Research Article

Maternal Prognosis During Childbirth of 111 Newborns Macrosomes at Chu Sylvanus Olympio

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Abstract

Objective: To determine the maternal prognosis during macrofen delivery at Sylvanus Olympio CHU.

Method and framework: This was a descriptive cross-sectional study that took place in the Obstetrics Gynecology department of the University Hospital Center of Sylvanus Olympio University Hospital in Lome. June 30, 2017 over a period of 5 months. The statistical analysis was done using the software: Microsoft Excel.

Results and discussion: Of 3468 deliveries recorded during the study period, 111 resulted in macrosomes, a macrosomia frequency of 3.2%. The highest incidence was observed among parturients in the 26-30 age group at 38.7%. Delivery occurred spontaneously vaginally in 30%, caesarean section in 20%, forceps 1.5%. Maternal complications were: perineal tears (2.2%), delivery hemorrhage (2.2%), cervical tears (0.5%). These complications are more frequent in case of non-prenatal monitoring of pregnant women.

Conclusion: Since fetal macrosomia is a real public health problem because of its strong association with infant morbidity and mortality, such a detailed study of children born with excess weight would make it possible to detect the most important factors in order to improve their health. management of this gravido-puerperal pathology in our African environments.

Keywords: Fetal macrosomia; Maternal prognosis; chu Sylvanus Olympio Togo

1. Introduction

Multiple controversies have taken place as to the weight to accept to define macrosomia. Macrosomia is usually defined by a birth weight greater than 4000 grams, or greater than the 90th percentile of the reference curves for a given population [1] The birth of a macrosome has always preoccupied obstetricians, pediatricians, diabetologists and other specialists by the etiological problems and obstetric complications posed by macrosomia. Increasingly, concerns are also being raised about the long-term metabolic prognosis of these children. It is actually a heterogeneous framework, the newborn macrosomes exhibit anthropometric differences and body composition. In addition, the factors that may be involved in the occurrence of a macrosomia are numerous, often entangled, and their relative influence is poorly understood. If some authors retain the limit of 4500 g or more, it is classically accepted to consider as a macrosome any child over 4000 g nascent term. This definition does not exclude the existence of macrosomes before term, as would be a child weighing 3700 g at 36 weeks of amenorrhea, because the macrosomia is announced early in the pregnancy. [2, 3, 4] In this case, it is defined by conventional weight curves according to the term, calculated in utero by ultrasound or after birth. Thus, a newborn is a macrosome when its birth weight is greater than the 90th percentile according to the reference curves for a given population. [5, 6, 7-8]. In view of the above, the frequency of children macrosomes should vary according to the authors and therefore the countries. [6] In Africa, although this prevalence varies with the socio-economic level and the other criteria of definition in each country, it nevertheless remains much lower than those reported across some European countries: 1.57% in Senegal; [9] 7.75% in Cameroon; [10] 4.9% in Togo; [11] 3.1% in Nigeria; [12] 19% in Algeria, [13, 14] 4% and finally 15.8% in Tunisia [15, 16,. In terms of prognosis, fetal macrosomia is associated with a higher risk of obstetric complications such as prolonged labor, increased caesarean section rates and instrumental extractions, haemorrhage of delivery, infectious risk, and thromboembolism. [17] Similarly, the risk of perineal complication and anesthetic accidents is also increased. [17] Fetal macrosomia is also associated with an increase in perinatal mortality and neonatal morbidity. Fetal macrosomia remains a real public health problem not only because of its prevalence in both developed and developing countries, but also because of its strong association with infant morbidity and mortality, such a detailed study of Infants born with excess weight would be able to detect the most decisive factors to improve the management of this gravido-puerperal pathology in our environment. There is an eternal debate when a fetus seems to be above average.

Should we provoke or wait for delivery? While both attitudes have their followers and detractors, none is based on a proven attitude. In view of the literature, these notions seem to rest mainly on old data and often disparate in reality. Thus, if this remains true, what would it be today and particularly in our environment: the frequency of fetal macrosomia, its determinants? To answer these questions, we propose to conduct a prospective study on etiological factors at the Sylvanus Olympio CHU.

