GENEVA FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH

UNIVERSITY OF YAOUNDE I - FMSB

Post graduate Training Course in Reproductive Health/Chronic Disease

SYSTEMATIC REVIEW ON THE COMPLICATIONS OF PREGNANCY IN PATIENTS WITH SICKLE CELL TRAIT

Review prepared for the 1st Postgraduate Course

In Reproductive Medicine and Biology, Yaounde, Cameroon

ADAMO BONGOE, MD

Obstetrician and Gynaecologist

University of Yaounde I

Faculty of Medicine and biomedical sciences

Tutors: TEBEU Pierre Marie (MD)

PLAN

- BACKGROUND
- METHODS
- RESULTS
- DISCUSSION
- CONCLUSION
- RECOMMANDATIONS

BACKGROUND

- Sickle cell disease is very frequent in the black population
- Cameroon is situated in “ceinture sicklemique”
- The prevalence: 20 to 40%
- Glutamid acid ⟶ valine
- 2 forms: homozygote (SS), heterozygote (AS)

BACKGROUND

- **Clinical manifestations, complications, well known and understood**
- **Pregnancy complications associated to homozygote sickle cell disease are well known**
- **Evolution of the pregnancy is comparable to that of normal haemoglobin patients**

METHODS

Inclusion criteria

Studies, textbook with at least one pregnancy complication associated with sickle cell trait.

Exclusion criteria

Any study dealing with sickle cell anaemia and pregnancy without a focus in sickle cell trait complication;

Any study dealing only with complication associated with antenatal diagnosis.

METHODS

Methods

- Internet research (Medline, INIST, Cochrane, Internet health)
- Textbook
- Study

RESULTS

4 studies

- 2 full text
- 2 abstracts

RESULTS

Table 1: Characteristics of the studies found

N°	Author (Year)	Country	Sample size	Study period	Study design	Outcome
1	Khalifa (2000)	Saoundi Arabia	61 (SS) 53 (AS) 84 (AA)	1997 - 1998	Case control (retrospective)	Birth weight of fetus, mode delivery Sickle cell crisis Blood transfusion
2	Shyama (2000)	India	11 (SS) 145 (AS) 1270 (AA)	1988 - 1989	Case control	Prevalence of sickle cell disease and trait Vaso occlusive pains Overt infection (respiratory and urinary tract) Toxaemia Thrombo-embolism Anaemia (moderate and severe) Microscopic haematuria Cardiac failure
3	Mansar 2000	Saoudi Arabia	0 (SS) 20 (AS) 20 (AA)	Not precised	Case control	Amount of circulating nucleated red bllod celle as marker of foetal hypoxemia at birth
4	Larrabe	Texas (USA)	0 (SS) 162 (AS) 1422 (AA)	1994 - 1995	Case control	Rate of preeclampsia Gestational age at delivery Birth weight Post-partum endometritis

RESULTS

Fetal complications +/- incidence

Fetal Complication	Type	Authors			
		Shyama	Khalifa	Larrabee	Mansar
Abortion	SS	-	1,6%	-	-
	AS	-	0 %	-	-
	AA	-	0%	-	-
Prematurity	SS	-	0%	-	-
	AS	-	0%	Earlier (DS)	-
	AA	-	0%	Later	-
IUGR	SS	High	19,9%	-	-
	AS	Normal	0%+	Bwt lower (DS)	-
	AA	Normal	0%	Bwt greater	-
Perinatal death	SS	45%	0%	-	-
	AS	-	0%	-	-
	AA	-	0%	-	-
Fetal distress	SS	-	19,6%	-	-
	AS	-	5%	-	-
	AA	-	2.4%	-	-
Nucleated red blood cell	SS	-	-	-	-
	AS	-	-	-	High
	AA	-	-	-	Low

RESULTS

Maternal complications +/- incidence

Complication	Type	Authors			
		Shyama	Khalifa	Larrabee	Mansar
Painful crisis	SS	27,3%	50,8%	-	-
	AS	0%	7,5%*	-	-
	AA	0%	0%	-	-
UTI	SS	36,4%	-	-	-
	AS	6,9%	-	-	-
	AA	1,98%	-	-	-
Severe anaemia	SS	18,2%	42,9%	-	-
	AS	0%	3,7%	-	-
	AA	13,62%	1,2%	-	-
Haematuria	SS	27,3%	-	-	-
	AS	17,2%	-	-	-
	AA	5%	-	-	-
Thromboembolic disease	SS	9,1%	0%	-	-
	AS	0%	0%	-	-
	AA	0,49%	0%	-	-
Pre eclampsia	SS	27,5%	0%	-	-
	AS	17,4%	0%	24,7%	-
	AA	4,2%	0%	10,3%	-
Endometritis	SS	-	-	-	-
	AS	-	-	12,3%	-
	AA	-	-	5,1%	-
Maternal death	SS	0	0	0	-
	AS	0	0	0	-
	AA	0	0	0	-

DISCUSSION

- unable to calculated incidences of complications in total population
- study permits to have broad idea of the complication associated with sickle cell trait

CONCLUSION

- Fetal and maternal complications in sickle cell trait < in sickle cell disease
- Sickle cell trait may be an intermediate situation between AA and SS patients

RECOMMANDATIONS

- Repeat this study
- Carry out studies on complications of sickle cell trait high prevalence region (Africa, Cameroon)

THANK YOU !!