



RATE OF FETAL MACROSOMIA AND ASSOCIATED FACTORS IN CAN THO OBSTETRICS AND GYNECOLOGY HOSPITAL



INTRODUCTION

Birth w

Reflects nutrition and management
Overweight or underweight child
mental development.

Rate of macrosomia : - Increasing
- Depend on definition

- **HCMCTUMPH:** 2005 2
2006 2,66%, 2007 5,54%
- **Ngo Thi Uyen:** 15,7%
- **US, Canada** 10%
- **California** 13,6%

Definition

Large for gestational age

- Above the 90th percentile for that gestational age

Birth weight

- Birth weight of more than 4000g



INTRODUCTION

RISKS

- Maternal morbidity
 - Cesarean
 - Postpartum hemorrhage
- Fetal:
- Difficult delivery
- injury

Diagnosis

- Uterine height, abdominal circumference.
- Ultrasound.
→ wrong rate is still high

Research

- In the world
- In Viet Nam
 - There is no general data.
 - Can Tho: few research.

Proceed the study



INTRODUCTION



AIMS OF THE STUDY

1

- Confirm the rate of fetal macrosomia in CTOSH.

2

- Concerned factors .





SUBJECTS OF THE STUDY



Population-based

- All pregnant women come for delivery in Can Tho city

Population-studied

- All pregnant women come for delivery in Can Tho Obstetrics and Gynecology Hospital

Population-selected

- All pregnant women have Gestational age ≥ 37 weeks in CTOGH from 11/2015 to 03/2016.

SUBJECTS AND METHODOLOGY



Selecting standard

- Gestational age ≥ 37 weeks.
- From 11/2015 to 03/2016.
- Agreement.

Eliminating standard

- Multifetal pregnancy.
- Stillbirth.
- Unidentify the gestational age
- Mental illness pregnant.

SUBJECTS AND METHODOLOGY



Methodology

- Study method

- Descriptive cross-sectional study

Sample size
$$n = Z_{(1-\alpha/2)}^2 \frac{p(1-p)}{d^2}$$

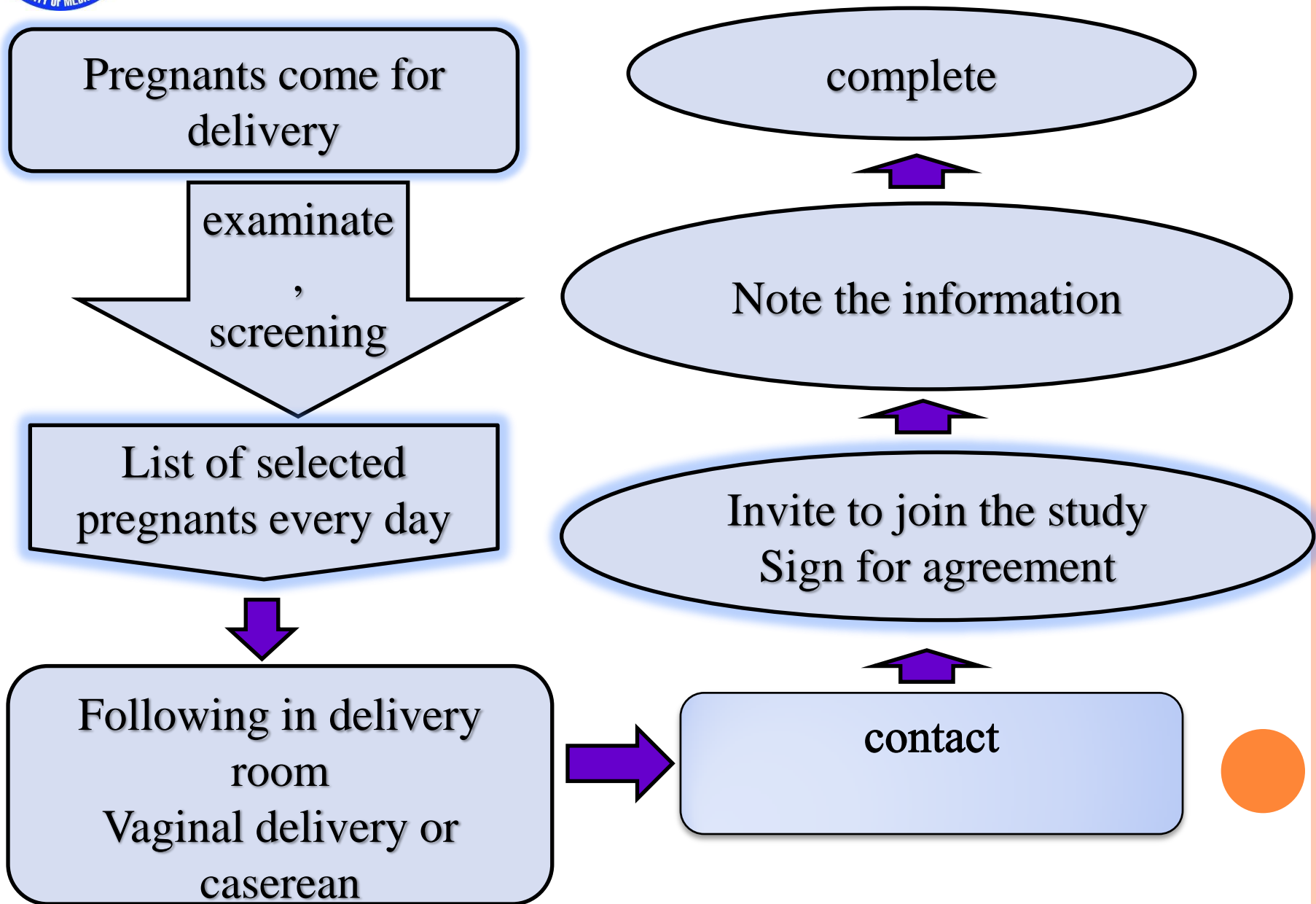
- $p=15,7\%$, $d=2\%$, $Z(1-\alpha/2)=1,96 \Rightarrow n \approx 1270$.
- There are **1357 case** .

