

## Research Article

# Postpartum Hemorrhage; Incidence and Prognosis

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Received: 30 March 2022; Accepted: 08 April 2022; Published: 27 April 2022

Citation: Zelmat SA, Bouabida D, Boucherit DE, Boucherit E, Mazour F. Postpartum Hemorrhage; Incidence and Prognosis. Anesthesia and Critical Care 4 (2022): 98-103.

### Abstract

During the study period a total of 1000 deliveries; 74 parturients presented with PPH, an incidence of 7.4% [95% CI 6.3-6.5] with that of severe PPH at 2.7% [95% CI 1.6-1.8]. maternal age varied between 30 and 42 years. The average age in our sample was:  $34.33 \pm 6.030$  years. Mean term:  $38.69 \pm 1.25$  weeks gestation mean was  $3.8 \pm 1.6$ . The oldest parity was  $3.2 \pm 2$  with extremes of 1 and 8. 73.7% were multiparous (2 deliveries and more). RBC transfusion was done in 97.5%. Oxytocics were administered in 95.8%. Uterine inertia following a placentation anomaly (accreta, increta and percreta) remains the most frequent etiology in 79.8%, and coagulation disorders 15.2% (congenital or acquired) and 5% of entangled causes (ATCD from Covid19, death in utero, help ). As for the mode of delivery, the upper

route is the most frequent with 70% of cases RBC transfusion was done in 97.5%. Oxytocics were administered in 95.8%. Uterine revision was performed in 80.6%. , artificial delivery was done in 26.4%. Vascular ligation was done in 20.8%. Hemostatic hysterectomy was required in 19.4%. Hospitalization in the maternal intensive care unit was necessary in 70.9% with an average duration of 3.5 days. There were 73% cases of disseminated intravascular coagulation (DIC), 50% renal failure (IR) of which two were hemodialysis. The death rate was 18%. Three risk factors associated with a poor maternal prognosis: severe hypovolaemia ( $p = 0.0001$ ), disseminated intravascular coagulation abnormalities ( $p = 0.006$ ) and organic renal failure ( $p = 0.0013$ ).

**Keywords:** Bleeding; Hypovolaemia; Pathology of coagulation Hysterectomy-Death

## 1. Introduction

Postpartum hemorrhage (PPH) remains the leading cause of direct obstetric maternal mortality in Algeria, unlike most other developed countries [1]. It is also the first cause of severe morbidity [2]. Moreover, it appears that, all over the world, this maternal complication is the one for which the management is the most insufficient and for which much progress can and must be made [2]. Indeed, 60 to 90% of maternal deaths due to PPH are potentially avoidable [3]. The key point of this management is a well-functioning multidisciplinary approach within each maternity hospital, based on national and international recommendations as well as on a good knowledge of the physiopathology, etiologies and available treatments. Its incidence is particularly frequent in type III centers and leads to significant maternal morbidity and mortality and the implementation of second-line treatments. PPH is defined as a blood loss greater than 1000mL, or a peripartum hemoglobin loss greater than 2g/dL. PPH is said to be severe if blood loss is greater than 1000 ml. It is defined by the presence of at least one of the following criteria: hemoglobin loss greater than or equal to 4g/dL, embolization, conservative surgery, hysterectomy, transfusion, transfer to intensive care, or death. PPH is an obstetrical emergency, which is life-threatening for the mother. The incidence of severe PPH is around 2%. Uterine atony is the main cause of PPH. Genital tract wounds are responsible for approximately 1 in 5 cases of PPH. This hemorrhage represents the first cause of maternal

mortality and is responsible for 25% of preventable maternal deaths.

## Objective

This work is to determine the incidence of severe PPH in the university hospital of Oran.

## 2. Patients and Methods

It is a descriptive, prospective study. Mono centric, which took place at the EHUD'Oran over a period from 15/03/2020 to 15/03/2021. All patients with severe PPH were included. Maternal characteristics: age, gesity, parity, medical and obstetrical history, existence of uterine atony or coagulopathy, mode of delivery, management modalities, transfers to the intensive care unit, as well as maternal complications were collected on survey forms prepared for the study. The data were analyzed using SPSS 20 software.

