



Postpartum Haemorrhage: An Overview of Diagnosis, Management, And Nursing Intervention Protocols

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Abstract:

Background: Postpartum hemorrhage (PPH) is a major obstetric complication associated with significant maternal morbidity and mortality. It is typically defined as a blood loss exceeding 500 mL during vaginal delivery or 1000 mL during Cesarean delivery. The condition can occur due to various etiological factors, categorized by the "4 T's": tone (uterine atony), trauma (lacerations), tissue (retained placenta), and thrombin (coagulation disorders). PPH can occur within 24 hours of delivery (primary) or later (secondary), and its management requires prompt, effective intervention to prevent severe outcomes.

Aim: The purpose of this article is to review the diagnosis, management, and nursing intervention protocols for PPH, with a focus on improving maternal health outcomes through early identification, accurate assessment, and timely intervention.

Methods: A comprehensive literature review was conducted on current practices in PPH diagnosis and management, including clinical protocols, risk assessment tools, and interprofessional care strategies. Emphasis was placed on nursing interventions for early detection and prevention.

Results: The review highlights the critical role of accurate blood loss measurement, use of uterotonic agents, and collaborative care in managing PPH. Early identification of at-risk patients and the implementation of active management protocols, such as oxytocin administration and uterine massage, significantly reduce the incidence of severe hemorrhage.

Conclusion: Timely intervention in PPH, supported by multidisciplinary teamwork, can dramatically improve maternal outcomes. Nurses play a pivotal role in early detection and initiating appropriate care.

The article emphasizes the importance of training healthcare professionals in accurate blood loss assessment and recognizing early signs of hemorrhage.

Keywords: Postpartum hemorrhage, uterine atony, nursing interventions, obstetrics, blood loss, maternal morbidity, management protocols.

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Introduction:

Postpartum hemorrhage (PPH) is a critical obstetric complication characterized by substantial blood loss following childbirth, presenting a significant risk to maternal health. The regulation of blood loss during delivery typically relies on uterine contractions and the coagulation cascade. However, in the absence of timely intervention, PPH can lead to severe maternal morbidity or mortality. The conventional definition of PPH—exceeding 500 mL of blood loss during vaginal delivery or 1000 mL during Cesarean delivery—was refined in 2017 by the American College of Obstetrics and Gynecology to include cumulative blood loss over 1000 mL accompanied by hypovolemic symptoms within 24 hours post-birth, irrespective of delivery mode. Despite these refinements, underestimation of blood loss remains a challenge, with more than 500 mL at vaginal delivery considered abnormal and potentially warranting intervention [1][2][3]. PPH is typically categorized by the timing of onset. Primary PPH occurs within 24 hours postpartum, primarily linked to the third stage of labor and delivery of the placenta. In contrast, secondary PPH manifests between 24 hours and up to 12 weeks postpartum. Its etiology is summarized by the “4 T’s”: tone, trauma, tissue, and thrombin. Effective management of PPH necessitates a multidisciplinary approach emphasizing precise blood loss evaluation, fluid resuscitation, and identification of bleeding sources. Interprofessional strategies, including the implementation of PPH care bundles and quality improvement collaboratives, have shown promise in reducing maternal morbidity. Quantitative methods for measuring blood loss, while more accurate, have yet to consistently improve clinical outcomes. Preventive measures, such as active third-stage labor management and early risk identification, are vital in mitigating PPH risks. Addressing the cognitive biases that can delay diagnosis, and intervention remains pivotal in improving maternal health outcomes [4][5].

Etiology:

The etiology of postpartum hemorrhage revolves around four primary mechanisms: tone (uterine atony), trauma (lacerations or uterine rupture), tissue (retained placenta or clots), and thrombin (coagulation abnormalities). Uterine atony, the leading cause of PPH, accounts for approximately 70% of cases and is influenced by numerous risk factors, such as advanced maternal age, nulliparity, and grand multiparity. These factors often align with underlying pathophysiological mechanisms [6][7][8][9]. Secondary PPH arises from retained placental tissue, subinvolution of placental sites, inherited coagulation disorders, or infectious causes. Various risk factors contribute to each etiology. Uterine atony may be associated with conditions such as chorioamnionitis, prolonged or precipitous labor, labor induction or augmentation, magnesium sulfate therapy, uterine fibroids, uterine inversion, or overdistention caused by multiple gestations, macrosomia, or polyhydramnios. Traumatic origins of PPH include Cesarean deliveries, instrument-assisted vaginal births, midline episiotomies, and persistent occiput posterior positions. Tissue-related causes encompass prior Cesarean delivery, placenta accreta, placental abruption linked with hypertension, or uterine anomalies. Coagulopathies, whether acquired or inherited, play a significant role and include conditions like HELLP syndrome, severe preeclampsia, intrauterine fetal demise, amniotic fluid embolism, or von Willebrand disease. Understanding these risk factors and their interplay is essential for clinicians to anticipate, diagnose, and address PPH effectively. Comprehensive strategies encompassing risk factor identification and multidisciplinary care plans can mitigate adverse outcomes and enhance maternal safety during the postpartum period [4][5][10][11].

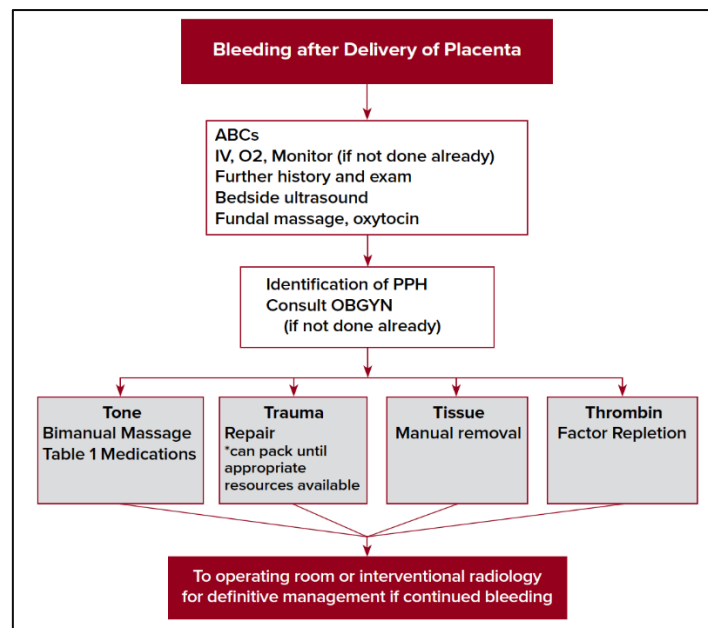


Figure 1: Postpartum Hemorrhage Approach.

Epidemiology:

Postpartum hemorrhage is a global obstetric challenge, occurring in 1% to 3% of all deliveries. It remains the foremost cause of maternal morbidity and mortality worldwide. In developing nations, PPH accounts for approximately 8% of maternal deaths, while in developed countries, it contributes to 20% of maternal mortalities. The United States reports one of the highest maternal mortality rates among developed nations, with PPH-related deaths escalating from 8 to 40 cases per 10,000 deliveries [5]. European data reveal a PPH incidence of approximately 13% of deliveries. Uterine atony, the predominant cause of PPH, is implicated in 70% to 80% of hemorrhagic cases. This epidemiological burden underscores the necessity for enhanced surveillance, prompt diagnosis, and effective interventions. Disparities in healthcare systems and access to obstetric care exacerbate maternal mortality rates, particularly in resource-limited settings. Innovations in PPH management, such as advanced blood loss monitoring techniques and targeted interventions, aim to address these disparities. Continued efforts to integrate evidence-based practices into obstetric care are essential for reducing the global burden of PPH and improving maternal health outcomes [12][13].

Pathophysiology:

Postpartum hemorrhage arises from the failure of physiological mechanisms designed to control uterine blood flow and promote hemostasis during delivery. In a nonpregnant state, uterine blood flow averages 100 mL/min but increases to approximately 700 mL/min during pregnancy. This dramatic rise is accompanied by a hypercoagulable state, driven by coagulation factor changes, and postpartum processes such as myometrial contraction and local decidual hemostasis. When these mechanisms fail, significant bleeding ensues. Clinical manifestations of hypovolemia typically become evident after a total blood volume loss exceeding 1500 mL, underscoring the need for timely recognition and intervention [5].

