

Spontaneous Late Pregnancies: Obstetric Outcomes at the Mali Hospital

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Abstract

Background: Late pregnancies are a hot topic for both women and health professionals, due to their increasing increase and their prone to more complications, both during pregnancy and for the unborn child. The objective was to assess the rate of obstetric pathologies according to age group, in order to determine whether pregnancies at an advanced age require special monitoring. **Material and Methods:** this was a retrospective case-control analytical study over a period of eighteen months, taking place from January 1, 2023 to June 30, 2024 in the obstetrics and gynecology department of the Mali Hospital in Bamako. The study population was divided into two groups: **cases**, represented by patients 35 years of age or older in early pregnancy, and controls, patients under 35 years of age in early pregnancy. The inclusion criteria were all patients followed in antenatal consultations and presenting with a singleton pregnancy at our department during the study period. The criteria for non-inclusion were multiple pregnancies and those resulting from medically assisted reproduction (ART). Data entry and statistical analysis were performed by SPSS software. The Pearson chi-2 test as well as the Fisher exact test with a significance threshold of 5% ($p < 0.05$) were used for the interpretation of the data. **Results:** The out-of-school population was the most represented (54%, ($n = 281/515$) with 43% ($n = 223/515$) and 11% ($n = 58/515$) respectively among those under 35 years of age and among those 35 years of age or older. Pre-existing conditions such as diabetes and chronic hypertension were significantly associated with age groups with a higher percentage in those aged 35 or over than in those under 30 years of age with respectively (4% versus 3% diabetetic) and (5% versus 2% chronic hypertensive). Obstetric complications were most common among women aged 35 years and older. hypertensive disorders of pregnancy (gestational hypertension, preeclampsia) were significantly more frequent in women from the age of 35. The pregnancy hypertension rate was 5.6% to 3.4%) respectively in those aged 35 or over versus under 35 years. As for gestational diabetes, the rate was 10% versus 2% respectively in those over 35 and over versus those under 35. **Conclusion:** Our study shows that maternal age of thirty-five years or more plays a role in maternal complications.

Keywords: Pregnancy, late, geriatric, spontaneous.

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INTRODUCTION

Background: In Mali, the maternal mortality ratio is estimated at 325 maternal deaths per 100,000 live births for the last seven years (CI: 245-405). Direct obstetric causes of maternal death in Mali accounted for 73.8%; dominated by hypertension and its complications 38% and haemorrhage 33%. Preventable maternal deaths accounted for 39% compared to 61% of unavoidable deaths. The 3 delays were evaluated respectively at 37%,

19%, 44% [1, 2]. Late pregnancies are a hot topic for both women and health professionals, due to their increasing increase and their prone to more complications, both during pregnancy and for the unborn child [3, 4]. The notion of "late pregnancy" has evolved over the years. For the majority of the data in the literature, this term still applies from the age of 35, but with the postponement of the age of motherhood, increasingly to an age greater than or equal to 40 years [3, 4]. A late pregnancy has been defined by FIGO