2. Methodology and framework of study

This is a descriptive prospective study Obstetrics and Gynecology Clinic of the Lomé University Teaching Hospital The recruitment took place from February 1st, 2017 to June 30th, 2017 over a period of 5 months The births were included in the study fulfilling the following criteria: Newborns weighing 4000 g or more, neonates born during the study period at the UHC-SO gynecology obstetrics clinic, fresh stillborns were excluded from

study as well as third-degree macerated stillbirths were selected as risk factors for macrosomia Consistent with literature data: Multiple Parity, History of Large Fetuses, Overweight and Maternal Obesity Prior to Pregnancy, BMI Body Mass Index > 25 before pregnancy ,, A maternal height greater than 1.70, A weight gain greater than 12kg during pregnancy, A term of pregnancy greater than 41 weeks of adjustment Orrhea, Diabetes, History of Diabetes, Gestational Diabetes, Fasting Gluchemias in Immediate Postpartum> 1.26g / L, A paternal height greater than 1.70m The statistical analysis was done using the software: Microsoft Excel The statistical analysis was done using the software: Microsoft Excel The correlation coefficients were calculated by the PEARSON formula The probabilities were considered significant for a p> 0.005 on the ethical plane The research protocol was subject to the approval of the legal and administrative authorities, namely: University of Lome, Head of the Department of Obstetrics and Gynecology, Head of Department of Gynecology Obstetrics Clinic CHU-SO Families were free to participate in the study, or to withdraw their consent during the study without any repercussions on the satisfaction of their therapeutic needs. The families included in the study were informed about the topic, its importance and its risks. The information was given to each family before the start of the interrogation. Informed consent was verbally collected. The feedback of information was done on the blood glucose level and by instruction in the medical file for the other risk factors of macrosomia.

3. Results

3.1 Epidemiological Characteristics of the Population

3.1.1 Frequency of macrosomia

In our study, the frequency of newborns whose birth weight is greater than or equal to 4000 grams is 3.2%

3.1.2 Distribution of newborn macrosomes by weight, height, and body index

The birth weight varied between 4000g and 5000g, the average weight was 4193g, The majority of newborns (68.4%) had a birth weight between 4000 and 4200g The size of the newborns varied between 48 and 58cm, the average height was 51.6cm, The majority of newborns had a size between 51 and 52cm, The majority of newborns (72.1%) had a weight index greater than 2.9g / m3 (Table 1).

	Effective	Percentage (%)
Birth weight (Grams)		
4000-4200	76	68,4
4200-4400	16	14,4
4400-4600	12	10,8
4600-4800	5	4,5
>4800	2	1,9
Total	111	100
Cut(cm)		
48-50	16	15,4
51-52	69	66,4
53-54	15	14,4

≥55	4	3,8
Total	104	100
Weight Index		
≤2,9	29	27,9
>2,9	75	72,1
Total	104	100

Table 1: Distribution of newborn macrosomes by weight, height, and body index

3.2. Socio-demographic characteristics of the deliveries

The average maternal age was 29 years old with extremes of 18 and 40 years The maximum frequency was between: 26 and 30 years. The most represented profession (38.8%) was the profession of retailer. The parity of our maternal delivery was between 0 and 5 with a mean of 1.63 The maximum frequency was observed for parities between 0 and 2. Maternal weights ranged between 59 and 127 kg The average weight was 83.3 kg The peak frequency was observed for weights between 71 and 80kg Most of our babies had a weight gain of less than 12kg during pregnancy Only 28.5% of our women had a weight gain greater than 12kg (Table 2).

