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Original Research Article

The Role of Blood Transfusion in the Management of Obstetric Emergencies in the Gynaecological-Obstetrics department of the Reference Health Center of Commune I

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Abstract: It is a prospective and cross-sectional study, carried out at the Gynecological-Obstetrics department of the reference health center of commune I "Dr. Koniba PLEAH" from January 1, 2020 to December 31, 2020, i.e. 12 months. The main objective was to contribute to the study of the place of blood transfusion in the management of obstetric emergencies. During the study period, we recorded 480 cases of obstetric emergencies, of which 160 cases were emergency blood transfusions, i.e. 33.33%. Postpartum haemorrhage (PPH) was the first indication for blood transfusion with a frequency of 28.8% of patients. Management was based on: Blood transfusion with diversified PSLs (whole blood, CGR, PFC). MVA, salpingectomy, caesarean section, hysterorrhaphy, and hysterectomy.

Keywords: Obstetric emergencies, blood transfusion.

INTRODUCTION

Blood transfusion (TS) is the transfer of blood or blood components from one individual (donor) to another (recipient). It can be life-saving and health services have a responsibility to ensure that there is an adequate supply of safe blood and that it is used judiciously [1]. It saves many lives during emergency medical care. The logic of selective transfusion is to offer each blood product in the most appropriate form in terms of purity and concentration on the basis of a principle which is: "the patient should receive only the blood component he needs" [2].

The gynaecology and obstetrics department is one of the departments where the demand for blood is one of the highest, due to: haemorrhages, scheduled interventions in particular myomectomies. Obstetric haemorrhage is and remains the major cause, if not the leading cause of mortality and serious morbidity, with 80% of maternal deaths worldwide resulting directly from complications of pregnancy, childbirth and postpartum [3]. A quarter of all these deaths are due to severe haemorrhage during the postpartum period, i.e. 25% worldwide [4]. According to a study carried out by Azanhoué in 2008 [5] at the gynaecology and obstetrics department at the Mother and Children Lagoon Hospital (HOMEL) in Cotonou, out of 524 admissions to the gynaecology and obstetrics department, the total number of transfused patients was 137, i.e. a rate of 26.14%. The maternal mortality rate is 325 per 100,000 live births according to the results of the DHS VI in Mali in 2018 [6]. A study on the place of blood transfusion in the management of obstetric emergencies was carried out by

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NIENTAO D in 2020 in the gynecology and obstetrics department of the CSRéf of Fana, revealing a frequency of 26.73% [7].

OBJECTIVES

To study the role of blood transfusion in the management of obstetric emergencies.

MATERIALS AND METHOD

This was a prospective and cross-sectional study on blood transfusion cases that took place in the maternity ward of the reference health center of Commune I of the district of Bamako from January 1 to December 31, 2020, i.e. a duration of 12 months.

Inclusion criteria: All pregnant and/or immediate postpartum women admitted to emergency obstetric care and who have received a blood transfusion.

Non-inclusion criteria: These included all pregnant and/or immediate postpartum women admitted on an outpatient basis who did not receive a blood transfusion.

Sample size: All women who met the inclusion criterion were selected during our study as a sample of 160 pregnant and/or immediate postpartum women admitted to obstetric emergencies.

The variables studied: Age, occupation, method of admission, reason for admission, gestation, parity, general condition, conjunctiva, sign of decompensation, blood product, Hb level, number of units of blood.

Data were collected from: Survey forms, the blood transfusion register, the MVA register, patient records. Data were entered with Microsoft Word 2013 and Microsoft Excel 2013 and analyzed on a computer using SPSS version 22 software.

Ethical aspects: Respect for medical ethics has striven to respect the following aspects: Free and informed consent of the patients surveyed, Respect for the human person in his or her opinions, Guarantee of confidentiality and anonymity.

RESULTS

Frequency of blood transfusion:

During our study, we recorded 480 cases of obstetric emergencies in the maternity ward, of which 160 cases involved blood transfusion, i.e. 33.33% of obstetric emergencies.