Selecting

- All cases

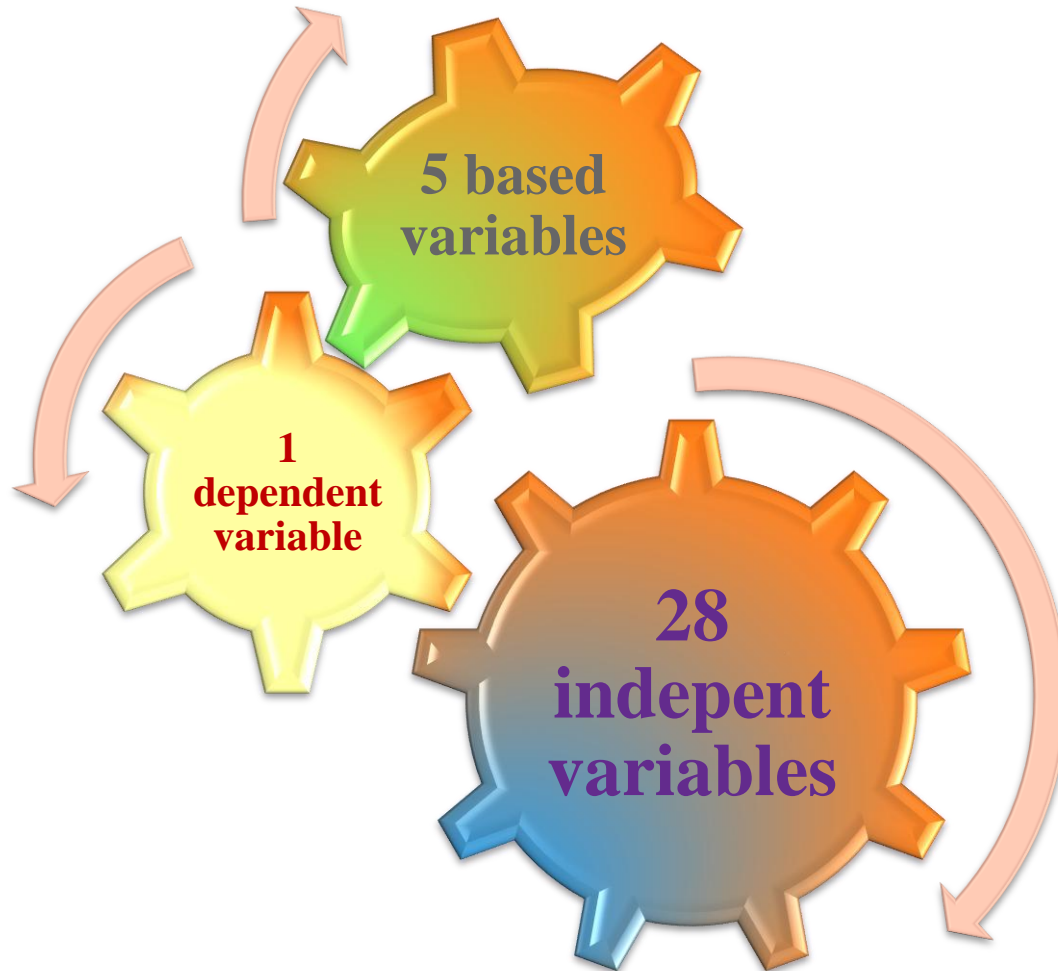


COLLECTING MAP





ANALYSIS VARIABLES





RESULTS AND DISCUSSIONS

- From 11/2015 to 03/2016, there are 1650 pregnant women came to CTOGH for delivery.
- In those, there are 1357 pregnant women were suitable for selecting standard → invite all of them to the study and no one refused
- There are 255 pregnant women left who have gestational age < 37 weeks, 30 unidentified gestational age pregnant women, 3 cases have stillbirth and 5 cases have multifetal.





RESULTS AND DISCUSSIONS



1. Epidemiology

Factors	Results
Maternal age	25-35 yrs (79%); average: 28 5,7 yrs
Residence	urban: 42,5% ; Rural: 57,5%
Career	Housewife: 43,5% Diference: 6,9%-16,7%
Academic	elementary and high school: 31,9% và 35,3% After high school: 19,7%
Nation	Kinh: 96,7%



