

Nursing in patients with obstetric hemorrhage Enfermería en pacientes con hemorragia obstétrica

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ABSTRACT

The objective was to analyse nursing care in patients with obstetric haemorrhage during the immediate and mid-term puerperium (PPH). The methodological design of this review was observational, cross-sectional and descriptive, using a total of 21 articles directly related to the objective. The first intervention is massage and bimanual uterine compression while awaiting subsequent uterotonic agents. Oxytocin has been effective even in low staff training settings, and misoprostol is less effective (more blood loss occurs than with oxytocin), although its use is less and with less staff training. However, the key issue is to develop standard protocols for multidisciplinary teams to adequately manage primary and secondary PPH in ICU settings; simulation, and in particular the HMS programme, has good results in training frontline staff.

Descriptors: maternal and child health; womens health; maternal welfare. (Source: UNESCO Thesaurus).

RESUMEN

Se tuvo por objetivo de analizar los cuidados de enfermería en pacientes con hemorragia obstétrica durante el puerperio inmediato y puerperio mediato (HPP). El diseño metodológico de esta revisión documental fue observacional, transversal y descriptivo, se empleó un total de 21 artículos con relación directa al objetivo. La primera intervención es el masaje y una compresión uterina bimanual en caso de espera de los consiguientes agentes uteróticos. La oxitocina ha sido eficaz incluso en contextos de baja capacitación del personal, y misoprostol es menos eficaz (se presenta mayor pérdida de sangre que con oxitocina), aunque su uso es menor y con menor capacitación del personal. Con todo, lo fundamental es elaborar protocolos estándares para equipos multidisciplinarios que permitan manejar adecuadamente la HPP primaria y secundaria en contextos UCI; la simulación y, en particular, el programa HMS, tiene buenos resultados en la capacitación del personal de primera línea.

Descriptores: salud materno-infantil; salud de la mujer; bienestar de la madre. (Fuente: Tesoro UNESCO).

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Research articles section

INTRODUCTION

In general, evidence shows that maternal deaths are more prevalent in settings where adequate protocols are not in place or management is not timely; therefore, proper triage can allow for appropriate targeting of available resources in ICU settings to improve outcomes (Giblin *et al.* 2021), (Koukoubanis *et al.* 2021). Given the above, nursing care in these cases is of enormous relevance; improvements in screening and care procedures are effective when properly administered, so that care bundles are useful tools for the appropriate management of these patients when they have adequate adherence (Hannola *et al.* 2021).

Therefore, decision making for obstetric haemorrhage in the immediate and mid-puerperium (IPP) is critical for referral or transfer of patients, and standardised strategies and care packages have been proposed for timely and appropriate management. The Preparedness, Recognition, Response and Reporting approach is from AIM, and proposes: i) for preparedness, the haemorrhage cart, massive transfusion protocol and training of the professional team should be taken into account; ii) in recognition, risk assessment should consider actions to measure blood or adjust the estimate; iii) response should consider standardisation and training of the team; and iv) reporting includes all actions aimed at learning (Atallah, & Goffman 2020). The CMQCC package has a similar approach, with good levels of efficacy in blood product reduction and coagulation reduction (Eppes *et al.* 2021).

Likewise, (Triksa & Singh, 2018), state that there are two central components to the management of obstetric haemorrhage: i) initial resuscitation and management of hypovolemic shock. Active management is among the most recommended, and involves administration of uterotonics after delivery, placental expulsion with controlled cord traction and uterine massage (Rangel *et al.* 2019), (Güngördük *et al.* 2018).

When uterine atony occurs, the first intervention is massage and bimanual uterine compression while awaiting subsequent uterotonic agents (Anger *et al.* 2021). Of these, the most commonly recommended is oxytocin and, if unavailable, misoprostol; the latter has been shown to be appropriate in resource-poor countries because oxytocin is less accessible (Koukoubanis *et al.* 2021). Oxytocin has been effective even in settings with low staff training, and misoprostol is less effective (more blood loss occurs than with oxytocin), although its use is lower and with less staff training. Regarding the route of administration of misoprostol, sublingual administration is the most effective, but has greater adverse effects, so rectal administration is better tolerated (Henríquez *et al.* 2018).

