

## **Newborns from mother having a hellp syndrome.**

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### **Abstract**

**Introduction:** HELLP syndrome, a severe complication of preeclampsia, is a serious obstetric situation because it is responsible for maternal and fetal morbidity and mortality. In developing countries, becoming neonatal parturients with Hellp Syndrome continues to have a poor prognosis. It depends on the age of discovery of the pathology and the quality of care. The objective of this work is to apply a protocol for the management of patients with a hellp syndrome and to evaluate its efficacy on neonatal morbidity and mortality.

**Patients and Methods:** This is a mono-centric retrospective study at the gynecological obstetrics department of the Oran EHU. The retrospective study was conducted over a 24-month period from January 2013 to the end of 2014 (38 patients), followed by the two-year prospective study (January 2015 to December 2016), with the implementation of a Progressive and continuous protocol (127 patients). The study concerns all patients with a hellp syndrome defined according to the Sibai criterion.

**Results:** One hundred and sixty-five patients with a hellp syndrome, the mean age of our patients was 32 years  $\pm$  6.33, with a predominance in parturient multiparous. After the protocol, we observed a decrease in maternal deaths from 15.7% to 3.14%, and a decrease in perinatal mortality from 31.5% to 16.5%.

**Conclusion:** The hellp syndrome protocol application will allow a better therapeutic approach. According to the results of our study, HS is one of the serious maternal pathologies that exposes the newborn to a risk of inevitable prematurity, its management is ensured in the neonatal resuscitation unit, including its development and prenatal follow-up remains the guarantors of a good prognosis.

**Keywords:** HELLP syndrome, Pre-eclampsia, Pregnancy, Prematurity, Newborn, Perinatal.

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### **Introduction**

The HELLP syndrome is a severe complication of the second and third trimesters of pregnancy, described by Weinstein [1,2] in 1982. This is the acronym for Hemolysis Elevated Liver Enzymes and Low Platelets Count. This syndrome is generally considered to be a particular clinical form of preeclampsia [2,3]. In developing countries, neonatal outcome in parturients with Hellp syndrome continues to have a poor prognosis, it depends on the age of discovery of the pathology and quality of care. The risk of perinatal complications is related to the severity and gestational age of occurrence of pre-eclampsia, which is why some authors defend the conservative attitude of pregnancy. Neonatal complications of HS are largely

attributable to prematurity such as fetal thrombocytopenia and intrauterine growth retardation IUGR. The objective of this work is to apply a protocol for the management of patients with a hellp syndrome and to evaluate its efficacy on neonatal morbidity and mortality.

### **Materials and Methods**

This is a single-centric, descriptive, comparative study of the two periods before and after the introduction of a protocol, aimed at improving the management of HS.

Patients are recruited from the gynecological obstetrics department of the Oran EHU. The study was conducted in two periods:

- First retrospective (N=38 patients), during the period from January 2013 to the end of December 2014 inclusive.
- Then prospective (N=27 patients), from January 2015 to the end of December 2016 included by the implementation of a protocol applied continuously.

For the factors studied: We first described the characteristics of the overall population, including all the patients included in the "2013 to 2016" study, and then compared the two populations on the following factors: at birth, prematurity, intrauterine growth retardation, perinatal mortality and prematurity.

**Statistic study:** The descriptive and analytical analysis of the data was performed using the SPSS 20 software.

Flat sorting corrected the inconsistent data and completed the missing data.

## Results

### Characteristics of the study population:

#### Sociodemographic characteristics:

During the study period, we collected 165 cases of HS out of a total of 20,283 deliveries. The estimated incidence of this syndrome is 0.8%, or 1 case for 116 pregnancies. Among the admitted patients, we count 1167 pre-eclamptic patients during the same period, the incidence of HS in preeclamptic patients collected during the same period is 14.13%. The average age of our patients is 32 years with a standard deviation of more than 6.33. The minimum age is 19 and the oldest of our patients is 45, with a median of 32 years. In our study, women over 35 represent 85%. Most of our patients (88.5%) do not practice a profession. Our patients did not have antenatal consultation in 59% of the cases, and 121 (73.3%) of our patients were referred to peripheral maternity hospitals, the rest of the evacuations are distributed as follows: (Relizane 31.4%, Mascara 26.4%, then Tiaret 18.2%, Mostaganem 14% and finally Chlef with 9.1%).

#### Clinical features:

The frequency of multiparity was 45%, the nulliparous 28.5%, and the primiparity 26.5%. The mean parity in our patients was  $2 \pm 1$  children with extremes ranging from 0 to 9. Mean gestational age at the time of hospitalization was  $33.3 \pm 5$  weeks.