Socio-demographic profile of patients:

Table I: Distribution of Transfused Patients by Age

Age	Actual	Frequency
15-19	30	18,7
20-24	22	13,7
25-29	**42**	**26,3**
30-34	20	12,5
35-39	19	11,9
40-49	27	16,9
Total	160	100,0

Transfused patients between the ages of 25 and 29 years were in the majority at 26.3% and the mean age was 27±3 years. The age extremes ranged from 15 to 49 years.

Table II: Distribution of Transfused Patients by Occupation

Profession	Actual	Frequency
Official	05	3,1
Pupil	07	4,4
Merchant	10	6,3
Saleswoman	13	8,1
Housewife	**124**	**77,5**
Domestic helper	01	0,6
Total	160	100,0

Housewives were the most represented with 77.5%.

Table III: Distribution of Transfused Patients by Mode of Admission

Method of admission	Actual	Frequency
Came of its own accord	17	10,6
Reference	46	28,7
Evacuations	**97**	**60,7**
Total	160	100,0

The majority of transfused patients were **evacuated**, i.e. **60.7%.**

Table IVV: Distribution of transfused patients by reason for consultation

Reason for consultation	Actual	Frequency
Postpartum hemorrhage (PPH)	34	21,3
Bleeding during pregnancy	**57**	**35,6**
Anemic syndrome on pregnancy	05	3,1
Postpartum Anemia Syndrome	09	5,6
Bleeding on amenorrhea	07	4,4
CUD on pregnancy	17	10,6
Pelvic pains	10	6,3
Other*	21	13,1
Total	160	100,0

Bleeding during pregnancy was the most frequent reason for consultation with 35.6%, followed by PPH with 21.3%.
Other*: hypertension, scarred uterus, large multiparous, excessive HU, height less than 1m50.

Table V: Distribution of transfused patients according to gestation

Gesture	Actual	Frequency
Primigrate	**47**	**29,4**
Paucigeste	20	12,5
Multi-gesture	**57**	**35,6**
Great multi-gesture	36	22,5
Total	160	100,0

In our sample, multigestures were the most represented with 35.6% of cases, followed by primigestes with 29.4%.

Table VI: Distribution of transfused patients by parity

Parity	Actual	Frequency
Nulliparous	**37**	**23,1**
Primiparus	21	13,1
Pauciparous	16	10,0
Multiparous	**52**	**32,5**
Large multiparous	34	21,3
Total	160	100,0

The majority of transfused patients were multiparous with a frequency of 32.5%, followed by nulliparous with 23.1%.

3. Feature of Clinical Examination:

Table V: Distribution of transfused patients according to general condition

General condition	Actual	Frequency
Good	25	15,6
Passable	54	33,8
Altered	**81**	**50,6**
Total	160	100,0

Transfused patients had an altered general condition in 50.6% of cases.

Table VIIII: Distribution of transfused patients according to conjunctival examination

Conjunctiva	Actual	Frequency
Pale	**101**	**63,1**
Colorful	59	36,9
Total	160	100,0

Conjunctival pallor was present in 63.1% of cases.

Table IVII: Distribution of transfused patients according to signs of decompensation

Signs of decompensations	Actual	Frequency
Yes	**111**	**69,4**
No	49	30,6
Total	160	100,0

Signs of decompensation (dizziness, dyspnea, palpitation, hypotension) were present in 69.4% of cases.

Table VIII: Distribution of transfused patients according to the number of prenatal consultations (PNCs) performed

Number of NPCs	Actual	Frequency
0	**97**	**60,6**
1	16	10,0
2	28	17,5
3 and up	19	11,9
Total	160	100,0

All 60.6% of patients did not perform NPC.

Table IX: Distribution of transfused patients by pre-transfusion Hb level

Baseline Hb level	Actual	Frequency
≤3	16	10,0
4-6	**96**	**60,0**
7-8	28	17,5
8-9	13	08,1
≥9	07	04,4
Total	160	100,0

The majority of transfused patients had a haemoglobin level between 4 and 6 g/dl or 60.0%.

6. Characteristics of transfused products:

Table X: Coverage of the need for blood bags

Pockets	Actual	Frequency
Served	300	91,18
Not Served	**29**	**8,82**
Total	329	100,0

There were 29 unserved pockets, or 8.82%.

