



The Republic Of Iraq

**Ministry Of Higher Education And Scientific
Research**

University of Babylon College Of Medicine

**Post-Partum Hemorrhage Among Women, Its Possible
Predisposing Factors And Its Maternal Complications
In Babylon Governorate**

BY

- Ali Saleh Hadi
- Aumnia Mohammed Khalil
- Danyah Adil Jawad
- Hala Khalid Gamal
- Shams Amjad Khadim
- Tamara Maytham Hamza
- Yassir Hussain Mahoomd
- Yousef Falah Hassan

Supervised By

Prof. Dr. Bushra J.Umran AL-Rubayae

Introduction

Postpartum hemorrhage (PPH) is commonly defined as blood loss exceeding **500 mL** following vaginal birth and **1000 mL** following cesarean.

Definitions vary, however, and diagnosis of PPH is subjective and often based on inaccurate estimates of blood loss. symptoms of hemorrhage or shock from blood loss may be hidden by the normal plasma volume increases that occur during pregnancy.

- PPH is often classified as primary/immediate/early, occurring within **24 hours** of birth.
- Secondary/delayed/late, occurring more than **24 hours** post-birth to up to **12 weeks** postpartum.
- In addition, PPH may be described as third or fourth stage depending on whether it occurs before or after delivery of the placenta, respectively.

The overall prevalence of PPH worldwide is estimated to be **6 to 11 percent** of births with substantial variation across regions.

Prevalence differs by assessment method and ranges from **10.6 percent** when measured by objective appraisal of blood loss to **7.2 percent** when assessed with subjective techniques to **5.4 percent** when assessment is unspecified.

PPH is a leading cause of maternal mortality and morbidity worldwide and accounts for nearly **one-quarter** of all maternal pregnancy-related deaths. Morbidity from PPH can be severe with sequelae including organ failure, shock, edema, compartment syndrome, transfusion complications, thrombosis, acute respiratory distress syndrome, sepsis, anemia, intensive care, and prolonged hospitalization.

Multiple studies have noted an increase in PPH in high-resource countries, including the United States, Canada, Australia, Ireland, and Norway, since the **1990s**.

In the United States, one study found that the incidence of PPH increased **26%** from **1994 to 2006** (**2.3% vs. 2.9%**, respectively, $p < 0.001$).

Another U.S. study reported the incidence of severe PPH doubled from **1.9 percent in 1999 to 4.2 percent in 2008** ($p < 0.0001$).

Methodology

1. Study Design:

A cross sectional study. (type of researches based on collecting data by conducting questionnaire)

2. Study Site:

This study was conducted at two of the main hospitals in Babylon that considered to be A pioneer in providing health services for mother and child which are :

1- Al-Sadiq Hospital.

2- Babylon Hospital For Women And Children.

3. Inclusion Criteria:

This study dealt with the issue of postpartum hemorrhage through a questionnaire that was conducted on a group of women, who have history of postpartum hemorrhage.

4. Sample Size:

100_ sample are taken from in-patient and outpatient of postpartum woman.

5. Data Collection:

With aid and instructions of the researchers , the data was collected by letting the participants fill the questionnaire, demographic information included their age , number of pregnancies, number of births.

6. Questions about:

- Weight.
- Height.
- Where did labour take place?
- Type of delivery.
- Was the labour induced?
- The amount of blood loss.
- How many units of blood were used to treat the bleeding?
- The time of the bleeding.
- The duration of each delivery.
- The total number of births, number of live/still births.
- Date of delivery.
- History and family history of PPH.
- Antenatal care.
- Past medical history.
- Past drug history.
- If there were any complications following the previous PPH?

7. Data analysis:

A descriptive study, tables, graphs and calculations were coded and entered into the computer through Google forms, Microsoft Excel and Microsoft Word.

8. Ethical considerations:

The study was carried out in April 2022 and was carried out after obtaining the verbal consent of all participants.

