









































(11%), disseminated intravascular coagulation (8.7%), acute pulmonary edema (3.4%) and acute respiratory distress syndrome (8.7%). These complications resulted in multiple visceral failures mainly cardiopulmonary (13.3%), hematologic (11.8%) and hepatic (6.8%).

The main medical therapies started at the maternity ward and continued during the ICU stay were nicardipine and magnesium sulphate, followed by the transfusion of red blood cells and coagulation factors. The use of vasoactive drugs was necessary in 34 cases including 15 cases of hemorrhagic shock. Artificial ventilation was required in 18 cases with an average duration of  $22 \pm 8$  hours. In one case transferred from a peripheral maternity for hemorrhagic shock following a uterine rupture and complicated cerebral hypoxia, the respiratory assistance was provided for 6 days. Five patients including 2 cases of HELLP syndrome and 3 cases of Retro-placental hematoma with defibrination syndrome required hemodialysis sessions. These results are consistent with previously published data [10,12].

The need for more interventions and procedures in deceased women, as well as a higher total maximum SOFA score in this group, reflects attempts to maintain body homeostasis in the most severe cases. Multi-systemic organ failure was the leading cause of death in the majority of women, and this finding is also consistent with those of previous studies [3,10]

### **Conclusion:**

The findings of this study indicate the need for political and social action for the implementation of reproductive health measures, including awareness of the need for obstetric intensive care beds in maternity wards; and improving the strategy for managing high-risk pregnancies. Currently, it is not possible to generalize these results to the whole country, as they could be specific to the region studied. It is not illogical to assume that these issues are relevant to other low-income countries, but each area should be considered before implementing any changes. The SOFA score can be a useful tool for assessing the severity and prognosis of MM cases. Establishing uniform international criteria for the definition of MMS and the adoption of the mortality / morbidity ratio as part of an audit system can help focus efforts to maximize pregnancy care, particularly in low income countries [14].

## **CONFLICT OF INTERESTS:**

The authors declares that there is no conflict of interest regarding the publication of this paper.

**The data used to support the findings of this study are available from the corresponding author upon request.**

**The research did not receive specific funding, but was performed as part of the employment of the authors in the Maternity and Neonatology Centre of Monastir.**

## **BIBLIOGRAPHIE**

1-La morbidité maternelle grave

Sonia Ben Hamouda, Héla Khoudayer, Héla Ben Zina, Abdelwaheb Masmoudi, Rachida Sfar. La Revue Sage-Femme, March 2008; Pages 21-26

2-Morbidity and mortality of patients with preeclampsia or HELLP syndrome transferred in intensive care].

Sabbah-Briffaut E, Bourzoufi K, Fourrier F, Subtil D, Houfflin-Debarge V, Deruelle P. Presse Med. 2009 Jun;38(6):872-80. doi: 10.1016/j.lpm.2008.12.021. Epub 2009 Jan 30. French.

3- Objectifs du Millénaire pour le développement - Indicateurs. Genève, Organisation mondiale de la Santé, 2004

4-Predictors of maternal mortality among critically ill obstetric patients.

Adeniran AS, Bolaji BO, Fawole AA, Oyedepo OO. Malawi Med J. 2015 Mar; 27(1)

5-Maternal critical care: what can we learn from patient experience?

Hinton L, Locock L, Knight M. BMJ Open. 2015 Apr 27;5(4):e006676. doi: 10.1136/bmjopen-2014-006676

6-Audit of severe acute maternal morbidity describing reasons for transfer and potential preventability of admissions to ICU.

Lawton BA, Wilson LF, Dinsdale RA, Rose SB, Brown SA, Tait J, Coles CL, McCaw A. Aust N Z J Obstet Gynaecol. 2010 Aug;50(4):346-51. doi: 10.1111/j.1479-828X.2010.01200.x.

7-Provision of critical care services for the obstetric population.

Sultan P, Arulkumaran N, Rhodes A. Best Pract Res Clin Obstet Gynaecol. 2013 Dec; 27(6):803-9. doi: 10.1016/j.bpobgyn.2013.07.005. Epub

8-Factors associated with maternal death in women admitted to an intensive care unit with severe maternal morbidity.

Oliveira Neto AF, Parpinelli MA, Cecatti JG, Souza JP, Sousa MH. *Int J Gynaecol Obstet.* 2009 Jun;105(3):252-6. doi: 10.1016/j.ijgo.2009.01.025. Epub 2009 Apr 1.

#### 9-Epidemiology of maternal morbidity and mortality

AdiHirshberg, Sindhu K. Srinivas. *Seminars in Perinatology*, October 2017; Pages 332-337

#### 10-Severe maternal morbidity in a general intensive care unit in Nigeria: clinical profiles and outcomes

S. Igbaruma, B. Olagbuji, A. Aderoba, W. Kubeyinje, C. Imarengiaye. *International Journal of Obstetric Anesthesia*, December 2016; Pages 39-44

#### 11-Maternal mortality and morbidity: Epidemiology of intensive care admissions in pregnancy

H. Senanayake, T. Dias, A. Jayawardena. *Best Practice & Research Clinical Obstetrics & Gynaecology*, December 2013; Pages 811-820

#### 12-Establishment of a national severe maternal morbidity preventability review in New Zealand

Evelyn Jane MacDonald, Stacie E. Geller, Beverley Lawton. *International Journal of Gynecology & Obstetrics*, October 2016; Pages 120-123

#### 13-Factors associated with maternal death in women admitted to an intensive care unit with severe maternal morbidity

Antonio F. Oliveira Neto, Mary A. Parpinelli, José G. Cecatti, João P. Souza, Maria H. Sousa. *International Journal of Gynecology & Obstetrics*, June 2009; Pages 252-256

#### 14-Maternal near miss: what lies beneath?

Eimer G. O'Malley, Petar Popivanov, Ann Fergus, Terry Tan, Bridgette Byrne. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, April 2016; Pages 116-120