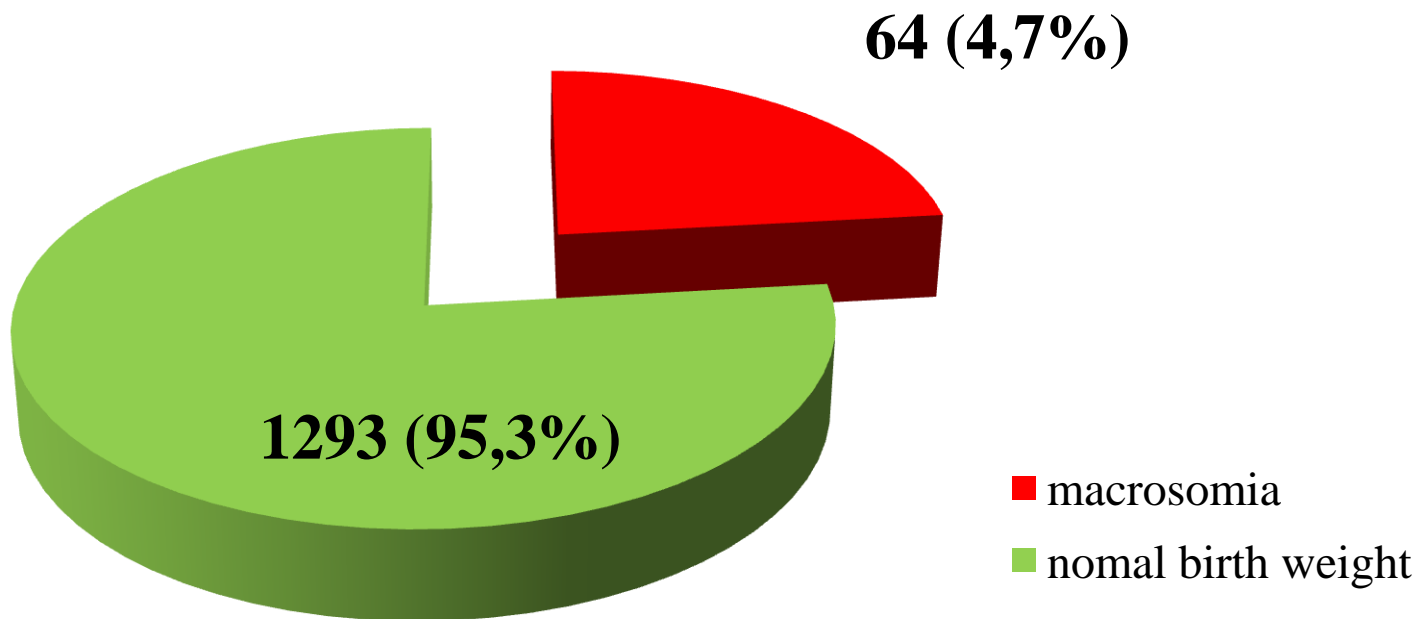
RESULTS AND DISCUSSIONS



Rate of fetal macrosomia

Birth weight $\geq 4000\text{g}$, 64 cases, rate 4,7%

KTC 95%: 3,6-5,8





RESULTS AND DISCUSSIONS



2. Rate of fetal macrosomia

Authors	Area	Selecting-definition	Rate
In Viet Nam			
Le Thi Yen (2002) và Buasaykham (2007)	Center obstetrics and Gynecology Hospital	$\geq 4000\text{g}$	2,6 and 2,09
Ngo Thi Uyen (2008)	Hai Phong	$\geq 38\text{w}$ and > percentage 90 th	15,7
Lam Duc Tam (2014)	Can Tho	37w and \geq	23,25



RESULTS AND DISCUSSIONS

2. Rate of macrosomnia

Author	Area	Selecting standard and definition	Rate (%)
In the world			
Stotland N.E (2005)	North California	$\geq 4000\text{g}$	13,6
De Amorim MM (2009)	Brazil	$\geq 4000\text{g}$	5,4
Mahin Najafian (2011)	Iran	$\geq 4000\text{g}$	9
Shouyong Gu (2012) and Li G (2014)	China	$\geq 4000\text{g}$	11,67 North 8,5



RESULTS AND DISCUSSION



3. Multivariate analysis affective factors

Maternal age	Fetal Macrosomia (n,%)	Normal weight fetal (n,%)	p	OR*	95%CI
< 35	47 (73,4)	1103 (85,3)		1	-
≥ 35	17 (26,6)	190 (14,7)	0,04	2,1	1,0-4,2

* **Mahin Najafian:** 60% macrosomia pregnant ≥ 35 yrs

* **Stotland N.E :** pregnant 30-40 yrs is risk factor

* **Yi Li:** OR=1,08; 95%CI [1,03-1,12]





RESULT AND DISCUSSION



3. Multivariate analysis affective factors

Periods	Macrosomia (n, %)	Normal Weight fetal (n,%)	p	OR*	95% CI