## 3. Results

During the study period a total of 1000 deliveries 74 parturient presented with PPH, an incidence of 7.4% [95% CI 6.3-6.5] with that of severe PPH was 2.7% [95% CI 1.6-1.8]. Maternal age ranged from 30 to 42 years. The average age in our sample was:  $34.33 \pm 6.03$  years. The mean term was  $38.69 \pm 1.25$  years, the mean gestation was  $3.8 \pm 1.6$  years, the mean parity was  $3.2 \pm 2$  with extremes of 1 and 8. 73.7% were multiparous (2 or more deliveries). Uterine inertia due to placental anomaly (accreta, increta and percreta) was the most frequent etiology in 79.8%, and coagulation disorders in 15.2% (congenital or acquired) and 5% of interrelated causes (history of Covid19, death in utero, help.)

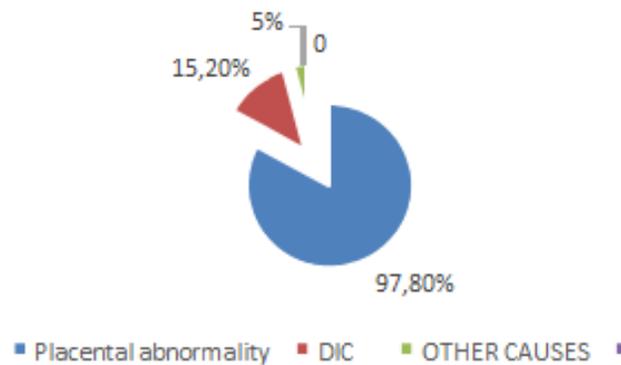


Figure 1: Distribution of patients by etiology of the HPP

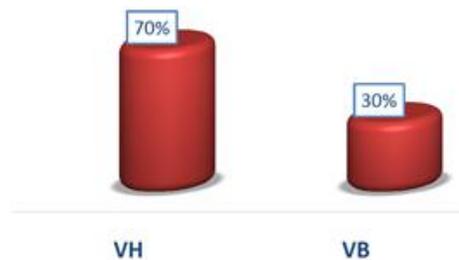


Figure 2: Distribution of parturients according to delivery route

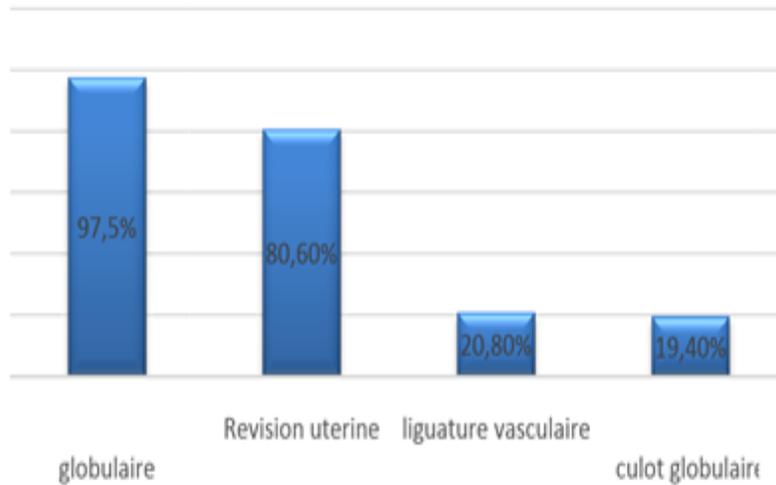
VB low way  
VA high way

Red blood cells were transfused in 97.5% of patients. Oxytocics were administered in 95.8%. Uterine revision was performed in 80.6%. Artificial delivery was performed in 26.4%. Vascular ligation was performed in 20.8%. Hemostasis hysterectomy was

necessary in 19.4%. (Figure 3) Hospitalization in the maternal intensive care unit was necessary in 70.9% of cases, with an average duration of 3.5 days (Table 1).

