

# HELLP Syndrome in Mali

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## Citation

D Abdoulaye, D Diénéba, S Fangoro, T Jeanette, M Ibrahim, C Youssouf, A Rouamba, T Mohamed, K Aphou, T Mamadou. *HELLP Syndrome in Mali*. The Internet Journal of Gynecology and Obstetrics. 2004 Volume 4 Number 1.

## Abstract

**Background:** The authors initiated the present study in Point G Hospital Intensive Care Unit, to evaluate the diagnostic and therapeutic problems of HELLP Syndrome (HS) in Mali.

**Methodology:** It was a prospective study conducted from January 1999 to January 2002 and related to the immediate postpartum period for gravid toxemia (pre-eclampsia). The traditional triad and the criteria of HS are systematically required in the inclusion criteria. Excluded in the study, were all the toxemic patients not presenting the triad of this disease.

**Results:** Of 1559 patients hospitalised at the Intensive Care Unit, 9 cases (0.58 %) of HS were recorded for the period of study: 7 multiparas and 2 primiparas. This corresponded to 6.2 % of obstetrical emergencies and 18.0% of gravid toxemias. The clinical signs were: convulsive crises (eclampsia), high blood pressure, icterus, nausea and vomiting, epigastric with or without hypochondriac pain. The biological signs were anaemia: 6 of 9 cases, obvious low platelet count (between 56,000 and 150,000/mm<sup>3</sup>) and elevated liver enzymes (2 to 17 times higher than the normal). All the 9 cases of HELLP Syndrome were diagnosed after the delivery. Six foetuses were alive, but hypoxic and 3 died in utero. The maternal complications were eclampsia (7 cases), severe renal insufficiency (6 cases) and disseminated intravascular coagulation (3 cases). In three cases with positive checks for malaria, situation was worsened. In 6 cases of severe anaemia, transfusion was indicated. The most frightening complication was the acute renal insufficiency, but haemodialysis was helpful for 4 of patients (44.4%) after failure of diuretic administration. The evolution was favourable in 6 cases, unfavourable in 3 (33.3 % with maternal deaths). Mortality rate seemed high. The difference of results with Western, Maghrebian and Saudi Arabian practitioners could be explained by the quality of the care available to and especially the delay by our patients in seeking consultation and care in Sub-Saharan Africa.

**Conclusion:** HELLP Syndrome remained a serious complication of pregnancy. It must be suspected for all patients with pre-eclampsia; but also among the pregnant women with normal blood pressure, presenting with digestive symptomatology. The coexistence with serious malaria darkened the maternal prospects in endemic areas. The nature of the disease imposes on caregivers to adopt early multidisciplinary management in obstetrical and neonatal resuscitation units. The decrease in mortality related to HELLP Syndrome, Sub-Saharan countries would require training of practitioners and awareness of the risks, suspicious factors and alarm signs at the antenatal consultations.

## INTRODUCTION

According to the acronym HELLP, H for haemolysis, EL for elevated liver enzymes and LP for low platelet count, this disease was codified by Weinstein L (6) in 1982. Later, Sibai B M (8) specified its criteria. The traditional triad is the early manifestation of the diffuse visceral attack in worsening pre-eclampsia. Its full treatment comprises the improvement of the visceral perfusion, the control of the blood pressure (BP), the decision and timing of the delivery and its modes. In spite of the high frequency of this Syndrome, it was the

subject of very few works in Sub-Saharan Africa. After Iloki LH (6) and Chobli M & Al (2, 3), Diallo A & Al (4) had reported one case each, with successful multidisciplinary management. In view of the scarcity of articles on the subject in Sub-Saharan Africa, the present study was initiated to evaluate the diagnostic and therapeutic problems of this frightening disease in Mali.

## PATIENTS AND METHOD

The study was conducted at Point G Hospital Intensive Care Unit (Service of Reanimation) in Bamako (Mali), from

January 1999 to January 2002. The patients came from the Gynaecologic and Obstetrics service of this hospital, the peripheral hospitals and some private clinics. It was a prospective study related to a series of reproductive age group, in immediate postpartum for gravid toxemia (pre-eclampsia). The traditional triad and the criteria of HELLP Syndrome (HS) are systematically required in the inclusion criteria. Excluded in the study, were all the toxemic patients not presenting the traditional triad of this affection.