History and Physical Examination:

Accurate clinical evaluation is paramount for the early detection and management of postpartum hemorrhage. Initial assessments should focus on identifying risk factors and quantifying blood loss. Clinical indicators of significant hemorrhage, such as tachycardia, tachypnea, and hypotension, may not appear until a patient has lost over 1000 mL of blood due to the physiological adaptations of pregnancy. Rapid evaluation during and after delivery, employing visual estimation, weighted sponges, and serial monitoring of vital signs, is critical for early diagnosis [5][14]. Physical examination should include an assessment of the lower genital tract to identify potential sources of bleeding, such as lacerations, hematomas, or uterine rupture.

Placental integrity must be verified, with manual or ultrasound-assisted evaluations conducted for suspected retained tissue. A noncontracted uterus is indicative of uterine atony, while uterine inversion presents as a palpable mass in the lower uterine segment. Disseminated intravascular coagulation may manifest widespread bleeding from venipuncture sites. Comprehensive and systematic evaluation during acute PPH episodes aids in determining the underlying etiology and guiding effective intervention strategies [15][16][17].

Blood Loss Quantification:

Research has consistently shown that blood loss associated with postpartum hemorrhage (PPH) is frequently underestimated in clinical settings, which often results in delayed recognition and intervention. Quantitative blood loss assessment methods have been introduced to provide more accurate measurements. These include the use of graduated under-buttock drapes, laparotomy pads, sponge weighing, artificial intelligence-enabled technologies, and irrigation canisters. Unlike older strategies that rely on observing hemoglobin changes, these tools aim to enable earlier recognition of PPH. Despite their potential, clinical outcomes have not seen significant improvements, as clinicians sometimes emphasize numerical measurements over the comprehensive clinical picture. Delaying the initiation of PPH management protocols until a specific blood loss threshold is reached can result in suboptimal outcomes. Any obstetric bleeding accompanied by hypovolemic symptoms or a blood loss exceeding 500 mL should prompt an assessment for PPH and consideration of interventional protocols. Accurate blood loss estimation requires a coordinated approach involving physicians, nurses, and technicians to address ongoing bleeding effectively [14][18].

Evaluation:

Laboratory studies form an integral component of PPH protocols, aiding in the assessment of blood loss severity and guiding subsequent interventions. Typical PPH laboratory panels include a complete blood count with platelet count, coagulation studies such as partial thromboplastin time and fibrinogen levels, comprehensive metabolic panels, ionized calcium, pH, and blood gases. These tests complement routine prenatal laboratory assessments, such as blood type and antibody screening, typically conducted upon admission. However, it is important to note that certain interventions should not be delayed while awaiting laboratory results. Periodic evaluations of hemoglobin, hematocrit, and platelet levels are essential, although laboratory findings may lag behind clinical manifestations. Coagulation studies and fibrinogen levels are particularly relevant in cases of suspected disseminated intravascular coagulation, as seen in patients with secondary PPH, placental abruption, or preeclampsia. Additionally, the placement of an indwelling bladder catheter facilitates fluid status monitoring and urine output assessment [5][10].

Treatment and Management

General Postpartum Hemorrhage Management:

The primary objective in managing PPH is to stabilize the patient while identifying and addressing the underlying cause. Ensuring hemodynamic stability is critical for maintaining adequate perfusion to vital organs. Upon diagnosing PPH, clinicians should immediately place two large-bore peripheral intravenous (IV) catheters (14- or 16-gauge) and confirm maternal blood type and antibody screen in anticipation of intensive corrective measures. Prompt and accurate cumulative blood loss assessment is essential, and early activation of blood product release and massive transfusion protocols is often required. Administration of crystalloids and colloids should be undertaken as clinically indicated, alongside an evaluation to determine the cause and implement tailored treatment strategies [20].

Uterine Atony Management:

As the leading cause of PPH, uterine atony necessitates prompt evaluation and management. Clinical signs include a soft uterus failing to contract effectively following delivery. Initial management involves clot removal and bimanual uterine massage to control bleeding. If these measures are insufficient, pharmacologic intervention with uterotonic agents is warranted.