When refractoriness occurs, prostaglandin administration is recommended (Henríquez *et al.* 2018). On the other hand, tranexamic acid has been shown to have a positive effect in reducing bleeding, especially in caesarean sections, but adverse effects may occur (Güngördük *et al.* 2018). Another documented intervention is lower abdominal cooling as a prophylactic, non-pharmacological treatment, but there is no evidence that it reduces bleeding (Masuzawa *et al.* 2017).

On the other hand, if this more conservative management is unsuccessful, more invasive management, such as surgical or radiological, is available (Henríquez *et al.* 2018). Uterine tamponade is one of the most indicated treatments, widely suggested, including by the World Health Organisation (WHO) and FIGO (International Federation of Gynaecologists and Obstetricians) (Anger *et al.* 2021).

This approach is appropriate, as many studies report its effectiveness, and it is particularly useful in resource-poor countries because of the use of low-cost instruments (Henríquez *et al.* 2018); however, it is not always associated with lower case fatality or reduced need for surgery: studies in high-resource countries are positive (Colucci *et al.* 2020), but not in low-resource ones, therefore, (Anger *et al.* 2021), identified that there is no increased risk of infection with the use of uterine plugs (UBT), although there may be increased pain.

The NASG (non-pneumatic anti-shock garment) device allows circumferential compression to be applied, thereby decreasing blood flow and improving blood supply to other organs, improving symptoms of shock (Yeshitila *et al.* 2021). The last recommended intervention, although not



necessarily in temporal terms, is hysterectomy; it should be performed when there is no other alternative, however, timely execution should be considered to avoid mortality. Early interventions make an important contribution to avoiding hysterectomies. For resuscitation purposes, the administration of crystalloids and colloids is essential, followed by transfusion of blood products; however, care must be taken in this administration, as it can cause coagulopathies (Henríquez *et al.* 2018), (Colucci *et al.* 2020), (Koukoubanis *et al.* 2021).

Based on the above, the aim is to analyse nursing care in patients with obstetric haemorrhage during the immediate and mediate puerperium (IPP).

METHOD

The methodological design of this review was observational, cross-sectional and descriptive (Aguilera-Eguía, 2014), and corresponds to a systematic review that aims to identify the most appropriate nursing care for the management of patients with obstetric haemorrhage during the immediate and mid-puerperium.

For its development, we followed the suggestions of the PRISMA guidelines (Page *et al.* 2021) for qualitative systematic reviews, i.e. not corresponding to meta-analyses. Thus, we selected key terms (MeSH and free descriptors) derived from the research question previously posed: what are the most appropriate nursing care for the management of patients with obstetric haemorrhage during the immediate and mediate puerperium.

The terms selected are: obstetrics haemorrhage, postpartum haemorrhage, primary postpartum haemorrhage, secondary postpartum haemorrhage, late postpartum haemorrhage, delayed postpartum haemorrhage, nursing care. For the search of articles, the electronic databases PubMed, Science Direct and BVS were selected, in which the terms were entered in a search strategy to be defined using Boolean operators to extend their scope (Quispe *et al.* 2021).

The criteria for inclusion of documents are articles published since 2017, which are original articles, systematic reviews, in English or Spanish, and which have open access text available.

On the other hand, the exclusion criteria are publications prior to 2017, grey literature, editorials or books, in languages other than English or Spanish, without full text or restricted access. For the final selection, studies that did not address the management of postpartum haemorrhage (PPH), that analysed only preventive measures or that analysed medical interventions (not related to nursing) were also discarded.

For the documentary analysis the following articles were implemented in direct relation to the research objective:

RCT = 9 articles

RB = 10 articles

OBS = 2 articles

For a total of 21 articles directly related to the objective and 5 indirectly, used in the theoretical and methodological support for their contribution to the research work. The documentary population is 26 research papers.

Note: randomised clinical trials (RCT), literature reviews (RB), observational studies (OBS). Presented in table 1.

The selected documents were downloaded and analysed by extracting the relevant data in a matrix in MS Excel 2016.

ANALYSIS OF THE RESULTS

A descriptive presentation of the results is made, in the first order, in a summary table with the analysed research, in the second order; an interpretation of themes related to the research objective:

Table 1: Database for article synthesis.