Characteristics	**Effective**	**Percentage (%)**
Age		
18-25	27	24, 3
26-30	43	38,7
31-35	29	26 ,1
36-40	12	10,9
Total	111	100
Profession		
Household	18	16,2
Dressmaker	30	27
Retailer	43	38,8
Students	6	5,4
Cook / Singer	2	1,8
Public servant / shopkeeper	12	10 ,8
Total		100
Gravidity		
1-2	47	42,3
3-4	49	40,5
5-7	19	17,2
Total	111	100
Parity		
0-2	80	72
≥ 3	31	28

Total	111	100
Birth weight of the previous newborn		
<3500	44	47,4
≥3500	49	52,6
Total	93	100
Current maternal weight		
60	2	1,8
60-70	16	14,4
71-80	40	36
81-90	20	18
91-100	19	17,2
100	14	12,6
Total	93	100
Maternal size		
1,45-1,50	3	2,7
1,51-1,60	41	37
1,61-1,70	60	54
1,70	7	6, 3
TOTAL	111	100
Weight gain during pregnancy		
<12	75	71,5
≥12	30	28,5
Total	105	100
Gestational age		
37	3	31
37-40	50	52,7
40-41	23	24,2
41	19	20
Total	95	100
Uterine height at delivery		
33	16	14,5
33- 35	46	41,5
35	49	44
TOTAL	111	100

Table 2: Socio-demographic characteristics of the deliveries

3.3. History and evolution of pregnancy

3.3.1 Number of ANC

The number of ANCs ranged from 2 to 8 with an average of 5.23, with only 9 of our deliveries achieving less than 4 ANC (Table 3).

Number of CPN	Number of cases	Percentage (%)
<4	9	8,1
4-7	98	88,3
>7	4	3,6
Total	93	100

Table 3: Distribution according to the number of CPNs performed

3.3.2. Pathologies during pregnancy

We identified 5 pathologies, the most common of which was pre-eclampsia. Gestational diabetes was identified 3 times and represents 17% (Table 4).

Pathologies	Number of cases	Percentage (%)
* HBsAg +	3	17,7
Gestational Diabetes	3	17,7
preeclampsia	6	35,2
** VRS +	5	29,4
Total	17	100

Table 4: Frequency of pathologies encountered during pregnancy

* AgHbs +: positive hepatitis b antigen ** SRV +: positive HIV positive retroviral serology

3.3.3. Prenatal report

The antenatal check-up was complete for most of our deliveries, only 10 of our deliveries had no record (Table 5).

Prenatal report	Number of cases	Percentage (%)
Full	75	67,6
Incomplete	26	23,4
Not done	10	9
Total	111	100

Table 5: Distribution of deliveries according to prenatal assessment

3.3.4. Clinical examination at admission

3.3.4.1. Mode of admission:

Most of our deliveries (58.5%) were referrals from other centers (Table 6).

Mode of admission	Number of cases	Percentage (%)
Admitted	36	32,5
Addressed	10	9
Referred	65	58,5
Total	111	100

Table 6: Distribution of deliveries by admission mode

3.3.4.2. Reason for admission

Most of our deliveries (64%) were admitted for labor, only 16.2% were admitted for prophylactic caesarean section and the rest were referred for obstructed labor (Table 7).

Reason for admission	Number of cases	Percentage (%)
Labor of delivery	71	64
Prophylactic caesarean section	18	16,2
Other Admission	22	19,8
Total	111	100

Table 7: Distribution of births by reason of admission

3.3.5. Cervical status

Most of our women had arrived in latency phase of cervical dilation (47.8%)

Only 17.1% of our delivery had arrived outside of all labor (Table 8).

Cervical status	Number of cases	Percentage (%)
Not in work	19	17,1
Latency phase	53	47,8
Active phase	39	35,1
Total	111	100

Table 8: Distribution by Cervical Status

3.3.6. Mode of delivery

The most common route of delivery was caesarean section (64%)

Among vaginal deliveries (n = 40), 19.5% benefited from instrumental extraction (Table 9).

Mode of delivery	Number of cases	Percentage (%)
Caesarean	71	64
Spontaneous	33	30
Suction cup	5	4,5
Forceps	2	1,5
Total	111	100

Table 9: Distribution by mode of delivery

3.4.12 Maternal morbidity

The overall maternal morbidity was 32.5% n = 26, The maximum frequency (77%) was observed for perineal tears (Table 10). There were no maternal deaths in our study.