### RESULTS

Of 1559 patients hospitalised at Point G Hospital Intensive Care Unit (ICU), 9 cases (0.58 %) of Hellp Syndrome were recorded for the period of study. This corresponded to 6.2 % (9/145) of obstetrical emergencies and 18.0% (9/50) of gravid toxemias. The average age of the patients was 29 years, with range between 22 and 41 years. There were 7 multiparas and 2 primiparas.

The clinical signs were as follows:

1. Convulsive crises (eclampsia): 7 of 9 cases (77.8%)
2. High Blood Pressure: all the blood pressures were higher than 140/90 mmHg
3. Nausea and Vomiting
4. Epigastric pain with or without hypochondriac pain
5. Icterus, which was constant.

The biological signs were marked by:

1. Anaemia: 6 of 9 cases (66.7%)
2. Low platelet count: the counts were found between 56,000 and 150,000/ mm<sup>3</sup>
3. Elevated liver enzymes: 2 to 17 times higher than the normal

### BIOLOGICAL PARAMETERS OF HELLP CASES

Figure 1

Biological Parameters	Mean	Range
Haemoglobin (g/dl)	7.8	5.3 – 10.6
Platelets (/mm <sup>3</sup> )	103,166	56,000–150,000
ASAT (iu/l)	298	82 – 656
ALAT (iu/l)	397	218 – 773
Bilirubine T (mmol/l)	31	7.07 – 60
Creatinine (mmol/l)	664	136 – 1375
TCA Activated Coagulation Time (iu)	36	32.5 – 41.5

All the cases of HELLP Syndrome were diagnosed after the delivery, whose modes of delivery were Vaginal Delivery (8 cases) and Caesarean section (1 case). Six foetuses were alive, but hypoxic and 3 died in utero.

The maternal complications were:

1. Eclampsia: 7 cases (77.8%)
2. Severe renal insufficiency: 6 cases with average serum creatinine around 664mmol/l (66.7%)
3. Disseminated Intravascular Coagulation (DIVC): 3 cases (33.3%)

On the six cases with checks for malaria - 3 results were positive and 3 negative for malaria. In the positive cases, malaria worsened the situation.

The treatment consisted of:

1. Systematic, adequate monitoring of blood pressure, pulse, SpO<sub>2</sub> (peripheral saturation in Oxygen) and consciousness level
2. Continuous oxygenation
3. Central or peripheral venous catheterisation
4. Administration of calcium inhibitors, nifédipine and nicardipine to control the sudden high blood pressure
5. Administration of anticonvulsants (particularly diazepam). Magnesium sulphate was not used;
6. Crystalloid perfusion and/or of fresh plasma to correct the hypovolemia
7. Cortico-steroid therapy for short duration in immediate postpartum period
8. Administration of furosemide (6 cases) or association of furosemide and dopamine (3 cases). In 4 cases out of 6, there were persistence of the signs, in spite of the initial protocol and they required haemodialysis (44.4%)
9. Transfusion in 6 cases of severe anaemia with rate of haemoglobin lower than 6 g/dl. The duration of stay in reanimation varied between 4 to 7 days. The evolution was favourable in 6 cases and unfavourable in 3 (33.3 % with maternal deaths).

### DISCUSSIONS

HELLP syndrome (HS) was frequent (4, 5, 7) and represented 18 % of severe toxæmias (pre-eclampsia) in Bamako, capital city of Mali. This rate was higher than that of the study by Sibaï BM (8) which was 9.7 %. The average age in our study, 29 years, was close to that of Ben Letaïfa (1), which was 30 years and of study by Wehbe G (6), which was around 25 years. HELLP Syndrome seemed more frequent among multiparas (7 of 9 cases) in Mali. This idea is shared by Wehbe G (6). All our cases were diagnosed in the postpartum period while for the cases of Sibaï BM (8), 70% was diagnosed ante-partum and 30% postpartum. Sibaï BM and the Maghrebians specialists have the same opinion on this subject: the diagnosis of HS was made primarily in ante-partum period. The presence of epigastric pains associated with or without right hypochondria pain, achieves the unanimity of the authors. In the study of Ben Letaïfa (1), they were even found at the initial presentation of the majority of the patients. The majority of the specialists also shared this assertion.