Results

- The study showed that incidence of PPH is associated with increased BMI as explained in **figure 1**.
- 31% of PPH cases are associated with maternal age above 30 years (18% in 31 – 35 years age group, 8% in 36 – 40 years age group and 5% in 41 – 45 years age group) and 13% of the cases were < 20 years old.
- Home deliveries and emergency C/S deliveries following a complicated home delivery were responsible for 32% of the cases. (19% are due to emergency C/S following a complicated home delivery and 13% are due to home delivery).
- Mode of delivery has a significant effect on only the incidence of PPH but also blood units that are needed to cure the patient following PPH (Forceps delivery requires a median of 2.5 blood units of blood, C/S requires a median of 1.93 blood units and NVD requires a median of 1.85 blood units) contribution of each mode to PPH is explained on **figure 2**.

Bleeding volume following delivery exceeded 500 mL in 42% of NVD cases and 47% of C/S cases.

- Active management of the third stage in NVD has decreased the incidence of PPH by 47% as it shortens the duration of the third stage.
 - Oxytocin administration prior to C/S (initially to induce labour) has a great role in prevention of PPH in about 60% of the cases which mostly achieved by helping the uterus to contract (increases the speed of uterine involution).
 - 79% of the cases had primary PPH (within 24H of delivery).
 - Up to 30% of the patients had a family of PPH.
 - A prolonged first labour in primiparous patients and also having a history of prolonged first labour in multiparous patients is responsible for 27% of PPH while precipitated labour is responsible for 12% of the cases as shown in figures 3&4.
 - 15% of PPH cases are associated with pre-term delivery and 16% are with post-term delivery.
 - Absence and irregularity of Ante-natal care are responsible for 36% of the cases.
 - Figure 5 shows the live/still births ratio in women with PPH, and figure 6 shows the relation between multiple parity & PPH.
 - Up to 80% of patient with PPH don't suffer from any disease prior to pregnancy however 13% suffer from Hypertension and about 5% suffer from thyroid disorders.
- Maternal disorders during pregnancy include Hypertension in 13% of the patients and Hypertension after the fifth month in 9% of the

patients, other maternal disorders are shown on figure 7.

- The usage of anti-platelets drugs has significant effect on the incidence of PPH e.g. Aspirin was used by 12% of the patients prior to pregnancy and in 8% after conception, other drugs are shown on figures 8&9.
- The study found that most important complication of PPH is anemia which is seen in 64% of the patients. (see figure 10)

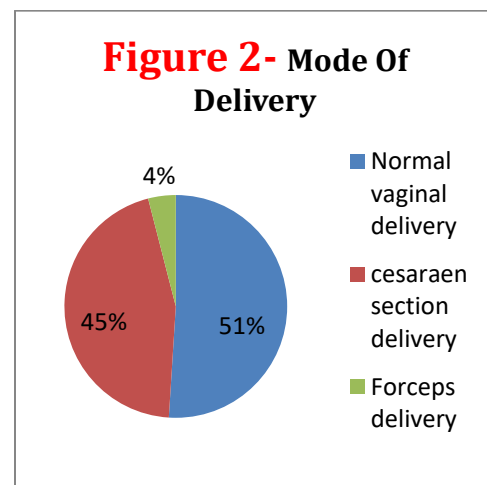
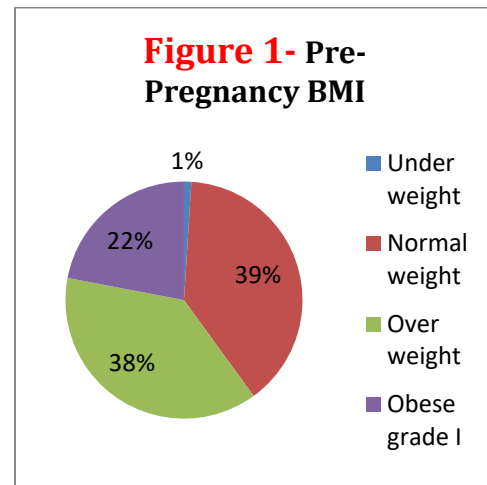