8. Indication for blood transfusion:

Table XII: Distribution of transfused patients according to diagnosis

Diagnosis Retained	Staff	Frequency
Antepartum hemorrhage (HRP and PP)	25	15,6
Immediate postpartum hemorrhage (IPH)	**46**	**28,8**
Severe anemia in pregnancy (ASG)	37	23,1
Severe postpartum anemia (PSA)	11	6,8
Malarial anemia	10	6,3
Uterine rupture (UK)	14	8,8
Hemorrhagic abortion	05	3,1
Ruptured ectopic pregnancy (GEU)	08	5,0
Molar abortion	04	2,5
Total	160	100,0

Immediate postpartum hemorrhage (IPH) was the main indication for blood transfusion with 28.8% of cases.

9. Complications during or after transfusion

Table XIIIV: Distribution of transfused patients according to transfusion complications

Complication Transfusion	Actual	Frequency
None	155	96,9
Hives	**03**	**1,9**
Shiver	**02**	**1,2**
Total	160	100,0

3.1 % of patients experienced transfusion-related complications.

Table XIIIV: Distribution of transfused patients according to transfusion-related complications

Complication Post-transfusion	Actual	Frequency
No	156	97,5
Malaria	**4**	**2,5**
Total	160	100,0

Patients presented complications (malaria) in 2.5% of cases.

10. Maternal Prognosis After Blood Transfusion

Table XIV: Distribution of Transfused Patients by Prognosis After Blood Transfusion

Prognosis	Actual	Frequency
Cured	**146**	**91,2**
Deceased	07	4,4
Evacuated	04	2,5
Discharge against medical advice	03	1,9
Total	160	100,0

The majority of transfused patients were discharged from hospital (cured), i.e. 91.2%.

Table XV: Distribution of Transfused Patients by Cause of Death

Cause of Death	Actual	Frequency
HPPI	**3**	**42,8**
HRP	2	28,6
RU	1	14,3
ASG	1	14,3
Total	7	100,0

Immediate postpartum haemorrhage was the most common cause of death with 42.8%.

DISCUSSION AND COMMENTS

Frequency of blood transfusion:

During the study period, we recorded 480 cases of obstetric emergencies, of which 160 cases received an emergency blood transfusion (33.33%).

This result is higher than those of GOITA A in 2018 at the CSRéf of Commune V of Bamako (Mali) and SAMAKE M in 2008 at the CSRéf of Commune V of Bamako (Mali) and significantly lower than that of DIARRA M in 2020 at the CSRéf CI of Bamako (Mali) which had found respectively 13.23%; 14.69% and 39.07% [8-10].

Socio-demographic characteristics:

Age: Our study showed that the 25-29 age group was the most represented with 26.3% and an average age of 27± 3 years with extremes of 15-49 years.

This same trend was observed in the study carried out by MAIGA A in 2020 at the CSRéf in San (Mali) and SIDIBE A in 2021 at the hospital in Gao (Mali) which found 38.98% for the age of 20-29 years and 50.8% for the age of 20-29 years respectively [11, 12].

This age group of 25-29 years corresponds to the period when genital activity is most increased.

Occupation: In our study, housewives were the most frequent with 77.5%.

Our rate is significantly lower than those reported by MAIGA A in 2020 at the CSRéf in San (Mali) and SIDIBE A in 2021 at the hospital in Gao (Mali) which reported 98.3% and 95.8% respectively [11, 12]. This could be explained by the low literacy rate of these women, who are unaware of the danger signs of pregnancy and postpartum as well as their late use of health care.

Mode of admission: Evacuation was the most common mode of admission in our series, 60.7% versus 10.6% of self-imposed admissions. In the SIDIBE A study in 2021 at the hospital of Gao (Mali) which had obtained 24.1% of patients evacuated against 36.7% who came on their own [12].

This could be explained by the non-completion of prenatal consultations by some of our patients, most of whom were unaware of and neglected the signs of danger. This study allowed us to deplore certain inadequacies in evacuations such as: poor performance of the partogram, failure to take the venous line, absence of ABO/Rh blood grouping, lack of financial means of patients.