Autores	Tipo	Objetivo	Variables o cuidados analizados	Cuidado o variable recomendada	Conclusiones del estudio
Giblin <i>et al.</i> (2021)	ECA	Evaluar el efecto del dispositivo CRADLE VSA sobre la mortalidad y la morbilidad maternas en entornos de bajos recursos.	CRADLE / Atención estándar	CRADLE	Las remisiones por HPP se redujeron luego de la implementación de CRADLE sin que aumentara la muerte materna o la histerectomía de emergencia. Esto demuestra el beneficio potencial del índice de shock en las vías de manejo de la hemorragia obstétrica.
Koukouban <i>is et al.</i> (2021)	RB	Revisar críticamente las indicaciones de ingreso de pacientes obstétricas y posparto a las UCC, y resaltar los aspectos únicos del manejo de las pacientes con complicaciones obstétricas que ingresan a las UCC.	Seguimiento y otras observaciones	Algoritmo de diagnóstico y atención de equipo multidisciplinario	El establecimiento de un algoritmo de diagnóstico y atención basado en la contribución de un equipo multidisciplinario es de vital importancia para ayudar a determinar qué pacientes requerirán cuidados intensivos.
Hannola <i>et al.</i> (2021)	OBS	Validar la precisión del sistema obstétrico de alerta temprana y diferentes desencadenantes fisiológicos para predecir la morbilidad en la sala de posparto en mujeres de alto riesgo.	Sistema de alerta temprana	Predicción para hemorragia baja	La sensibilidad del sistema obstétrico de alerta temprana varió según el tipo de morbilidad. La mayor sensibilidad y valor predictivo positivo se dieron en la preeclampsia. La presión arterial sistólica y diastólica y la frecuencia cardíaca fueron los parámetros fisiológicos más fuertes para predecir la morbilidad.
Atallah, & Goffman (2020)	RB	Caracterizar HPP	Clínicos / no clínicos	n.a.	La mejora del rendimiento y la mitigación del riesgo HPP requerirán una estrecha coordinación con los médicos y los equipos de mejora de la calidad. Debemos establecer enfoques estandarizados para el diagnóstico y el tratamiento a través de la capacitación y simulación de equipos que aborden los desafíos clínicos y los no clínicos.
Eppes <i>et al.</i> (2021)	RB	Revisar la evidencia que respalda la implementación de una variedad de herramientas y paquetes de atención.	Intervenciones y manejo	Paquete de intervención CMQCC	Los paquetes de HPP tienen resultados prometedores generales en la reducción de MMM. Las tasas de mejora observadas en algunos hospitales o estados parecen estar muy relacionadas con el cumplimiento de los componentes del paquete y la adopción de factores como la tutoría, el apoyo de los miembros del equipo de calidad y la simulación.