Morbidity	Number of cases	Percentage (%)
Tearing the perineum	20	77
Hemorrhage of deliverance	4	
Tearing the perineum and		15,4
Hemorrhage of the rescue	2	7,6
Total	26	100

Table 10: Distribution according to maternal morbidity

4. Comments and Discussion

4.1. Frequency:

From January 1, 2010 to December 31, 2013, we recorded 111 cases of macrosomes on 3468 deliveries at the maternity ward of Chu Sylvanus Olympio, a frequency of 3.2%. This frequency obtained is practically identical to that obtained in Mali by A KEITA who found in his series a prevalence of [18] (3, 32%) but much lower compared to those of the following authors: GOLDICH JM who found 8 [19], STEVENSON DK [20] and much higher than those of AKZ TRAORE [21] which from 1 January 2005 to 31 December 2005 had registered 107 macrosome deliveries out of 6745 deliveries, a frequency of 1.58% which is identical to our rate. These frequency variations between our study and the literature could be explained by:

- The recruitment method: STEVENSON D K [20] was only interested in children of diabetic mothers.

- The size of the sample: the studies of GOLDICH J M [19] and SOUMANI A [22] focused on several maternities. They therefore represent better the population of macrosomes whereas our study was conducted only at the Maternity of Chu Sylvanus Olympio of Lome. The frequency of macrosomia would be higher in developed countries than in Africa. According to AK ZTRAORE [20], this frequency is low in the African series (1.56% in Senegal [23], 2.72% in Mali in 2001 at the Ponit G national hospital [24] and 1.58% in the commune V of Bamako [21] is linked to the low socioeconomic level and the frequent pathologies during pregnancy.

4.2 Risk Factors Found

The maternal age

The maternal age in our series averaged 29 years, which is consistent with the Mounzil et al data where the average age was around 30 years. [25] We found a positive correlation between fetal weight and maternal age (R = 0.05) The age group 26-30 years was the most represented in our study with 38.73% .AKZ TRAORE [21] found the predominant age group 19-35 years with 59.8%. A KEITA [18] reported that the 25-29 age group was the most represented in its series The average age of our parturients was 29 years with variations ranging from 18 to 40 years while several authors report an age higher average. For OUARDA C [26] 46% of the mothers were over 30 years old.

Parity

In our study, pauciparas accounted for 72%, multiparous and large multiparous 28% We found a positive correlation between fetal weight and parity (R = 0.04) Our rates for multiparous and large multiparous are lower than those of AKZ TRAORE [20] who found respectively 46.7% and 26.2%. A KEITA [18] reported an average parity of 5.17. Unlike our study he showed that 70% of his patients were multiparous. Most of the works BISH A [27], GBAGUIDI A [28], WARLIN J F [29] agree with this clear predominance of multiparas.

The maternal antecedent of delivery of newborns macrosomes

In our study 25.20% of patients had at least one history of macrosome delivery (weight> 4000g). The frequency of large fetuses (weight> 3500g) in the maternal antecedents in our series was 52.6%; We found a positive correlation between fetal weight and the number of large fetuses in the antecedents (R = 0.17). 74.80% of patients had never given birth to a macrosome child. Our rate is comparable to that found by A KEITA [18] with 30% and inferior to those reported by A K Z TRAORE [20] and BADJI C.A [23] both with 50.5%. It is also inferior to that found by ANDEM (France) [30] with 95%. This comforts us in the idea that a woman who has given birth to a macrosome recurs more often.

Maternal diabetes

Fasting blood glucose levels in our newborns ranged from 0.45 to 1.8g / L. Average blood glucose was around 0.94g / L. 42% of our newborns had a fasting blood glucose level greater than 0.92g / L and 13.1 % Glycemia greater than 1.26 g / L. Diabetes can affect pregnancy by giving several complications including fetal macrosomia. His frequency

in our series was 14.2% of which 1.2 of known diabetes and 13.1 of gestational diabetes A KEITA [18] obtained in his study a frequency of 5% of diabetes among which 1% known diabetes and 4% gestational diabetes. A K ZTRAORE [21] found a maternal diabetes rate of 31.6%. GBAGUIDI A [28] reported a rate similar to that of A KEITA [18], BISH.A [27] a low rate of 1.07% whereas for WARLIN JF [29] diabetes is incriminated in 10% of deliveries of newborns macrosomes.