Figure 3- Duration Of First Labour

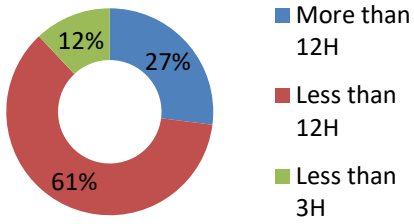


Figure 4- Duration Of Other Labours

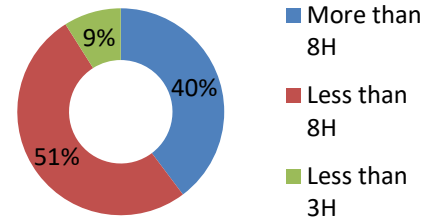
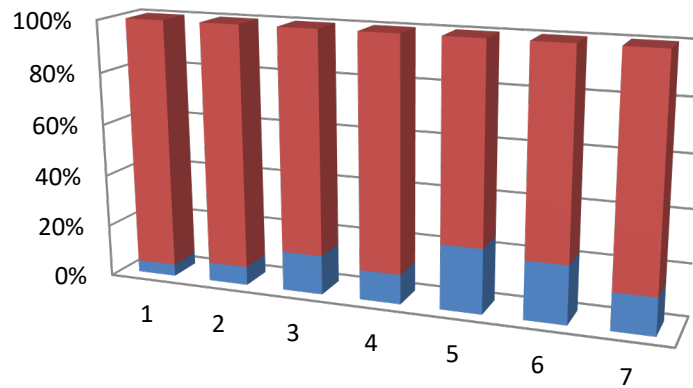