1. **Oxytocin:** Administered as 10 international units (IU) intravenously (IV) or intramuscularly (IM), oxytocin is the first-line treatment for uterine atony if not previously given prophylactically. Its rapid onset of action (1–6 minutes IV) and minimal adverse effects make it a preferred choice.
2. **Methylergonovine:** Ergot alkaloids, such as methylergonovine (200 µg IM or IV), act as serotonergic and α-adrenergic receptor agonists, producing sustained uterine contractions. However, their use is contraindicated in hypertensive patients.
3. **Carboprost:** A prostaglandin F2-α analog, carboprost is administered at 250 µg IM or intramyometrially every 15 to 90 minutes (up to 8 doses). It is contraindicated in patients with severe hepatic, renal, or cardiovascular disease or asthma.
4. **Misoprostol:** This prostaglandin E1 analog offers flexibility in administration (oral, sublingual, rectal, or buccal routes) but is associated with adverse effects such as nausea, diarrhea, and fever. It is contraindicated in patients with cardiovascular conditions or anticoagulant therapy.
5. **Tranexamic Acid (TXA):** While not a uterotonic, TXA inhibits fibrinolysis and is often used in conjunction with uterotonics. The recommended dose is 1 g IV over 10 minutes within three hours of delivery.

If uterotonic agents fail, uterine tamponade may be considered. An intrauterine balloon, typically inflated with 250–500 mL of normal saline, can address bleeding, particularly in cases of lower uterine segment atony. Alternatively, gauze packing or multiple Foley catheters may be employed. Compression sutures, while effective in controlling hemorrhage, may carry risks such as uterine necrosis and synechiae and could impact future pregnancies [10][17][21].

Obstetrical Trauma:

Simultaneous identification and treatment of obstetric trauma are essential in PPH management. Genital lacerations, when identified as the bleeding source, should be promptly repaired. Cases involving suspected uterine artery laceration or rapidly expanding hematomas may necessitate transfer to an operating suite with anesthesia support. The presence of hematomas can manifest as clinical deterioration without overt bleeding. Management strategies include packing, arterial embolization, or surgical suturing, depending on the clinical scenario. While routine antibiotic prophylaxis is not generally recommended, interventions should be guided by individual patient assessments.

Uterine Inversion:

Uterine inversion, a condition where the uterus protrudes through the vaginal introitus following delivery, is marked by hypotension that is disproportionately severe relative to the observed blood loss. Clinically, uterine inversion often presents as a blue-gray mass emerging from the vaginal canal. Immediate manual repositioning of the uterus, with the placenta still attached if not already detached, is crucial. This involves applying steady pressure to the inverted uterine fundus, directing it back through the vagina into the pelvic cavity. In cases where manual repositioning fails, pharmacological intervention with tocolytic agents, such as nitroglycerin, terbutaline, magnesium sulfate, or halothane, may be required to relax the uterus and cervix. If these measures remain unsuccessful, laparotomy may be necessary. Through this surgical approach, gentle upward traction can facilitate uterine repositioning, potentially requiring an incision in the cervical ring to allow for successful restoration. Once the uterus has been replaced, uterotonic agents are administered to promote uterine contraction and manage ongoing hemorrhage effectively.

Retained Placenta:

In cases of placenta accreta, a scheduled Cesarean delivery—often accompanied by a hysterectomy—is typically planned between 34 and 37 weeks of gestation. Given the procedural complexity, Cesarean hysterectomy requires coordinated efforts among multiple disciplines. Preoperative stenting of the ureters is sometimes employed to minimize the risk of injury. For patients suspected of

harboring retained placental tissue, diagnosis is generally achieved through manual intrauterine exploration or ultrasonographic examination, particularly when ultrasound reveals an echogenic mass within the endometrial cavity. Manual removal of retained placental tissue, sometimes guided by ultrasound or using a banjo curette, is the standard intervention. If manual removal is unsuccessful, patients should be informed about the risks associated with retained placenta, including the potential need for hysterectomy. Subsequent transfer to an operating room is necessary for further management.