Obesity

According to several authors, obesity is a determining risk factor for pregnancy and perinatal complications, including macrosomia. We found a positive correlation between fetal weight and pre-gestational maternal BMI (R = 0.17) In our series overweight was found in 44.1% and obesity in 27.5% of our mothers c Our rate is lower than that of AKZ TRAORE [21] who found 63.3% of cases of obesity and higher than that of A KEITA [18] with 25%. The risk of macrosomia would be multiplied by four in obese subjects [31]. For OUARDA C [26] and MODANLOU H [32] 30 to 40% of mothers of newborns macrosomes are obese. For ANDEM [30], obesity would have a high value when it is associated with a weight gain greater than 16 kilograms. In our study, overweight was found in 28.5% of our deliveries. We found no positive correlation between fetal weight and weight gain during pregnancy (R = -0.09).

The prolonged pregnancy

This factor is found in 20% of our parturients, however, we found no positive correlation between fetal weight and gestational age (R = -0.04) BADJI.CA [23] reported in his series a rate below our 9.5%. In K Z T RAORE [21] recorded a rate of 3.7% in common V in Mali At KEITA [18] also found a low rate of 3%. Extending the pregnancy beyond the theoretical term is a risk factor for macrosomia and could lead to complications for the mother and the fetus.

4.2.1 Maternal height

In the literature data [33, 34], the rate of large women is higher in Europe and the United States than in Africa, accounting for the low rate of slender mothers in our study. In our series, the incidence of mothers greater than 1.70 m was 6.3%, compared to 21.8% for Panel [2] and only 3.61% for Abdelkododosse [35].

4.3 Delivery route

In our series, vaginal delivery accounted for 36% against 64% cesarean section. At K Z TRAORE [5] in 2005 at the reference health center of commune V found a vaginal delivery rate of 72% against 28% of caesarean section. A KEITA [1] in 2006 at the reference health center of commune IV found a vaginal delivery frequency of 63% and a caesarean section rate of 36%. The prevalence of high birth in our series (64%) is in contradiction with most studies: BISHA [12], GBAGUIDI A [20], MODANLOU H [34]. The caesarean section rate of 64% in our study varies according to the studies: GBAGUIDI A [20] in Dakar = 7%, PANEL. P [40] = 9, 09%, TURNER MJ [54] = 10%, SPELLACY WN [50] = 34%, BADJI CA [20] in Dakar = 41, 9% macrosomia may increase the rate of caesarean but this rate, nevertheless very high in our study, is explained by the fact that macrosomia itself is an indication for

caesarean section at the Lomé school. Regarding vaginal delivery The distribution of the different modes of vaginal delivery is heterogeneous in the literature, however, the spontaneous low path remains the majority followed by the sucker and forceps last our series is no exception (Table 1). 38).

Authors		Countries	Year	Spontaneous (%)	Suction cup (%)	Forceps (%)
OURADA	[40]	Tunisie	1989	70,1	6,4	6,2
ABDELKODOSSE	[46]	Maroc	1997	46,84	26,85	1,66
PANEL	[5]	France	1991	58	-	23,8
JULIA		USA	2000	56,4	7	10,1
Notre série		Togo	2016	30	4,5	1,5