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(International Federation of Obstetrics and Gynaecology) since 1958 as a pregnancy occurring after the age of 35. In France, it is accepted that a late pregnancy is a pregnancy that occurs after the age of 40. The CNGOF (French National College of Gynecologists and Obstetricians) defines late pregnancy as follows: "The terms "aged primiparous or late pregnancy" apply from the age of 35 and especially 40 years of age" [4]. However, the majority of pregnancies affected are at an age of 40 or more, due to the decrease in fertility [3, 4, 6]. According to the literature, childbirth in women aged 40 or even 45 increases the risk of adverse pregnancy or childbirth outcomes compared to those in younger women, although the boundaries used to define the mother's advanced age and younger reference groups vary widely. A large number of complications are described in late pregnancies, ranging from chromosomal abnormalities, to complications before and during pregnancy and up to the end of delivery [3, 6]. Advancing age implies the appearance of different pathologies. Thus, when a late pregnancy occurs, the presence of certain pre-existing pathologies such as diabetes must be taken into account. The patient may have type 1 or type 2 diabetes. 90% of diabetics have type 2 diabetes, but type 2 diabetes occurs after the age of 40 [6]. The diabetic patient will then benefit from close follow-up by a gynaecologist as well as by the diabetology team. Pregnancy in a diabetic woman can present metabolic complications, worsening of diabetes as well as maternofetal complications: perinatal mortality, severe congenital malformations, prematurity, macrosomia. Around 38-39 weeks, depending on the benefit-risk balance, it may be decided to induce childbirth. Indeed, after this term, the risk of fetal death in utero increases considerably [6]. There is also high blood pressure that pre-existed her pregnancy. The preconception consultation will make it possible to adapt the antihypertensive treatment if there is one to make it compatible with a future pregnancy. Angiotensin-converting enzyme inhibitors and angiotensin receptor antagonists are contraindicated during pregnancy. Alpha-methyl dopa, nifedipine, nicardipine, or labetalol may be used [6]. A late pregnancy implies the occurrence of more obstetric pathologies. These can be high blood pressure (hypertension) and preeclampsia. The diagnosis of gestational hypertension is the discovery during pregnancy, before 20 weeks, of a systolic blood pressure (SBP) greater than or equal to 140mmHg and/or a diastolic blood pressure (DBP) greater than or equal to 90mmHg. This hypertension normalizes within twelve weeks postpartum [4, 6]. Preeclampsia is the combination of gestational hypertension and proteinuria greater than 0.3g/24h. Clinical signs may be associated with it: phosphenes, tinnitus, epigastric bar, oedema, rapid weight gain. Preeclampsia can present complications: eclampsia, HELLP syndrome (hemolysis, hepatic cytolysis and thrombocytopenia), retroplacental hematoma [4, 6]. The prevalence of gestational diabetes mellitus (GDM) increases with maternal age in all studies. From the age of 35, patients

are twice as likely to develop this pathology during their pregnancy [4, 6]. This is why the age of 35 is found in the criteria for Oral Induced Hyperglycemia (OGTT), which is used to diagnose gestational diabetes. The risk of spontaneous miscarriage (SCF) increases with maternal age. A study conducted by Holman showed a risk multiplied by two or three from the age of 40. These miscarriages are linked to a poorer quality of the oocyte, but also to a poorer receptivity of the uterus, preventing proper implantation of the egg [4, 6]. In addition, chromosomal abnormalities, which are more numerous with maternal age, are also an important etiology of these spontaneous miscarriages [4, 6]. Chromosomal aberrations also increase in frequency with advanced maternal age, and more particularly trisomy 21. Indeed, the frequency of this syndrome increases with maternal age: it is estimated at about 1/1000 births at 30 years of age, and is only 1/100 at 40 years of age [4, 6]. According to the French College of Gynaecologists and Obstetricians CNGOF, the main recognized risk factors for fetal death in utero (MFIU) are the following: obesity (BMI >30kg/m²), maternal age over 35 years, low level of education, cocaine use, maternal vascular complications (preeclampsia and eclampsia), intrauterine growth restriction, retroplacental hematoma [6]. In Africa, the spread of the norm that enjoins women to use a modern method of contraception if they do not wish to have children has undeniably contributed to redefining women's reproductive trajectories by allowing the transition from a model of "involuntary" motherhood to that of "chosen" motherhood [7]. The arrival of a child remains a significant event, because it is proof of the femininity and the capacity of extension of a family, especially in African society. Women are therefore subject to the social pressure of motherhood. No studies were conducted in our department concerning this research hypothesis on the increase in obstetric and neonatal complications in pregnant women aged 40 years or older. Our objective was to evaluate the rate of obstetric pathologies according to age group, in order to determine whether pregnancies at an advanced age require special monitoring at the level of the obstetric gynecology department of the Mali Hospital.