Regular	51 (79,7)	1165 (90,1)	0,049	1	-
Illregular	13 (20,3)	128 (9,9)		2,2	1-5





RESULTS AND DISCUSSION



3. Multivariate analysis affective factors

factors	Macro (n=64)%	Nomal (n=1293)%	OR*	p
Diabetes in history				
No	63(98,4)	1292(99,9)	1	0,916
Yes	1(1,6)	1(0,1)	1,6	
Macrosomnia in history				
no	61(95,3)	1286(99,5)	1	0,473
yes	3(4,7)	7(0,5)	9	

*our research OR= 9
(singlevariateanalysis)

*Phan Xuan Khoa (2007) OR= 14,5

*Mahin Najafian (2012) OR= 10

*Nkwaabong E (2015) OR= 13,1



RESULTS AND DISCUSSIONS



3. Multivariate analysis affective factors

Factors	Macrosomia (n=64)%	Nomal weight fetal (n=1293)%	OR*	p
Maternal height				
< 155 cm	10(15,6)	444(34,3)	1	
≥ 155 cm	54(84,4)			
Weight before pregnancy				
< 45 kg	3(4,7)	45(70,3)		
45- < 60kg	16(25)			
≥ 60kg				
BMI before pregnancy				
< 23	3(4,7)	332(25,7)	1	
≥ 23	61(95,3)	961(74,3)	3,7	0,116
Weight gain				
< 12 kg	16(25)	683(52,8)	1	
12- < 20kg	34(53,1)	579(44,8)	0,9	0,714

*our research: OR=7
(singlevariateanalysis)
*Phan Xuan Khoa (2007) OR=
2,65
*Yi Li (2015) OR= 1,13



RESULTS AND DISCUSSIONS



3. Multivariate analysis affective factors

factors	Macrosomi a (n=64)%	Nomal birth weight fetal (n=1293)%	OR*	p
Times of antenatal visits				
< 6	2(3,1)			
≥ 6	62(96,9)			
Diabetes in pregnancy				
No	62(96,9)	1291(99,9)	1	
Yes	2(3,1)	2(0,1)	14,3	0,141
preeclampsia				
No	63(98,4)	1290(99,8)	1	

*Our research OR= 20,8
(singlevariateanalysis)