### Becoming a newborn before and after the application of the protocol:

After the application of the protocol, we found that the neonatal mortality rate increased from 36.8% to 7.1% significantly  $p < 10^{-3}$  (Table 1). There is no significant difference in intrauterine mortality.

We note 72.7% of perinatal deaths at a gestational age of less than 32 years, and only 27.7% of deaths occur at gestational age above 32. Prematurity and intrauterine growth retardation (IUGR) shown below (Table 2).

We found no statistically significant difference in prematurity and stunting between the two periods. Just as there is no diff

birth weight before the 1987.5 g protocol and after 1815.0 g (Table 3).

## Discussion

### Difficulties and progress of our experiment:

Some difficulties related to the regular acquisition of equipment and medicinal products to revive the newborn

- **Fetal complications:** Our results are consistent with those of the Maghreb countries, HS is associated with prematurity in 48% of cases, without significant change between the two periods, this prematurity is inevitable despite the protocol (Table 4).
- **Perinatal mortality:** In our study, we find a decrease in perinatal mortality from 31.5% to 16.5% between the two periods, our results are similar to most series [4-8] including perinatal mortality rate in HS fluctuates between 7% and 60%. In 2010, in a retrospective Tunisian study of 17 cases, Khaled [9] found 3 deaths all premature by less than 31 SA is 42, 85%. Perinatal deaths in our study were related to the parity of the parturient, 72.7% occurred at a gestational age of less than 32SA. We conclude that the awareness and training protocol on neonatal resuscitation is effective (Table 4).

**Table 1.** Comparison of in utero, neonatal, and perinatal mortality between the two periods

	Before (38)		After (127)		P
	Number of cases	%	Number of cases	%	
Neonatal mortality	14	36.8	9	7.1	<0.0001
In utérine mortality	10	26.3	33	26.0	0.86
Perinatal mortality	12	31.5	21	16.5	0.07
<b>New born alive</b>	<b>14</b>	<b>36.8</b>	<b>85</b>	<b>66.9</b>	<b>0.001</b>

Gestational age (SA)	Number of cases	%
≤ 32	48	72.7
>32	18	27.2
Total	66	100.0

**Table 2.** Distribution of Perinatal Mortality by Gestational Age

**Table 3.** Comparison between the two periods of prematurity, intra uterin growth delay 5 (IUGD) and severe intra uterin growth delay (IUGD)

	Before (38)		After (127)		P
	Nombre de cas	%	Nombre de cas	%	
Prématurité	16	52.6	52	48.8	0.82
IUGR (≥ 1SA)	34	89.4	111	87.4	0.96
Severe IUGR (≥ 3SA)	12	31.5	26	25.9	0.63

Tables 4. Frequency of fetal morbidity according to the authors

Authors	Country	Year	Number of patients	IUGR	Intrauterin death	Prematurity	Périnatal death
Sibai [4]	Amérique	1993	442	20 à 30%	19	Nd	7a 20%
Mamouni [5]	Maghreb	2012	61	21%	Nd	42	31%
Hanibilal [6]	Algérie	2016	25	8%	28	36	20%
<b>Our study</b>	<b>Algérie</b>	<b>2017</b>	<b>127</b>	<b>25.9%</b>	<b>26</b>	<b>48.8</b>	<b>30%</b>

- **Neonatal mortality:** In the literature, neonatal mortality is variable according to the authors [1,2,10-12], ranging from 6 to 37%, which joins our series. We note a decrease in this rate between the two periods (36.8% before 7.1% after), this is due to the awareness on neonatal resuscitation and conservative treatment (Table 4).
- **Intrauterine fetal mortality:** In our study, the MFIU is 26%, the latter is superior to the result found by Sibai [4], but concord with that of Hanibilal [6], we blame the late transfer of patients, whose diagnosis of HS was made at the stage of intrauterine fetal death, and the absence of prenatal follow-up. Our results are consistent with those of the Maghreb countries [5]. HS is associated with prematurity in 48% of cases, without significant change between the two periods, this prematurity is inevitable despite the protocol undertaken.

## Conclusion

This study has shown the reliability of the appropriate and multidisciplinary early management of which the gain was marked by the reduction of perinatal mortality. According to the results of our study, HS is one of the serious maternal pathologies that puts the newborn at risk of premature birth.

Our perspectives are:

- Develop neonatology resuscitation.
- To work so that the care is consensual and multidisciplinary.

## Conflicts of Interest

- The authors declare that they have no conflict of interest,
- I declare that the ethics committee of the faculty of medicine has approved it and,
- I declare my informed consent to work me and the other authors.

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