Coagulopathy

Acute coagulopathy should be considered in patients experiencing postpartum hemorrhage (PPH) due to conditions like placental abruption or amniotic fluid embolism, which are frequently associated with consumptive coagulopathy. Secondary PPH cases may also involve coagulopathies. Most PPH cases linked to coagulopathies necessitate blood transfusions and fluid replacement. Standard obstetrical transfusion protocols involve the administration of packed red blood cells (RBCs), fresh-frozen plasma, and platelets in specific ratios to address coagulation abnormalities. Hemoglobin levels are maintained above 7–8 g/dL, fibrinogen levels exceed 2 g/L, and platelet counts remain between 50,000 and 75,000 per microliter [10].

Additional Postpartum Hemorrhage Management Strategies:

For patients with PPH unresponsive to initial treatments, alternative management strategies include hypogastric artery ligation, uterine artery embolization, and hysterectomy. Uterine artery embolization is a minimally invasive technique that uses fluoroscopy to identify and include bleeding vessels, suitable for stable patients with ongoing hemorrhage. Although uterine artery embolization preserves fertility, it has been linked to an elevated risk of infertility, preterm delivery, and intrauterine growth restriction. Exploratory laparotomy becomes necessary when conservative measures fail, or the cause of PPH, such as a morbidly adherent placenta, requires surgical intervention. A vertical midline abdominal incision is preferred to enhance surgical access, although preexisting incisions from Cesarean delivery may be reused. Techniques such as bilateral uterine artery ligation (O'Leary sutures) or bilateral utero-ovarian ligament ligation may be employed to decrease uterine pulse pressure. Hypogastric artery ligation, involving a retroperitoneal approach, is rarely performed. Definitive treatment for severe PPH involves hysterectomy, which, while effective, carries risks such as sterility and potential injury to adjacent structures like the bladder and ureters. A supracervical hysterectomy may be considered as a faster alternative with potentially reduced complications.

Hemodynamic Management:

Establishing a robust blood transfusion protocol during the evaluation and treatment of the underlying cause of hemorrhage is critical to patient resuscitation and achieving hemodynamic stability. Severe hemorrhage can lead to acidosis, hypothermia, and coagulopathy, which must be addressed promptly to prevent mortality. Patient monitoring should include heart rate, respiratory rate, oxygen saturation, temperature, blood pressure, and arterial blood gases. In cases of severe PPH, a massive transfusion protocol is often required. This protocol involves administering more than ten units of packed RBCs within 24 hours or four units in one hour, with additional units anticipated. Common transfusion ratios include 1:1:1 (packed RBCs, fresh-frozen plasma, and platelets) and alternatives like 6:4:1 or 4:4:1. Throughout transfusion, lactate and electrolyte levels should be closely monitored to ensure adequate vascular perfusion and address metabolic disturbances. Hyperkalemia, hypocalcemia, hypomagnesemia, and lactic acidosis are common complications. Adverse effects of massive transfusion include transfusion-related lung injury, pulmonary edema, circulatory overload, and blood transfusion reactions. Additional interventions may include cell salvage, recombinant activated factor VII, and vasopressors such as phenylephrine or norepinephrine. Pre-delivery discussions regarding blood transfusion should be conducted with all patients during prenatal care and upon hospital admission. This is particularly important for patients who decline blood products due to personal or religious beliefs, such as Jehovah's Witnesses. Post-stabilization, further transfusion decisions should be guided by clinical assessments and laboratory results [5] [10] [22].

Prognosis:

Postpartum hemorrhage (PPH) remains a significant contributor to maternal and fetal morbidity in the United States; however, the prompt and accurate initiation of treatment has the potential to significantly enhance patient outcomes. Individuals who have experienced PPH in prior deliveries face an elevated risk of recurrence in subsequent childbirths. The adoption of standardized PPH management protocols and the implementation of interprofessional simulation-based training have substantially improved clinical outcomes. Furthermore, heightened coordination among healthcare professionals in addressing PPH has been instrumental in reducing maternal morbidity [10].

Complications

PPH is characterized by substantial blood loss, placing patients at considerable risk of developing hypovolemic shock. A loss exceeding 20% of total blood volume may result in symptoms such as tachycardia, tachypnea, narrowed pulse pressure, and delayed capillary refill, potentially leading to ischemic damage to critical organs, including the liver, brain, heart, and kidneys. Additionally, Sheehan syndrome, also known as postpartum hypopituitarism, represents a serious complication arising from excessive postpartum blood loss. Adverse outcomes associated with PPH management include transfusion-related acute lung injury, infections, pulmonary edema, hemolytic transfusion reactions, intrauterine synechiae, preterm delivery, and infertility.