*De Amorim MM (2009) PR= 8,9

*Mohammadbeigi (2013) OR= 11,9



RESULTS AND DISCUSSIONS



3. Multivariate analysis affective factors

Gestational age	Macrosomia (n, %)	Normal (n, %)	p	OR	95% CI
*Vu Thi Duyen, Le Thi Yen: GA of macrosomia > 40w higher than < 40w		859 (66,4)			
*Le Quang Thanh: macrosomia in preterm higher than full-term infant (2,5-10% with 0,8-1%)		432 (33,4)	0,004	2,6	1,4-4,9
≥42 tuần	1 (1,0)	2 (0,2)	0,081	22,5	0,7-740

*Boyd: macrosomia: 21% in 42w, 12% in 40w

→ Determine exactly gestational age, reduce the rate of preterm

RESULTS AND DISCUSSIONS



3. Multivariate analysis affective factors

Factors	macroso mia (n=64)%	Nomal (n=1293)%	OR*	p	95
Uterine height					
< 35 cm	43(67,2)	1228(95)	1		
≥ 35 cm	21(32,8)	65(5)	4,9	0,000	2,3
Abdomin al circums nce					
< 100 cr	12(18,8)	993(76,8)	1		
≥ 100 cr				0,000	2,6-12,1

*Miller:
macroso
mia
pregnancy
uterine hei
*Ngo Thi
uterine wei
macroso



Nguyen Thi H, 30 yrs,
PARA 1001,
10/2/2016.



RESULTS AND DISCUSSIONS



3. Multivariate analysis affective factors

Factors	Macroso mia (n=64)%	Nomal (n=1293)%	OR*	p
BPD				
*Best 2002: Ultrasonic measurement of fat under the thighs	481(37,2)	812(62,8)	1	1,1
*Mallin 2016: Not enough evidence of MRI is more sensitive than 2D ultrasound in measurement of waist circumference	481(37,2)	812(62,8)	1 6,3	0,015
≥ 4000g	5(39,1)	1(0,1)		
AFI				
< 5 cm	1(1,6)	94(7,3)	1	
5 – 25 cm	62(96,8)	1182(91,4)	2	0,5
> 25 cm	1(1,6)	17(1,3)	1,1	0,952

*Ultra weigh
Sensiti
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RESULTS AND DISCUSSIONS



3. Multivariate analysis affective factors

Blood glucose levels

Glucose	Macrosomia (n=64,%)	Nomal (n=1293, %)	p	OR	95% CI
≤6,4 mmol/l	55(85,9)	1181(91			
>6,4 mmol/l	9(14,1)	112(8,7)	0,483	1,4	0,6-3,5

* Nguyen Duc Vy 2004

* Vetr 2005





RESULTS AND DISCUSSIONS



3. Multivariate analysis affective factors

Factors	Macrosomi a (n=64)%	Nomal (n=1293)%	OR*	p
Method of delivery				
Vaginal delivery	23(35,9)			
Caserean	41(64,1)			
Sex				
female	23(35,9)	632(48,9)	1	
male	41(64,1)	661(51,1)	2,1	0,028

* Nkwabong E (2014): OR= 2,2; p< 0,05
* Stotland NE (2005): OR= 1,65; p< 0,05



CONCLUSIONS

Rate of macrosomia

- Birth weight $\geq 4000\text{g}$ are 4,7%
- KTC 95%: 3,6-5,8





CONCLUSIONS

Affective factors

factors	OR	CI 95%	P
Maternal age ≥ 35	2,1	[1,0-4,2]	0,04
Illregular periods before pregnancy	2,2	[1-5]	0,049
Gestational age from 40- < 42 weeks to 37- < 40 weeks	2,6	[1,4-4,9]	0,004
Uterine height ≥ 35 cm	4,9	[2,3-10,4]	0,000
abdominal circumference ≥ 100 cm	5,6	[2,6-12,1]	0,000
Ultrasound FL ≥ 70 mm	6,3	[1,5-27,2]	0,013
Boy	2,1	[1,1-3,9]	0,028



RECOMMENDATIONS

1 Broadcasting about fetal macrosomia.

2 With high risk pregnancy, careful management, good weight and glucose control.

3 Combined many methods to early diagnosis fetal macrosomia.

4 Research for maternal's weight control in pregnancy



Thank for listening!

TRUNG TÂM Y DƯỢC CẦN THƠ