Trikha & Singh (2018).	RB	Caracterizar HPP	Uterotónicos / radiología / quirúrgico / cristaloides y coloides / rescate celular / seguimiento / causas	n.a.	El retraso en el reconocimiento y manejo de la hemorragia obstétrica puede resultar en morbilidad materna severa y mortalidad materna prevenible. La reanimación rápida, la identificación de la causa y el tratamiento posterior son esenciales para mejorar los resultados.
Güngördük et al. (2018)	RB	Presentar opinión actual y protocolos para AMTSL.	Manejo activo de la tercera etapa del trabajo de parto (AMTSL)	AMTSL (no mejora letalidad)	El manejo activo del TSL disminuye el riesgo de sangrado posparto de más de 1000 mL. Se deben explicar a las mujeres embarazadas los posibles riesgos y beneficios del manejo activo y se debe obtener el consentimiento informado. La administración de TA, como medicamento adicional para mujeres embarazadas cuyo TSL se está controlando activamente, disminuye tanto la cantidad de pérdida de sangre como la incidencia de HPP.
Rangel et al. (2019)	RB	Identificar contribución de las tecnologías sanitarias utilizadas para la prevención y el control de la HPP.	Tecnologías	Tecnología	Los niveles de evidencia confirman la contribución de las tecnologías para prevenir y controlar la HPP. Las enfermeras clínicas deben brindar cuidados con base científica y desarrollar protocolos que aborden las acciones de atención de enfermería.
Anger et al. (2021)	ECA	Determinar el riesgo de infección posparto y el aumento del dolor asociado con el uso de taponamiento con balón uterino (UBT) con condón y catéter entre mujeres diagnosticadas con HPP en tres países de ingresos bajos y medianos (LMIC).	Riesgo de infección / dolor y percepción de mujeres	UBT (no aumenta infección, dolor).	UBT no aumentó el riesgo de infección posparto entre esta población. Las mujeres que reciben UBT pueden experimentar mayores grados de dolor en comparación con las mujeres que no reciben UBT.
Henríquez et al. (2018)	RB	Sistematizar conocimiento en torno al manejo de la HPP	Uterotónicos / radiología / quirúrgico / cristaloides y coloides / rescate celular / seguimiento / causas	Índice de shock y puntuaciones de alerta tempranas.	El reconocimiento temprano de las mujeres con alto riesgo de resultados adversos debido a la hemorragia posparto se puede lograr adaptando la definición de hemorragia posparto grave y el uso de herramientas clínicas como el índice de shock y las puntuaciones de alerta temprana.
Kodan et al. (2020)	ECA	Estudiar la prevalencia, los indicadores de riesgo, las causas y el manejo de la HPP para identificar oportunidades para la reducción de la HPP.	Prevalencia, los indicadores de riesgo, las causas y el manejo de la HPP	Manejo activo de la tercera etapa del trabajo de parto	La medición inconsistente de la pérdida de sangre, las características maternas y perinatales variadas y el cumplimiento variable de las pautas contribuyeron a la variación de la prevalencia interhospitalaria. La reducción de la HPP se puede lograr a través de la prevención practicando el manejo activo de la tercera etapa del trabajo de parto y considerando los factores de riesgo, el reconocimiento temprano mediante la medición objetiva y consistente de la

					pérdida de sangre y el tratamiento oportuno mediante la administración adecuada de oxitocina y ácido tranexámico de acuerdo con lineamientos nacionales.
Masuzawa <i>et al.</i> (2017)	ECA	Evaluar la efectividad del enfriamiento de la parte inferior del abdomen para reducir la pérdida de sangre posparto en comparación con ninguna intervención.	Enfriamiento de la parte inferior del abdomen	No intervención	En comparación con el grupo de control, el enfriamiento de la parte inferior del abdomen no redujo la cantidad total de sangre perdida hasta 2 horas después del parto.
Colucci <i>et al.</i> (2020)	ECA	Evaluación de protocolo de manejo estandarizado	Protocolo de manejo estandarizado	Implementación del protocolo	En pacientes con HPP tratadas con este protocolo de manejo estandarizado, se observa un menor requerimiento de hemoderivados lábiles y menor necesidad de proceder a histerectomía posparto de emergencia.
Yeshitila <i>et al.</i> (2021)	OBS	Evaluar la utilización de prenda de choque no neumática para controlar las complicaciones de la HPP y los factores asociados.	Prenda no neumática antichoque	n.a.	Cerca de la mitad de los proveedores usan prendas antichoque no neumáticas para prevenir complicaciones de HPP. Las estrategias deben centrarse en fortalecer la capacitación en el servicio y el desarrollo profesional continuo, llenando así la brecha de conocimiento y actitud entre los proveedores de atención obstétrica.
Evans <i>et al.</i> (2018).	ECA	Determinar si la práctica deliberada de habilidades a través de PAL después de la capacitación en el sitio mejoró el desempeño del proveedor.	Capacitación con base en simulación	Capacitación con simulación	Los resultados muestran habilidades mejoradas y sostenidas durante las pruebas de AMTSL y una mejor prestación de atención a través de la observación clínica.
Hanson <i>et al.</i> (2021).	ECA	Evaluar el efecto de la capacitación Helping Mothers Survive Bleeding after Birth (HMS) sobre las tasas de casi accidentes y de letalidad de la HPP en Uganda.	HMS	HMS	La intervención redujo los casos de HPP grave mientras que la letalidad no mejoró, lo que sugiere que esta capacitación básica debe complementarse con medidas adicionales para una reducción sostenida de la mortalidad.
Alwy <i>et al.</i> (2020).	ECA	Evaluar el efecto de Ayudar a las madres a sobrevivir el sangrado después del parto en el conocimiento y las habilidades de los trabajadores de la salud y si dicho efecto varía según las características de los trabajadores de la salud.	HSM	HSM	Se observa potencial de la capacitación Helping Mothers Survive Bleeding after Birth para aumentar el conocimiento y las habilidades sobre HPP entre todos los grupos profesionales. El personal auxiliar fue el que más se benefició de la capacitación, pero también mostró una mayor disminución de sus habilidades a los 10 meses. Se destaca la importancia de desagregar el conocimiento y las habilidades por características de los trabajadores de la salud.