The crisis of eclampsia, which was very high (7 cases out of 9) in our series, was elsewhere more moderate. Ben Letaïfa noted eclampsia in only 5 of 16 cases. The biological signs presented showed significant differences according to various works. Indeed we observed 6 out of 9 cases with anaemia against 13 out of 16 cases of study by Ben Letaïfa (1). Low platelet count was always obvious with a rate of platelets between 56,000 and 150,000/ mm<sup>3</sup>. The rise of liver enzymes, in our series reached 2 to 17 times the normal, against 3 to 26 times elsewhere. The most frightening complication for us was acute renal Insufficiency, found in 2/3 of the cases, against 1/3 elsewhere. Disseminated Intravascular Coagulation (DIVC) was present at 33.3% of our patients, a very high rate compared to the literature (12.5%).

Because of the geographical situation of our country (located in full endemic malaria area), the coexistence of the HELLP Syndrome and malaria is frequent. In 3 patients with positive malaria check, we noted just like Chobli M (2) that association with malaria was a worsening factor. This hypothesis was consolidated by the certain existence in our 3 cases, of a synergic action of the 2 affection's noxious effects on the same site of the body.

Vaginal delivery was the dominant mode for the most of series. Nowadays the treatment of these patients is well described (5, 10): oxygenation, monitoring, central or

peripheral venous catheterisation, administration of calcium inhibitors, anticonvulsants, supply of crystalloids and/or fresh plasma and renal assistance. Magnesium sulphate, which has been largely used by the Anglo-Saxon authors, was not used in our study. We also did not, use albumin, because this expensive product is not available in Mali. Haemodialysis was helpful for 4 of patients after failure of diuretic and dopamine administration. Our 3 cases of DIVC progressed favourably after use of haemostatic and blood products.

Presently, corticosteroid therapy's indications and methods of use varied. Indeed, it must be for a short duration and for the improvement of the general state in the postpartum period. When used in ante-partum period, it can accelerate foetal pulmonary maturation.

Our rate of lethality seems high: 3 foetal in utero and 3 maternal deaths. The Maghrebian authors (1) reported 7 deaths cases: 1 maternal, 2 foetal in utero and 4 neonatal. The difference of results, could be explained by the quality of the care available to Western and Maghrebian practitioners and especially the delay by our patients in seeking consultation and care in Sub-Saharan Africa. In Saudi Arabia Takrouri et al (12) demonstrated better result with no maternal mortality and minimal foetal loss.

### CONCLUSION

HELLP Syndrome remains a serious complication of pregnancy. It may be associated with the patients with pre-eclampsia; but it can also be present among pregnant women with normal blood pressure, presenting with nausea and vomiting and epigastric pains occur during second half of the pregnancy. The lack of specificity of its symptomatology can lead to diagnostic errors. Its association with serious malaria darkens the maternal prospects in endemic areas, because of the noxious synergistic effects of the two affections on the same vital functions. The traditional triad always represents a grave condition, which imposes on care-giver to adopt early multidisciplinary management in obstetrical and neonatal resuscitation units.

The decrease in mortality related to HELLP Syndrome in Mali would require:

1. A training of practitioners on maternal emergencies management
2. An optimal exploitation of existing networks activities, like PMM (Prevention of Maternal

Mortality in Africa)

3. A systematic prospect, at the first antenatal consultation, of risks and suspicious factors of pre-eclampsia and by the same opportunity the precision of the monitoring methods
4. A prospect of alarm signs and their adequate treatment at the third trimester consultation, in any establishment, where a delivery is envisaged.

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