Table 38: Modes of vaginal delivery according to the authors

4.4 Maternal Prognosis

In our study, we recorded four isolated cases of hemorrhage of the delivery, that is 15.4% following a uterine atony, 20 cases of tearing of the perineum or 77% and 2 cases of haemorrhage of the delivery associated with tears of the perineum. No cases of maternal death were noted AKZ TRAORE [5] reported 45.8% of cases of haemorrhage of the rescue and 2 cases of maternal deaths, ie 3.3%, one of which by bleeding from the issuance and the other by unrecognized uterine rupture. A KEITA [1] in her study, showed that the lack of correct evaluation of the parturient carrier of large fetus and the delay of correct care of the parturient were at the origin of: 4 cases of uterine rupture of which 3 cases in evacuees of peripheral centers and 03 cases of haemorrhage of delivery. These two complications threatening the maternal prognosis have already been reported by other authors, such as TREISSER A [53], who have noted a higher rate of haemorrhage in delivery. Maternal mortality is nil in the series of A KEITA [1] in 2006 at the reference health center of commune IV of Bamako district.

Conclusion

Macrosomia presents enormous problems for the obstetrician both in terms of diagnosis and prognosis. During our study, we were able to identify a number of epidemiological elements that make it possible to determine a risky parental profile: Women aged as close as 29 years old, multiparous, with a history of childbirth fetus; obese or have had pre-gestational overweight; who are diabetic or have glucose intolerance and whose uterine height is greater than or equal to 35 cm with an obese spouse. Given the still high rate of mortality and neonatal morbidity it is essential to identify the following precautions: Look for a clinical macrosomia and ultrasonography in any pregnant woman.Well prepare and correctly follow the subsequent pregnancies in case of fetal macrosomia by: An adequate dietary and Regular physical activity before pregnancy and if possible during pregnancy Routine screening for gestational diabetes A better balance of a possible diabetes In the end, it is essential that centers without a surgical antenna make the reference before entering into work. pregnant in whom a fetal macrosomia is suspected.

References

1. Leperec J, Timsit J, Haugeul-De Mouzon S. Première table-ronde : Etiopathogénie de la macrosomie fœtale. J. Gynecol Obstet Biol Reprod 29 (2000): 6-12.
2. Meshari AA, De Silva S, Rahman I. Fetal macrosomia maternal risks and Fetal outcome. Int J Gynaecol Obstet 32 (1990): 315-322.
3. Treisser A. Macrosomie fœtale : Extrait des mises à jour en Gynécologie Obstétrique. Tome XIX 1995: 159-135.
4. Chubb Cw. A large Child Br Med J 1 (1879): 143.
5. Paniel P, De Meeus JB, Yanoulopous B. Accouchement du gros enfant. Conduite à tenir et résultats à propos de 198 dossiers. J Gynecol. Biol Reprod Paris 20 (1991) : 729-736.
6. Saks DA. Fetal macrosome and gestational diabete. What's the problem? Obstet Gynecol 31 (1993): 775-781.
7. Carlus C, Pacault, De Gamarra E, Wallet A. Le nouveau-né macrosome en maternité. Attitude pratique. J. Gynecol Obstet Biol Reprod 29 (2000) : 25-32.
8. Uzam M. Echographie obstétricale : Pédiatrie pratique périnathologie. Poulman R. (Edo), Maloine S.A. Edition, Paris, 1985: 117.
9. Deruelle P, Vambergue A. Obésité et grossesse. In Endocrinologie en gynécologie et obstétrique. B. Lettombe, S. CATTEAU-JANARD, G. ROBIN. Elsivier Masson 2012: 209-213.
10. Li G, Kong L, Li, Zhang L, Fan L, Zou L, Chen L, Ruan Y Wang X, Zangh W. Prévalence of macrosomia and its riks factors in china : a multicentra survey based on birth dorta involving 101, 723 singleton term infants. Paediate Perinat Epidemiol 28 (2014): 345-350.
11. Mahim Najafian, Maria Cheraghi: Occurrence of fetal macrosomia Rate and Its Maternal and Neonatal complications: A5 years cohort study: ISRN Obstet Gynecol 35 (2012): 791.
12. Morikawa M, Cho K, Yamada. T, Sato S, Minakami H. Fetal macrosomia in Japanese Women J ObstetGynecol Res 39 (2013): 900-905.
13. Chauman SP, Grobman WA, Cherman RA, Chauman VB, Gene Chang, Magann EF. Suspicion and treatmen of the macrosomia fetus: A review American Journal of Obstetrics and Gynecology 193 (2005): 332-346.
14. Ohel G, Yaacobi N, Linder N, Younis J. Postdate antenatal testing Int J Gynecol Obstet 49 (1995): 145-147.
15. Najmi RS: Distribution of birth weights of hospital born Pakistani infants. J Pak Med Assoc 50 (2000): 121-124.
16. Karim Sa, Mastoor M, Ahmed Aj, Pasha O, Qureshi F, Akhtar S et al .macrosomia: Maternal and fetak outcome Asia Oceana. J Obstet Gynecol 20 (1994): 73-76.
17. Spellacy WN, Miller S, Winegar A, Peterson PG. Macrosomia maternal characteristics and infant complications. Obstet Gynecol 66 (1985): 158-161.