MATERIALS AND METHODS

Mali's sectoral health policy was built on a health pyramid structure, the first level of which is the community health center (CSCOM), the second level is the reference health center (CSREF), the third and fourth levels are the regional and national hospitals respectively. In this context, the Mali hospital is a fourth reference health structure according to the Mali health pyramid. The nursing staff included five obstetrician-gynecologists, seven midwives, four obstetrician nurses. Our department does not have a delivery room. A Medically Assisted Reproduction Unit (AMP) has recently been opened with a gradual start of activities. Our study concerned a retrospective observational case control study of the file over a period of eighteen months, taking place from January 1, 2023 to June 30, 2024 in the

obstetrics and gynecology department of the Mali hospital in Bamako. The study population was divided into two groups: cases, represented by patients aged 40 or over at the start of pregnancy, and controls, patients under 40 years of age at the start of pregnancy. The inclusion criteria were all patients followed in prenatal consultations and presenting a singleton pregnancy in our department. The non-inclusion criteria were multiple pregnancies and those resulting from medically assisted procreation (ART), neonatal complications at the time of delivery. Data were collected from medical records (registers: outpatient consultation, delivery and operative report). The data (variables) collected were as follows: - general characteristics (maternal age; level of education, pre-existing diabetes; chronic arterial hypertension; -

obstetric history: (history of spontaneous miscarriages (FCS), parity), - the characteristics of the course of the pregnancy: (number of prenatal consultations (ANC), the occurrence of obstetric pathologies such as gestational diabetes and hypertensive disorders. Data entry and statistical analysis were carried out by) the SPSS software The Pearson chi-square test as well as the Fisher exact test with a significance threshold of 5% ($p < 0.05$) were used to interpret the results.

RESULTS

During the study period, we registered a total of 515 women.

Table I: Distribution by age group

		Frequency	Percentage
Groups Age	Less 35 years	418	81
	35 years of age or older	97	19
Total		515	100

Women under 35 years of age were the most represented groups in our study with 81% of cases.

Table II: Distribution according to the general characteristics of patients in early pregnancy.

Variables		Total 515 n (%)	Age Category		P
			Under 35 years old	35 years and older	
Level of education	Not in school	281(54)	223	58	0,016
	Primary	65 (13)	56	9	
	Secondary	139 (27)	120	19	
	upper	30 (6)	19	11	
Parity	primiparous	82 (16)	81	1	0,000009
	multiparous	433 (84)	96	337	
ANC	Minus 4	295 (57)	260	35	0,000003
	4 and up	220 (43)	158	62	
Pre-existing diabetes	No	479 (93)	404	75	0,000003
	Yes	36 (7)	14	22	
Pre-existing hypertension	No	480 (93)	408	72	0,001
	Yes	35 (7)	10	25	

The out-of-school population was the most represented (54%, ($n = 281/515$) with 43% ($n = 223/515$) and 11% ($n = 58/515$) respectively among those under 35 years of age and among those 35 years of age or older. There was a significant association between age groups and women's educational attainment. Pre-existing

conditions such as diabetes and chronic hypertension were significantly associated with age groups with a higher percentage in those aged 35 or older than in those under 30 years of age with respectively (4% versus 3% diabetic) and (5% versus 2% chronic hypertensive).

Table III: Distribution by Maternal Obstetric Complications and Age Groups

Variables		Total 515 n (%)	Age Category		P
			Under 35 years old	35 years of age or older	
Gestational diabetes	No	450 (87%)	407	43	0,000
	Yes	65 (13%)	11	54	
Pregnancy hypertension	No	468 (91%)	400	68	0,008
	Yes	47 (9%)	18	29	
Preeclampsia	No	453 (88%)	393	60	0,009
	Yes	62 (12%)	25	37	
Eclampsia	No	514 (99)	417	97	0,66
	Yes	1 (1%)	0	1	

Variables		Total 515 n (%)	Age Category		P
			Under 35 years old	35 years of age or older	
Hellp syndrome	No	514(99%)	417	97	0,65
	Yes	1 (1%)	0	1	
Miscarriage	No	490 (95%)	400	90	0,17
	Yes	25 (5%)	7	18	
Maternal death	No	514 (95%)	418	96	0,18
	Yes	1 (5%)	0	1	
PRM before 37SA	No	480 (93%)	399	81	0,000
	Yes	35 (7%)	19	16	

Obstetric complications were most common among women aged 35 years and older. We found a statistically significant association between age groups and gestational diabetes, gestational hypertension, preeclampsia, and premature rupture of membranes before 37 weeks of amenorrhea. There was not, however, a statistically significant association between age categories and early miscarriage, maternal death, and Hellp syndrome.