Figure 5- Live/Still Births Ratio In Women With PPH



	1	2	3	4	5	6	7
■ Live Births	21	39	51	39	64	28	30
■ Still Births	1	3	9	5	21	8	5

Figure 6- Parity & PPH

■ Number of women who had this number of births ■ Total number of births

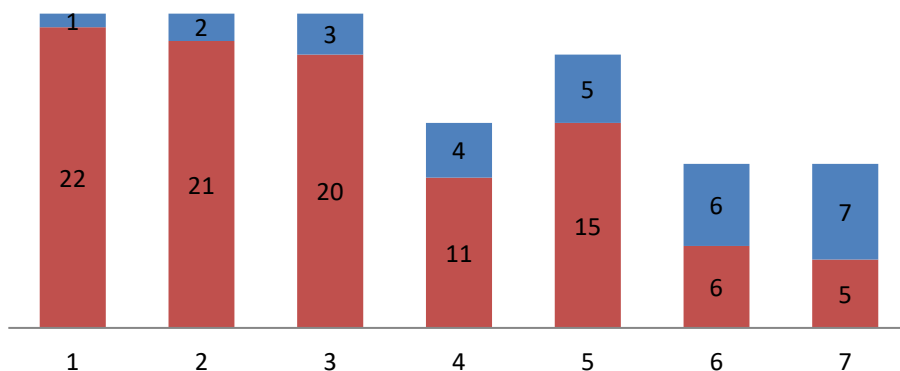


Figure 7- Maternal Disorders During Pregnancy

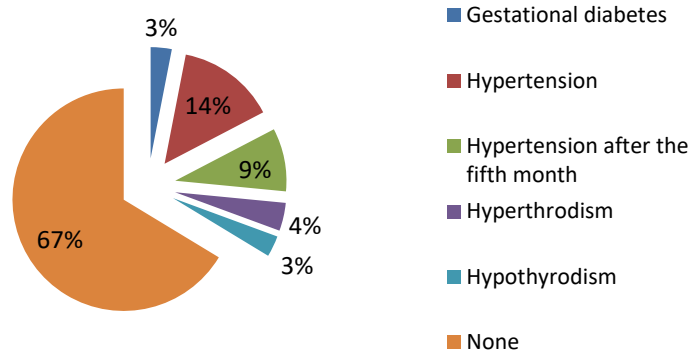


Figure 8- Drugs Used Prior To Pregnancy

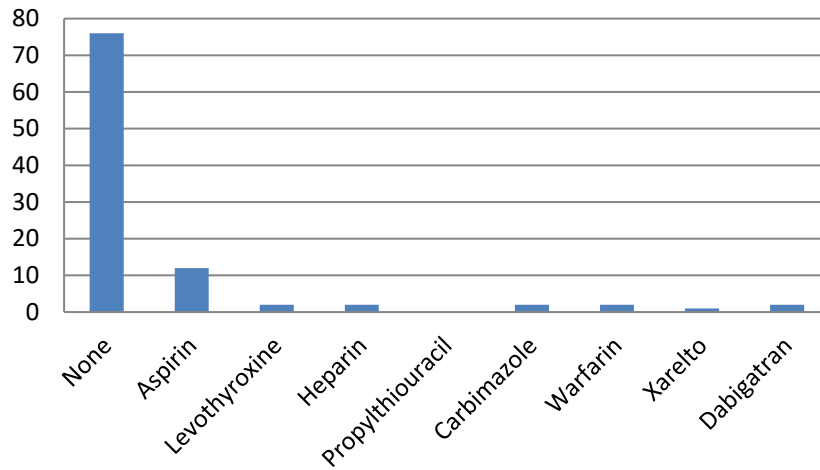
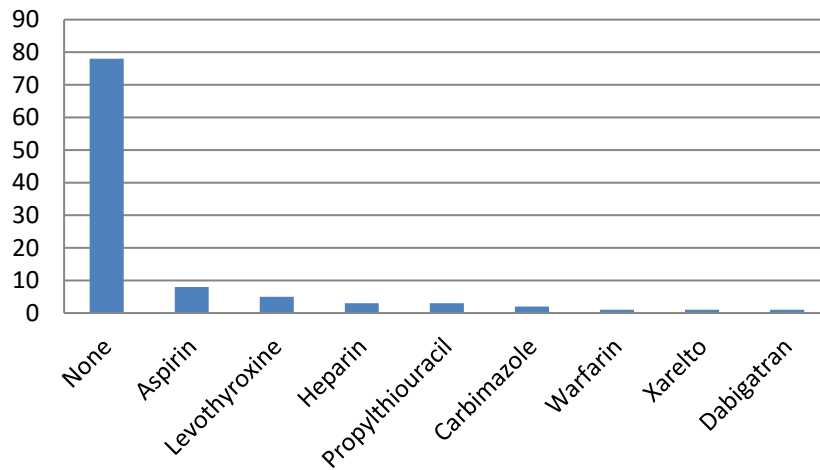
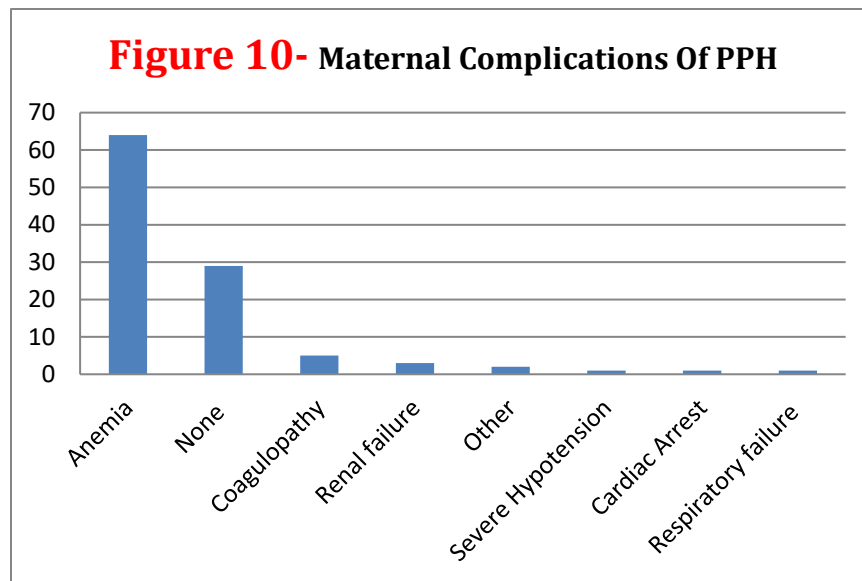