Consultations

An interprofessional approach is imperative for achieving favorable outcomes in the management of PPH. This comprehensive strategy necessitates collaboration among professionals from diverse specialties, including obstetrics and gynecology, maternal-fetal medicine, general surgery, anesthesiology, hematology, urology, emergency medicine, laboratory personnel, and interventional radiology.

Patient Education

Effective management of PPH prioritizes the prevention of hemorrhage or its escalation. The International Federation of Gynecology and Obstetrics advocates specific proactive measures during all deliveries. These measures include administering oxytocin at a dosage of 10 IU via intravenous or intramuscular routes during or immediately following placental delivery for both vaginal and Cesarean births. When oxytocin is unavailable, alternative uterotonic agents such as ergometrine or methylergometrine may be considered, provided there are no contraindications. Early assessment of uterine tone immediately after delivery is essential for the timely identification of uterine atony. Skilled practitioners may employ controlled cord traction to minimize blood loss during placental delivery; however, this technique is discouraged in settings without adequately trained personnel due to the potential risk of uterine inversion. Sustained uterine massage is not recommended for women who have received prophylactic oxytocin as a preventive measure against PPH.

Identifying patients at high risk of PPH before delivery is critical in reducing morbidity and mortality. Early identification facilitates anticipatory planning concerning delivery mode, timing, specialist consultations, and the delivery environment. Patients with prior Cesarean deliveries should undergo antepartum ultrasound evaluations to detect abnormal placental implantation and determine the optimal delivery strategy. Treating anemia through oral or parenteral iron supplementation is recommended, particularly for individuals with hematocrit levels below 30%. For high-risk patients, especially those unwilling to accept blood transfusions, the use of erythropoietin-stimulating agents in consultation with a hematologist should be considered. The integration of standardized, interprofessional protocols has demonstrated a significant reduction in severe maternal morbidity associated with PPH. These protocols encompass preparedness, prevention, recognition, response, and systematic reporting. The involvement of nursing and anesthesia teams is essential in managing postpartum hemorrhage. Furthermore, simulation-based training exercises have proven effective in improving outcomes by preparing healthcare providers to respond efficiently to PPH scenarios [17][21].

Enhancing Healthcare Team Outcomes

The management of PPH necessitates a well-coordinated interprofessional team, including physicians, technicians, nurses, pharmacists, laboratory personnel, and labor and delivery nurses. The primary objective is rapid resuscitation while identifying and addressing the underlying etiology, often requiring surgical intervention. Ensuring hemodynamic stability is paramount for maintaining organ perfusion. The team ensures adequate intravenous access and conducts direct assessments of blood loss, initiating protocols for the administration of blood products and massive transfusion strategies when necessary. Concurrently, the prompt identification of the cause and initiation of treatment are undertaken. Throughout this process, effective communication and seamless coordination among team members are vital to prevent missed diagnoses and delays in treatment. Resuscitation efforts are ideally conducted in an operating theater environment, enabling anesthesia teams to assist with the repair of complex lacerations, correction of uterine inversion, provision of analgesia, or surgical exploration as required. Clear delineation of responsibilities and well-orchestrated teamwork enhance patient-centered care, improve clinical outcomes, uphold patient safety, and elevate overall team performance in addressing PPH.

Nursing Intervention Protocols:

Effective nursing intervention protocols for managing postpartum hemorrhage (PPH) are essential to ensuring prompt response, patient safety, and optimal outcomes. Nurses play a central role in recognizing early signs of PPH, initiating immediate interventions, and collaborating with interprofessional teams to manage the condition. The following outlines standardized nursing intervention protocols for PPH management, emphasizing preparedness, response, monitoring, and communication.