18. Phillips AM, Bird TM, Nolen L. Borth statistics of High birth Weight infants (macrosomia) in Arkansas. J. Ark. Med Soc 110 (2014): 2006-2008.
19. Rodrigues S; Robinson EJ, Kramer MS, Gray-Donald K. High rates of infant macrosomia: a comparaison of a Canadian native Ord a non-native population. J NITER 2000.
20. Mello G, Parretti F, Lucchetti R, Lagazio C, Pratesi M, Scarselli G. Risk Factors for fetal macrosomia: the importia of a positive oral glucose challenge test. European Journal of Endocrinology 137 (1997): 27-33.
21. Orskou J, Kesmodel U, Henriksen TB, Secher NJ. An increasing proportion of infants weigh more than 4000 grams at birth. Acta Obstet Gynecology search 80 (2001): 731-936.
22. Gupta N, Kiran TU, Mulik V, Bethel J, Bhal K. The incidence, risk factors and obstetric Outcome in primigravid women scand 32 (2003): 736-743.
23. Bergmann RL, Richer R, Bergmann KE, Plagemann A, Brauer M, Dudenhausen JW. Scolar trends in neonatal macrosomia in Berlin: influence of potential determinants Paedriatr Perinat Epidemiol 17 (2003): 244-249.
24. Mikulandra F, Stojnic E, Perisa M, Merlak L, Sikic D, Zenic N. Fetal macrosomia: Pregnancy and delivery Zetraldol Gemakol 115 (1993): 553-561.
25. Badji Ca, Moreau Jc, BA Mg, Diallo D, Diouf C, Tahri L, Diadhiou F. L'accouchement du gros enfant en CHU de Dakar: Epidémiologie et pronostic. Médecine d'Afrique Noire 46 (1999) : 355-358.
26. Nzalli Tangho, Guilherme Roger. Macrosomie Fœtale : Devenir maternel et néonatal précoce au Centre Hospitalier et Universitaire de Yaoundé et à l'hôpital Central de Yaoundé et à l'HCT Official Journal of the Faculty of Medican and Biomédical 2013.
27. Abudu OO, Awongo AO. Fetal macrosomia and pregnancy Outcome in Lagos. Int J. GynecolObstet 28 (1989): 257-262.
28. HU Ezegwui, LC Ikeako, C. Egbuji. Fetal macrosomia Obstetric Outcome of 311 cases in UNTH, Engen, Nigeria. J. Clin Prod 14 (2011): 322-326.
29. Belkacem A, Harir N, Bendahmane M. Complications materno-fœtales associées à la surcharge pondérale chez les femmes enceintes dans la région de TIARET. Antropo 31 (2014) : 69-75.
30. Mai AH, Demouche, Abbassia. The Prevalence of foetal Macrosomia at the specialized Hospital of Gynecology and Obstetrics of Sidi Bel Abbes (West of Algeria). J. Natr Food Sci 4 (2014): 272.
31. Soni AL, Mir NA, Kishan J, Faquin AM, Elzouki AY. Brachial plexus injuries in babies born in hospital: an approvisal of risk factor in a developing country. Ann Trop Paediatr 5 (1985): 69-71.
32. Denguezli W, Faleh, R, Fessi A, Vassine A, Hajjaji H, Laajili R, Sakouhi M. Facteurs de risque fœtal. Macrosomie: Rôle de la Nutrition maternelle. Tunisie médicale 37 (2009): 564-568.
33. Bromwich P. Big babies (additional) Br Med J 293 (1996): 1387-1388.
34. Stotland NE, Caughey AB, Breed EM, Escobar G.J. Risk Factors and Obstetric complication associated with macrosomia. Int J. Gynecol Obstet 37 (2004): 220-226.