Bogren <i>et al.</i> (2021).	RB	Sintetizar la investigación disponible sobre HMS y su impacto en las habilidades de los proveedores de atención y los resultados de salud materna.	HMS	HMS	El programa de aprendizaje HMS-BAB tiene el potencial de aumentar la competencia entre los proveedores de atención y mejorar los resultados de salud materna en entornos de bajos ingresos.
Amod & Brysiewicz (2017).	EC	desarrollar, implementar y evaluar un paquete de aprendizaje de simulación (SLP) sobre HPP para estudiantes de partería de pregrado utilizando simulación.	Paquete de aprendizaje simulado	Simulación	Un paquete de aprendizaje de simulación, que utiliza simulación de alta fidelidad, puede ser un método innovador e interactivo para enseñar emergencias de partería.
(Lazzerini <i>et al.</i> 2018)	RB	Sintetizar la evidencia sobre la efectividad del NMCR en la QoC (mejora de calidad en la atención) y los resultados de salud materna y perinatal en países de bajos y medianos ingresos (LMIC).	Atención estandarizada	Enfoque ciclo NMCR	Los formuladores de políticas pueden considerar implementar el enfoque del ciclo NMCR materno entre las estrategias destinadas a mejorar la QoC y reducir la mortalidad y morbilidad materna en LMIC.
Liu <i>et al.</i> (2017).	RB	Explorar la relación de indicadores de evaluación de HPP con la pérdida de sangre como una señal de advertencia temprana para identificar la HPP potencial para una intervención inmediata.	Frecuencia cardíaca / presión arterial / control de placenta / hemoglobina , etc.	Evidencia no concluyente	La asociación entre la pérdida de sangre y los síntomas clínicos no es concluyente en base a los presentes estudios, y no se pudieron formular puntos de corte específicos para determinar la cantidad aproximada de pérdida de sangre. Sin embargo, algunos puntos de corte pueden considerarse señales de alerta de la necesidad de intervenciones avanzadas, como la frecuencia cardíaca, el tiempo de protrombina y la implantación de placenta.
Iwaola <i>et al.</i> (2021)	ECA	Evaluar la influencia de las intervenciones de enfermería para mejorar la concientización de las parteras sobre el uso de misoprostol en el manejo de la HPP en establecimientos de salud seleccionados.	Intervenciones de enfermería	Intervención educativa para uso de misoprostol	La intervención educativa con misoprostol fue efectiva para mejorar el conocimiento y uso del misoprostol. Por lo tanto, las unidades de educación continua en los hospitales deben incluir capacitación periódica de parteras sobre el uso de misoprostol en la prevención de la HPP.

Note: Randomised clinical trials (RCTs), literature reviews (BRs), observational studies (OBS).
Source: Own elaboration.

PPH prevention and management training programmes and packages

HMS is a training approach for health care workers to conduct early third stage of labour management (Hanson *et al.* 2021); it has been shown to improve the competencies of frontline health care workers in resource-limited settings (Eppes *et al.* 2021), (Evans *et al.* 2018), (Alwy *et al.* 2020), (Bogren *et al.* 2021); this package has been effective in reducing cases of severe PPH, however, it is not necessarily associated with reduced case fatality. There are several training packages for frontline staff in PPH management that use simulated practice; these have been

documented as effective in subsequent performance and practitioner knowledge (Amod & Brysiewicz, 2017).

