13
Precipitate labor	16
H/O primary PPH	15

Routine investigations, ultrasound was done in all patients. Color Doppler and  $\beta$ -HCG levels were done wherever needed (Table 4).

**Table 4** USG findings

Retained fragments	Count	Percentage
<b>Retained fragments</b>	<b>192</b>	<b>64.6%</b>
Blood clots and debris	58	19.5%
Empty uterus	39	13.1%
AV fistula	4	1.3%
Placental polyp	1	0.3%
Sub-mucosal fibroid	3	1.01%

4 women had not been discharged after delivery. 33 women were received in a state of shock with an estimated blood loss of >1.5 liters. 96 patients were febrile at the time of admission. 83 had uterine tenderness on bimanual examination. 2 were diagnosed as septic shock.

**Table 5** Patient presentation: Bleeding per vaginum with

Shock	Count	Percentage
<b>Shock</b>	<b>33</b>	<b>11.11%</b>
Anemia	290	97.64%
Fever	96	32.32%
Subinvolution	164	55.22%
Uterine tenderness	83	27.95%
Inversion	2	0.67%
Hematoma	3	1.01%
Episiotomy wound gaping	15	5.05%

All patients were managed with oxytocics and antibiotics according to hospital protocol. 230 (77.44%) women received blood transfusion. Surgical evacuation was done in 221 women (74.41%) cases. Massive hemorrhage occurred in 66 women, out of which 62 were controlled by uterine tamponade using condom / Foley's catheter while as 4 had to undergo hysterectomy. While doing surgical evacuation perforation occurred in 3 patients, out of which 1 underwent hysterectomy and 2 needed laparotomy for repair of perforation. 9 women needed (preop/postop) ICU care. Hospital stay ranged from 4 – 20 days.

76(25.5%) patients responded to conservative management. 221(74.4%) patients underwent uterine evacuation. 230(77.4%) patients had to receive blood transfusions. The complications encountered are depicted in Table 5

**Table 5** Complications

Complication	Count	Percentage
Perforation	3	1.01%
Hysterectomy	4	1.34%
Bleeding control tamponade	62	20.8%
ICU admission	9	3.03%

## DISCUSSION

Secondary PPH is defined as bleeding from the genital tract after 24 hrs up to 12 weeks post partum.(1). Incidence of secondary PPH in our study was 1.25%. The rates reported in previous studies ranged from 0.8<sup>5</sup> – 2%<sup>1</sup>. Despite dramatic increase in hospital deliveries secondary PPH is still common and a cause of significant morbidity to the delivered woman. Cesarean delivery is an important risk factor for secondary PPH. History of prelabor rupture of membranes, induced labor. Women presenting with secondary PPH usually do so during second and third post partum week<sup>6</sup>.

The management of women with secondary PPH is difficult. Initial conservative management with uterotonics is the mainstay of treatment. Antibiotics are simultaneously started to treat any superimposed infection as endometritis is an important cause of secondary PPH. In our study 76 women (25.5%) were managed successfully on this line of conservative management. Surgical evacuation was done in 221 (74.4%) women who had USG documented retained products of conception/placental polyp. Out of the women who underwent curettage 66 (22.2%) had torrential bleeding which was controlled by tamponade in 62 (20.8%) and hysterectomy had to be resorted to in 4 women. Surgical evacuation was done with great caution by consultant obstetrician. 10 women presenting with sec PPH in 22 - 29 days postpartum with USG documented empty uterus responded to empirical progesterone treatment.

4 post cesarean secondary PPH patients with USG documented empty uterus did not respond to conservative management and were diagnosed as cases of AV fistula / pseudoaneurysm on color Doppler. Pseudoaneurysm of uterine artery develops during cesarean section when the lacerated / injured artery does not seal completely. Blood collects into the perivascular space and if this communication maintains connection with the parent vessel a pseudoaneurysm develops. Rupture of the pseudoaneurysm results in profuse bouts of bleeding<sup>7</sup>. Patients diagnosed were treated with embolisation / excision of the fistula. Coagulation abnormalities can also be rare and important cause of sec PPH. In our study one patient who presented with recurrent episiotomy wound hematoma was diagnosed as a case of VonWilbrands Disease on detailed evaluation. Febrile morbidity, anemia and need for transfusion in our study was----- which is higher as compared to previous studies. Antenatal anemia, higher rates of LSCS and low standards of hygiene can be other contributing factors for occurrence of sec PPH.

## CONCLUSION

*Sec PPH is a significant cause of postpartum morbidity*

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