35. Boulet S, Alexander G.R, Sahilu Hm, Pass M. Macrosomie proposed grades of risk. Am J Obstet Gynecol 188 (2003): 1372-1378.
36. Carbonne B, Goffinet F. Elongations et paralysies de plexus brachial: circonstances d'apparition et prévention Am J obstet Gynecol.
37. Grossetti E, Beucher G, Regeasse A, Lamendour N, Dreyfs M. Complications obstétricales de l'obésité morbide. J Gynecol Obstet Biol Reprod 33 (2004): 739-744.
38. Matthew C, Neil J, John P.Harris, Stephen Robinson. Risk factors for macrosomia and its clinical consequence: a study of 350,311 pregnancies. Eur J Obstet Gynecol Reprod Biol 111 (2003): 9-14.
39. Mounzil C, Tazi Z, Nabil S, Chraibi C, Dehayni M, El Fehri S, et al. L'accouchement du fœtus macrosome: contribution à la prévention du traumatisme obstétrical. Rev Fr. Gynécol. Obstet 94 (1996):478-485
40. OUARDA C, MARZOUK. Le pronostic néonatal et maternel de l'accouchement d'un gros fœtus unique à terme. J Gynécol. Obstét. Biol. Reprod 18 (1989): 360-366.
41. Suneet P, William A, Robert A, Vidy B, Chaug Md, Everett F. Suspicion and treatment of the macrocosmic fetus: Am J Obstet Gynecol 193 (2005):332-346.
42. Touzet S, Rocher L, Poucet R, Colin C, Berlard M. Etude d'observation des pratiques de dépistage du diabète gestationnel à partir d'une cohorte de 701 femmes. J Gynecol Obstet Biol Reprod 31 (2002): 248-255.
43. El Hadi M, Berthet J, Venditelli F, Tabaste JL. Evaluation de la valeur diagnostique de la hauteur utérine et de la prise de poids maternel pendant la grossesse sur la prédiction de la macrosomie. Rev Fr Gynécol Obstet 91 (1996): 24-26.
44. Hugh M, Brian M, Patrick M, Catalano MD. The influence of obesity and diabetes on the prevalence of macrosomia. Am. J Obstet Gynecol 191 (2004): 964-968.
45. Schaefer-Graf Um, Heuer R, Kilavuz O, Pandura A, Henrich W, Vetter K. Maternal obesity not maternal glucose values correlates best with high rates of fetal macrosomia in pregnancies complicated by gestational diabetes. J Perinat Med 30 (2002): 313-321.
46. Abdelkodousse M. Macrosomie fœtale à la Maternité Lalla Meryem Thèse Méd. Casablanca 1997.
47. Abdouni L. La dystocie des épaules. Thèse Méd. Casablanca 2001.
48. Carlotti N, Moquet Py, Foucher F, Laurent MC. Le diabète gestationnel : prise en charge conjointe obstétricale et endocrinienne. J. Gynécol. Obstet. Biol Reprod 29 (2000): 403-405.
49. Catalano PM, Drago NM, Amini SB. Factors affecting fetal growth and body composition. Am J Obstet Gynecol 172 (1995): 1459-1463.
50. Mumba Mukandila A, Balayi Miteo A,Kadima Mutombo C, Biayi Mikenji J. La macrosomie fœtale en milieu urbain : prévalence, facteurs déterminants et issue de l'accouchement (à propos de 154 cas a Mbujimayi). Rev Méd Gd Lacs 5 (2016) : 40-57.

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