MEWT (Maternal Early Warning Trigger); MEOWS (modified obstetric early warning system) or others are appropriate strategies to detect early warnings (Giblin et al. 2021). In the case of PPH, there is a need for constant monitoring and alerting systems. The CRADLE device allows effective monitoring of vital signs to identify hypovolemic shock, based on a traffic light warning system, with adequate predictive value according to the evidence, which can allow frontline staff to make quick and appropriate decisions even when they lack the expertise, as is often the case in resource-poor emergency settings (Eppes et al. 2021). Nevertheless, scoring systems are appropriate and have been shown to have adequate predictive capacity for resource-poor settings (Henríquez et al. 2018).

Approaches such as NMCR (Maternal Near Miss Case Review), driven by the UN, are general quality of care improvement programmes for the prevention of maternal death, and have been shown to be effective in reducing PPH. Also effective in improving staff training has been the international AIP programme and risk management and alerting through ALARM (Lazzerini et al. 2018).

The OEWS alert system has been shown to be effective in obstetric emergencies, but not particularly for PPH (Hannola et al. 2021); no direct relationship between clinical indicators and blood loss has been demonstrated, so it is difficult to establish cut-off points (Liu et al. 2017).

Improved standards for PPH nursing management

The Pathfinder international teaching package is a package for nurses and midwives that accounts for the best measures for uterotonic administration and management of PPH (Rangel et al. 2019). The pharmacological approach has acceptable evidence of efficacy in the management of both primary and secondary PPH (Iwaola et al. 2021).

Active management of third stage labour has been shown to be effective by a large number of studies, so its use in conjunction with the pharmacological approach should be properly assessed and designed around standardised protocols (Rangel et al. 2019). An immediate clinical management plan according to (Tripathi & Singh, 2018). should consider:

1. Identify early warning signs and non-invasive monitoring.
2. Administration of oxygen with face mask.
3. Identify the appropriate medical personnel for the emergency and call them in a timely manner.
4. Provision of intravenous oxytocin (10-30 IU).
5. Send blood samples (4-6 units) or plasma samples (4-6 units) for cross-matching.
6. Start a rapid infusion of warm saline and replace with red blood cells as soon as they become available.
7. Provide a combination of 1.5 to 2.0l crystalloids and 1 to 1.5 l colloids until blood is available.
8. Send blood for full profile, renal function and coagulation parameters.
9. Avoid hypothermia with blood warmers and blankets.
10. O Rh blood can be used if the patient's blood type is not available.
11. Aim to maintain normovolaemia, monitor haematocrit, urine output and haemodynamics.
12. Early treatment of coagulopathy if present.
13. Plan early for surgical approach in case conservative or pharmacological approach is unsuccessful.
14. Identify the cause of PPH to determine further management.

On the other hand, as appropriate nursing management, according to (Colucci et al. 2020), (Henríquez et al. 2018), the following process is suggested:



1. Prevention: adequate training and establishment of protocols for staff and multidisciplinary teams.
2. Active management of third stage of labour:
 - a. Uterotonics: intravenous oxytocin in doses of 10-30 IU (every 2-3 h and 8 and 12 h, respectively) / intramuscular oxytocin in doses of 5-10 IU immediately after birth. Alternatively, misoprostol 400-600 µg sublingually.
 - b. Sustained cord traction.
 - c. Fundal massage every 15 min. for 2 hours after delivery.
3. Monitoring: evaluation of the following parameters on an ongoing basis.
 - a. Heart rate.
 - b. Blood pressure.
 - c. Skin (pallor, cold skin, sweating, etc.).
 - d. urine output
 - e. metabolic acidosis
 - f. Laboratory abnormalities.
 - g. Fibrinogen.
 - h. Lactate.
 - i. Shock index.

This information makes it possible to recommend the design of protocols based on active management; this would improve the results of childbirth in terms of maternal mortality, since, in most cases, mortality is associated with inadequate care.

CONCLUSIONS

The first intervention is massage and bimanual uterine compression while awaiting subsequent uterotonic agents. Oxytocin has been effective even in low staff training settings, and misoprostol is less effective (more blood loss occurs than with oxytocin), although its use is less and with less staff training. Regarding the route of administration of misoprostol, sublingual is the most effective, but has more adverse effects, so rectal administration is better tolerated. However, the key issue is to develop standard protocols for multidisciplinary teams to adequately manage primary and secondary PPH in ICU settings; simulation, and in particular the HMS programme, has good results in training frontline staff in resource-limited countries.

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CONFLICT OF INTEREST

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