Figure 9- Drugs Used During Pregnancy





Discussion

- The study found that 39% of women with PPH were of normal weight, 38% were overweight and 22% were obese grade I prior to pregnancy. While a study at National Women’s Hospital, Auckland, New Zealand from 2006 to 2009 (N=11,363), population was nulliparous singleton pregnancies delivered at term found that 25% of women with PPH were of normal weight, 23% were overweight and 52% were obese of various grades prior to pregnancy. Thus there is an increased chance that women who suffer of PPH in Hillah, Iraq are overweight when compared to Auckland, New Zealand, but a decreased chance of being obese.
- Our study found that 32% of PPH cases were due to emergency C/S while a study carried by School of Women and Infants Health, King Edward Memorial Hospital, Perth, Australia on July, 2005, in which there were 2,993 emergency C/S over 4 years, and found that the PPH rate in was 6.75% only.
- A case-control study was conducted between July 1st, 2007 and June 30th, 2008 at King Abdul-Aziz Medical City, Riyadh, Saudi Arabia. One hundred and one patients with PPH and 209 control patients were included. Bivariate associations between the different risk factors for the development of PPH were studied. High parity was associated with a 17% increased risk of PPH while our study found that high parity (more than 5 parities) is associated with a 26% increase in the risk of PPH.

Conclusion

PPH is an important cause of maternal morbidity. We now have new pharmacological and technical developments for prevention and treatment which can greatly reduce its incidence and squeals. Wider use of thermo stable prostaglandins like misoprostol and dissemination of knowledge about new tamponades procedures can minimize its incidence and limit its serious squeals. The safety of the third stage of labour, and the incidence of PPH and its complications will remain linked however to the wider issues of

reproductive health in general and more specifically to the funding and training needed to raise the standard of care offered to women in labour in many parts of the world.

We can avoid PPH by:

- 1- Avoiding home delivery and encourage hospital delivery by experienced doctors.
- 2- To sensitize the mothers to the need for the family planning at least **2-5 years** spacing between pregnancies.
- 3- Encouraging mothers to attempt the antenatal care.

Recommendations

- To maintain a healthy life style including a healthy diet (avoid fat rich diet, increase vegetables and fruits intake and decrease salt intake) increase physical activity in order to maintain a normal BMI between **18.5 to 24.9**.
- Apply the rules of family planning and try to avoid late age pregnancy, and if it occurs, consult with specialists. Another important aspect is to sensitize the society about the risks of children marriage.
- Special training for early detection of complicated pregnancies that require C/S or early delivery to avoid emergency delivery and emergency C/S.
- Special training to manage complicated NVD or emergency C/S and their possible complications.
- Control of maternal diseases prior to pregnancy, specially Hypertension, Diabetes Mellitus (type I&II) and thyroid disorders.

References

- Organization WH. WHO recommendations for the prevention and treatment of postpartum haemorrhage. Geneva: World Health Organization; 2012.
- World Health Organization. 1. WHO recommendations for the prevention and treatment of postpartum haemorrhage. WHO sexual and reproductive health. Geneva: World Health Organization; 2018.
- Knight M, Callaghan WM, Berg C, et al. Trends in postpartum hemorrhage in high resource countries: a review and recommendations from the International Postpartum Hemorrhage Collaborative Group. *BMC Pregnancy Childbirth*. 2009
- Umashankar K, Dharmavijaya M, Sudha R, Sujatha ND, Kavitha G. Effect of a primary postpartum haemorrhage on the “near-miss” morbidity and mortality at a Tertiary Care Hospital in Rural Bangalore, India. *J Clin Diagn Res*. 2013;7(6):1114.
- Tort J, Rozenberg P, Traoré M, Fournier P, Dumont A. Factors associated with postpartum hemorrhage maternal death in referral hospitals in Senegal and Mali: a cross-sectional epidemiological survey. *BMC Pregnancy Childbirth*. 2015;15(1):1–9.
- Rossen J, Okland I, Nilsen OB, Eggebo TM. Is there an increase of postpartum hemorrhage, and is severe hemorrhage associated with more frequent use of obstetric interventions? *Acta Obstet Gynecol Scand*. 2010;**89**(10):1248–1255. doi: 10.3109/00016349.2010.514324.
- Say L, Chou D, Gemmill A, Tunçalp Ö Moller AB, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health*. 2014;2(6):e323–33.
- Oxford Handbook of Obstetrics and Gynaecology 3ed 2013
- Obstetrics by Ten Teachers, 20th Edition, CHAPTER 8 PRETERM LABOUR AND CHAPTER 9 HYPERTENSIVE DISORDERS OF PREGNANCY.