Preparedness and Early Recognition

Nursing preparedness is critical in minimizing the impact of PPH. Nurses should ensure that all required supplies and medications are readily available in delivery rooms and emergency carts. This includes uterotonic agents such as oxytocin, misoprostol, and methylergonovine, as well as intravenous fluids, blood products, and resuscitation equipment. Regular participation in interprofessional simulation training allows nurses to remain proficient in PPH protocols and improve teamwork during emergencies. Early recognition of PPH begins with continuous monitoring of maternal vital signs and physical assessment. Nurses are trained to identify clinical signs of PPH, including excessive vaginal bleeding, hypotension, tachycardia, uterine atony, and pallor. Accurate quantification of blood loss is a crucial nursing responsibility, achieved through visual estimation or weighing of blood-soaked pads and sponges. Timely documentation of observations ensures clear communication with the healthcare team and supports decision-making.

Initiation of Immediate Interventions

Upon identifying PPH, nurses are responsible for initiating primary interventions to control bleeding and stabilize the patient. Administering uterotonic medications as prescribed is a priority, with oxytocin typically given as a first-line agent. Nurses should perform fundal massage to stimulate uterine contraction and reduce atony, ensuring the procedure is executed with proper technique to avoid further complications. Establishing intravenous (IV) access for fluid resuscitation is a critical step in maintaining hemodynamic stability. Nurses initiate the infusion of crystalloids or colloids as ordered and prepare for the administration of blood products if required. In cases of severe blood loss, massive transfusion protocols may be activated in collaboration with the healthcare team. Nurses must monitor potential transfusion-related reactions, such as fever, chills, or respiratory distress, and respond accordingly.

Continuous Monitoring and Evaluation

Monitoring the patient's clinical status is an ongoing nursing responsibility during PPH management. Frequent assessment of vital signs, urine output, and uterine tone is essential to evaluate the effectiveness of interventions and detect signs of worsening conditions, such as hypovolemic shock or disseminated intravascular coagulation (DIC). Nurses also observe for potential complications, including

infection, thromboembolism, or uterine rupture, and promptly report abnormalities to the attending physician. In addition to physical assessment, nurses ensure the maintenance of effective oxygenation by providing supplemental oxygen via mask or nasal cannula when needed. Close observation of the patient's mental status and level of consciousness is also critical, as changes may indicate decreased cerebral perfusion or other complications.

Communication and Collaboration

Clear and effective communication between nurses and other members of the healthcare team is vital in managing PPH. Nurses act as the central point of information, relaying critical data on the patient's condition, interventions performed, and their outcomes. During emergencies, structured communication tools, such as SBAR (Situation, Background, Assessment, Recommendation), facilitate the transmission of essential information and support timely clinical decisions. Collaboration extends to coordinating care with obstetricians, anesthesiologists, and laboratory personnel. Nurses assist with preparing the patient for surgical interventions, such as uterine artery embolization or hysterectomy, if conservative measures fail to control bleeding. They also ensure timely delivery of blood samples for laboratory analysis, including complete blood count (CBC) and coagulation profiles, to guide transfusion and treatment strategies.

Post-Intervention Care and Education

After stabilizing the patient, nurses focus on post-intervention care to prevent recurrence and promote recovery. They provide comfort measures, such as pain management and emotional support, to address the physical and psychological impact of PPH. Nurses educate patients on recognizing warning signs of recurrent bleeding, maintaining hydration, and following prescribed medications. Discharge planning involves equipping patients with knowledge about follow-up care, including scheduling postpartum visits and managing anemia if present. For patients with a history of PPH, nurses emphasize the importance of informing future care providers about their obstetric history to facilitate early preventive measures in subsequent pregnancies. Nursing intervention protocols for PPH are integral to effective clinical management and the prevention of severe maternal morbidity and mortality. By focusing on preparedness, timely intervention, continuous monitoring, and interprofessional collaboration, nurses ensure that patients receive comprehensive and life-saving care. Moreover, ongoing education and training enable nurses to remain skilled and confident in addressing the complexities of PPH, thereby contributing to better patient outcomes and enhanced safety.