Hospitalization Kindergarten	In Reanimation	In unit of groseese a hut risk
Number percentage	125(22,7%)	426(77,3%)
	22(6,5%)	316(93,5%)
Average length of hospital stay days	3,5	7,8

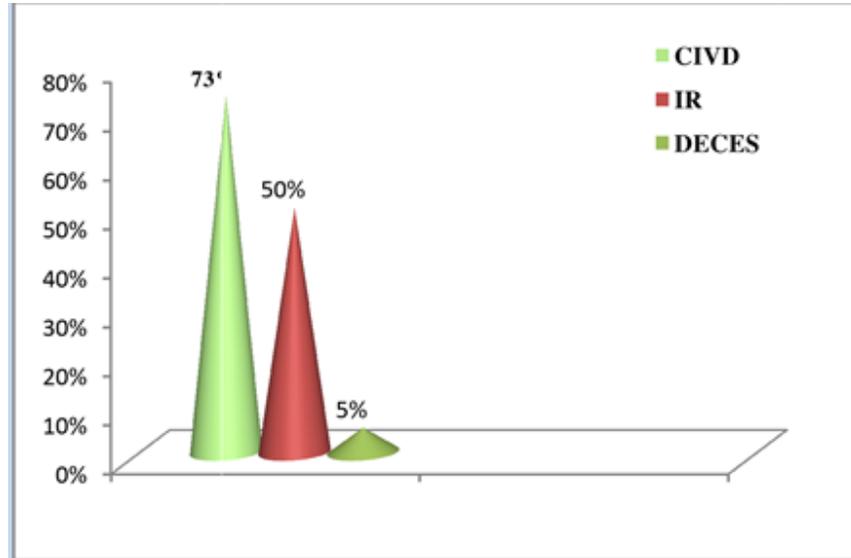
Table 1: Frequency of patients hospitalized in intensive care and length of hospitalization



**Figure 3:** Distribution of parturients according to treatment

Disseminated intravascular coagulation (DIC) was reported in 73% of cases, renal failure (RF) in 50% of cases, two of which required hemodialysis. The death rate was 18% (Figure 4). Three risk factors associated

with poor maternal prognosis: severe hypovolemia ( $p = 0.0001$ ), disseminated intravascular coagulation abnormalities ( $p = 0.006$ ) and organic renal failure ( $p = 0.0013$ ).



**Figure 4:** Distribution of parturients according to severe complications

#### 4. Discussion

During the study period the incidence of PPH was 7.4% [95% CI 6.3-6.5] and that of severe PPH was 2.7% [95% CI 1.6-1.8]. Our results are consistent with the literature [4,5]. Dupont C in 2014 and in 2009, in France finds an incidence of PPH that varies from 1.5 to 22% depending on the maternity hospital [5]. This suggests an implication of the adequacy of postpartum surveillance at our level. In our study, regarding the incidence of PPH is much more frequent after caesarean section than in vaginal delivery our results are similar to those found in literature [6]. The incidence of placental anomalies has been steadily increasing over the last twenty years and reached 1/533 in 2002 [7,8]. The implication of placental anomalies in the occurrence of severe, even cataclysmic, PPH justifies a collegial reflection on its management. Indeed, according to studies, patients with an adherent placenta (accreta, increta and percreta) have an increased risk of haemostasis hysterectomy by 43. (OR= 43, 95% CI: 19- 98) [53,8]. This result confirms that obtained prospectively in 117 parturients [14,9]. Other etiologies are represented by uterine inversion (rare <1/1000 and iatrogenic) and coagulation disorders (congenital or acquired) which can be both cause and consequence of PPH, this coagulation disorder is consistent with our study. Mortality rates in developed countries are around 1/100,000 for the United Kingdom, 8.9/100,000 for the United States and can reach 1% in our series. The death rate is similar to that of developing countries [1, 9-12] [10-13]. Delivery hemorrhage is an obstetrical emergency that constitutes the first cause of maternal mortality. Uterine atony remains the main etiology; it often

seems avoidable because most patients at risk can be identified before or during labor. In this respect, obstetrical management of delivery is essential; it allows for the necessary prevention and treatment measures to be taken. Once the hemorrhage has set in, any delay or hesitation in the multidisciplinary management is detrimental because it favors the appearance of coagulation disorders and the installation of a vicious circle.

#### 5. Conclusion

PPH is a complex situation because it represents an obstetrical emergency that can jeopardize the maternal vital prognosis. In this respect, preventive measures, early multidisciplinary management by codified protocols well adapted to each health structure are the only guarantee of a good prognosis. The objective here is to update the content, focusing mainly on the place of pro-hemostatic treatments and on the management of placenta accreta.

#### Declaration of interest

The authors declare that they have no ties of interest.

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