DISCUSSION

Our research hypothesis was that advanced maternal age may induce more obstetric complications during pregnancy and the objective was to assess the rate of these complications. The Mali Hospital is a fourth-reference health structure according to the Malian health pyramid with a gynecology department and a medically assisted reproduction (ART) unit. We did not include pregnancies obtained by ART and/or multiple pregnancies to avoid potential confounding bias.

The limitations of our study were the absence of a delivery room at our hospital, which did not allow us to take into account the data concerning neonatal outcomes, even though the management of caesarean delivery was effective in our department.

The out-of-school population was the most represented (54%, (n = 281/515) with 43% (n = 223/515) and 11% n = 58/515) respectively among those under 35 years of age and among those 35 years of age or older. There was a significant association between age groups and women's educational attainment.

Multiparous women were the most represented (84% of cases) with 65% and 19% respectively among those aged 35 or over and 35 years (Table II). Our result among multiparous women aged 35 or over is close to that of Sarah Duplaine who found among those aged 35-39 and 40 and over (75% multiparous) [4]. Pre-existing pathologies such as diabetes and chronic hypertension were significantly associated with age groups with a higher percentage in those aged 35 or over than in those under 30 with respectively (4% versus 3% of diabetics) and (5 % compared to 2% of chronic hypertensives). Sarah Duplaine found 5% of chronically hypertensive patients aged 35 or over. This result is similar to ours, which was 5% chronic hypertension among those aged

35 or over and 2% among those under 35 [4]. Regarding diabetes, our result contrasts with that of Sarah Duplaine who found (1% versus 2% respectively among those under 35 and those 35 or over) and our result was (4% versus 5% respectively among those under 35 and those 35 or over) [4]. According to literature data and our results, these pre-existing pathologies have a tendency to increase with maternal age. Obstetric complications during pregnancy were most common among women aged 35 and over compared to women under 35. We found a statistically significant higher association of gestational diabetes, pregnancy-induced arterial hypertension, preeclampsia, and premature rupture of membranes before 37 weeks of gestation (in women 35 years of age or older versus less than 35 years of age) (Table III). Most research studies found an increase in the prevalence of gestational diabetes in late pregnancies [3, 4, 6]. Our result (10% versus 2%) was close to that of RICHON Lucile through a review of the literature on late pregnancies reported a 9% prevalence of gestational diabetes in women aged 40 and over, compared to 3.5% in age groups of 20 -34 years [6]. According to literature data, increasing maternal age from 35 years increased the risk of high blood pressure. The prevalence of pregnancy-induced hypertension in our study was 5.6% (n=29/515) versus 3.4% (n=18/515) respectively among those aged 35 or over versus under 35 (Table II). Sarah Duplaine in her study found that hypertensive disorders of pregnancy (gestational hypertension, PE, HELLP) were significantly more common in women aged 35 and over [4]. by RICHON Lucile reported that pregnancy-related hypertension was found in up to 14% in women with advanced maternal age compared to 3 to 5% in 20-34 year olds [6].

This is sufficient proof of the place of screening for high blood pressure during prenatal consultations. Finally, in our study, we found a statistically significant higher association in women with a maternal age of 35 years or older compared to those under 35 years of age (Table III).

CONCLUSION

Compared to a pregnancy at a younger age, a pregnancy after the age of 35 exposes you to a higher risk of obstetric complications. Thus, pregnancies from the age of 35 must be considered as high-risk pregnancies

and must be subject to more rigorous monitoring through prenatal consultations.

Conflict of Interest: The authors do not declare any conflicts of interest

Authors' Contribution

The study was designed by Seydou Mariko. The methodology and statistical analysis were carried out by Alou Samaké, Modibo Mariko and Seydou Mariko. The writing was done by Seydou Mariko. All authors had read and approved the final version of the document.

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