Conclusion:

Postpartum hemorrhage (PPH) remains a leading cause of maternal morbidity and mortality worldwide. The management of PPH is complex and requires a multidisciplinary approach that includes early recognition, accurate blood loss assessment, and effective treatment protocols. Uterine atony is the most common cause of PPH, accounting for a significant proportion of cases. Therefore, early interventions such as uterine massage and administration of uterotonic agents like oxytocin are essential for preventing excessive blood loss. Other causes, including trauma (lacerations or uterine rupture), retained placenta, and coagulation abnormalities, also necessitate immediate attention and specialized care. One of the challenges in managing PPH is the underestimation of blood loss during labor and delivery. Traditional methods for estimating blood loss, such as visual assessment, have been found to be inaccurate, often leading to delayed intervention. In response, quantitative methods for measuring blood loss have been introduced, such as graduated under-buttock drapes and sponge weighing. While these methods offer greater accuracy, they still depend on timely intervention and a comprehensive clinical assessment to achieve optimal outcomes. Nurses play a crucial role in the early detection and management of PPH. By carefully monitoring vital signs, blood loss, and other clinical indicators, nurses can quickly identify signs of hemorrhage and initiate appropriate interventions. Their role extends beyond observation, as they are integral in implementing care protocols, administering medications, and assisting in the stabilization of the patient. Effective PPH management requires a combination of immediate interventions, such as pharmacological treatment and surgical measures, and ongoing surveillance to ensure that any complications are promptly addressed. Additionally, the integration of evidence-based practices and the standardization of care protocols can

significantly reduce the incidence of maternal morbidity and improve outcomes. Ultimately, the timely and effective management of PPH relies on a coordinated team effort, with nursing staff playing an essential part in ensuring maternal safety and recovery.

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نزيف ما بعد الولادة: نظرة عامة على بروتوكولات التشخيص والإدارة والتدخل التمريضي

الخلاصة:

الخلفية: نزيف ما بعد الولادة (PPH) هو مضاعفات توليدية كبيرة مرتبطة باعتلال الأمهات ووفاتهن. يتم تعريفه عادةً على أنه فقدان الدم الذي يتجاوز 500 مل أثناء الولادة المهبليّة أو 1000 مل أثناء الولادة القيصرية. يمكن أن تحدث الحالة بسبب عوامل مسببة مختلفة، مصنفة حسب "4: T 'S' (تكفير الرحم)، والصدمة (التمزقات)، والأنسجة (المشيمة المحتجزة)، والثرومبين (اضطرابات التخثر). يمكن أن يحدث PPH في غضون 24 ساعة من الولادة (الأولية) أو بعد ذلك (الثانوية)، وتتطلب إدارته تدخلاً سريعاً وفعالاً لمنع النتائج الشديدة.

الهدف: الغرض من هذه المقالة هو مراجعة بروتوكولات التشخيص والإدارة والتدخل التمريضي لـ PPH ، مع التركيز على تحسين نتائج صحة الأم من خلال التحديد المبكر والتقييم الدقيق والتدخل في الوقت المناسب.

الأساليب: تم إجراء مراجعة شاملة للأدبيات حول الممارسات الحالية في تشخيص وإدارة PPH ، بما في ذلك البروتوكولات السريرية وأدوات تقييم المخاطر واستراتيجيات الرعاية بين المهنيين. وتم التركيز على التدخلات التمريضية للكشف المبكر والوقاية.

النتائج: تسلط المراجعة الضوء على الدور الحاسم لقياس فقدان الدم الدقيق، واستخدام عوامل توتر الرحم، والرعاية التعاونية في إدارة PPH. التعرف المبكر على المرضى المعرضين للخطر وتنفيذ بروتوكولات الإدارة النشطة، مثل إعطاء الأوكسيتوسين وتديلوك الرحم، يقلل بشكل كبير من حدوث النزيف الحاد.

الاستنتاج: يمكن للتدخل في الوقت المناسب في PPH ، بدعم من العمل الجماعي متعدد التخصصات، أن يحسن بشكل كبير نتائج الأمهات. تلعب الممرضات دوراً محورياً في الكشف المبكر وبدء الرعاية المناسبة. يؤكد المقال على أهمية تدريب المتخصصين في الرعاية الصحية على التقييم الدقيق لفقدان الدم والتعرف على العلامات المبكرة للنزيف.

الكلمات الرئيسية: نزيف ما بعد الولادة، تكفير الرحم، تدخلات التمريض، التوليد، فقدان الدم، اعتلال الأمهات، بروتوكولات الإدارة.