Reason for Admission: Our study found that bleeding during pregnancy was the leading reason for admission at 35.6%. MAIGA A in 2020 at the CSRéf in San (Mali) and SIDIBE A in 2021 at the hospital in Gao (Mali) had revealed the same reason for admission as us, i.e. 32.2% and 22.5% [11, 12].

Gestation: Multigestures and primigestes accounted for 35.6% and 29.4% respectively. On the other hand, we found that this result differs from that of DIARRA M in 2020 at the CSRéf CI in Bamako (Mali), which reported a rate of 35.4% represented by paucigestes [10].

Parity: Multiparous and nulliparous women accounted for 32.5% and 23.1% of cases in our study, respectively. This result is different from that of OUATTARA C in 2016 at the Souro Sanou University Hospital in Bobo-Dioulasso (BURKINA-FASO) where pauciparous and nulliparous women accounted for 28.8% and 26.2% respectively [13].

Analysis of the clinical examination of the patients:
General examination: Clinical examination at admission revealed hemodynamic instability such as: hypotension, dizziness, dyspnea in 69.4% of patients.

Examination of the conjunctiva: Our study found that 63.1% of patients had conjunctival pallor at admission. This could explain the need for emergency blood transfusion.

Pregnancy History:
The number of NPCs: In our study, we found that 99 out of 160 patients, or 60.6%, did not have any antenatal consultation. This result is similar to those of NIENTAO D in 2020 at the CSRéf de Fana (Mali) and MAIGA A in 2020 at the CSRéf de San (Mali) which reported 66.4% and 62.03% respectively for patients who did not do any CPN [7, 11]. This could explain why some of our patients did not attend prenatal consultations, most of whom were unaware of and neglected the danger signs.

Characteristics of the transfused products:
According to the satisfaction of the demand for blood: During our study, 329 bags of blood products were prescribed, an average of 2.05 per patient. Of the 329 bags requested, 300 were served, which represents 91.18% of needs covered. The rate of unmet needs was 8.82% or 29 pockets. The cases of dissatisfaction were related on the one hand to the non-availability of certain rhesus blood groups, and on the other hand to a lack of blood donors.

Indication for transfusion: Immediate postpartum hemorrhage was the most common cause of blood transfusion with 28.8% in our study. This result is similar to that of MAIGA A in 2020 at the CSRéf de San (Mali) which was 28.5% but significantly higher than that of SISSOKO F in 2019 at the CSRéf de Kalaban Coro (Mali) which was 21.9% [11, 14]. The prevention of obstetric haemorrhage is an essential means because it will reduce maternal and neonatal mortality and also the risks associated with the administration of blood from one individual to another.

Complications that occurred during and after blood transfusion: Chills and urticaria were the transfusion incidents with 3.1%. Malaria was the most common complication after transfusion with 2.5%. In the NIENTAO D study in 2020 at the CSRéf of Fana (Mali), OAP, anaphylactic shock, hyperthermia-chills syndrome and low back pain were the complications that occurred respectively: 2.6%; 2.6%; 1.7% and 0.9% [7].

According to maternal prognosis: In our study 91,2% of patients were regularly discharged from hospital; 1,9% patients were discharged against medical advice; 2,5% patients are evacuated to university hospitals and 4,4% of transfused patients have died. These results are different from those of SIDIBE A in 2021 at Gao Hospital (Mali) and DIARRA M in 2020 at the CSRéf CI in Bamako (Mali) who reported a rate of patients who were regularly discharged from hospitalization of 95.8% and 99.4% against a mortality rate of 4.2% and 0.6% of transfused patients [12, 10]. Deaths in our study were mainly related to delayed management of anaemia and unavailability of blood products.

CONCLUSION

The purpose of our study was to determine the role of blood transfusion in the management of obstetric emergencies, the frequency of which was 33.33%. Postpartum haemorrhage was the first indication for blood transfusion with a frequency of 28.8%. The maternal prognosis was improved in 91.2% compared to 4.4% mortality after transfusion and 1.9% were discharged against medical advice due to lack of economic means. The rate of unmet transfusion need was 8.82%.

Conflict of interest: None

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