




PERINATAL RISK FACTORS FOR NEONATAL ASPHYXIA

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**WHAT'S THE
“NEONATAL ASPHYXIA” ?**

Neonatal asphyxia

- APGAR score at 1 minute ≤ 7
- Interruption in oxygen delivery to the fetus
 - Hypoxia
 - Hypercapnia
 - acidosis
 - Death (unless resuscitated)

Neonatal asphyxia evaluation

APGAR SCORING SYSTEM

	0 Points	1 Point	2 Points	Points totaled
Activity (muscle tone)	Absent	Arms and legs flexed	Active movement	
Pulse	Absent	Below 100 bpm	Over 100 bpm	
Grimace (reflex irritability)	Flaccid	Some flexion of Extremities	Active motion (sneeze, cough, pull away)	
Appearance (skin color)	Blue, pale	Body pink, Extremities blue	Completely pink	
Respiration	Absent	Slow, irregular	Vigorous cry	

Severely depressed	0-3
Moderately depressed	4-6
Excellent condition	7-10

Neonatal asphyxia evaluation

- Total Score = 10

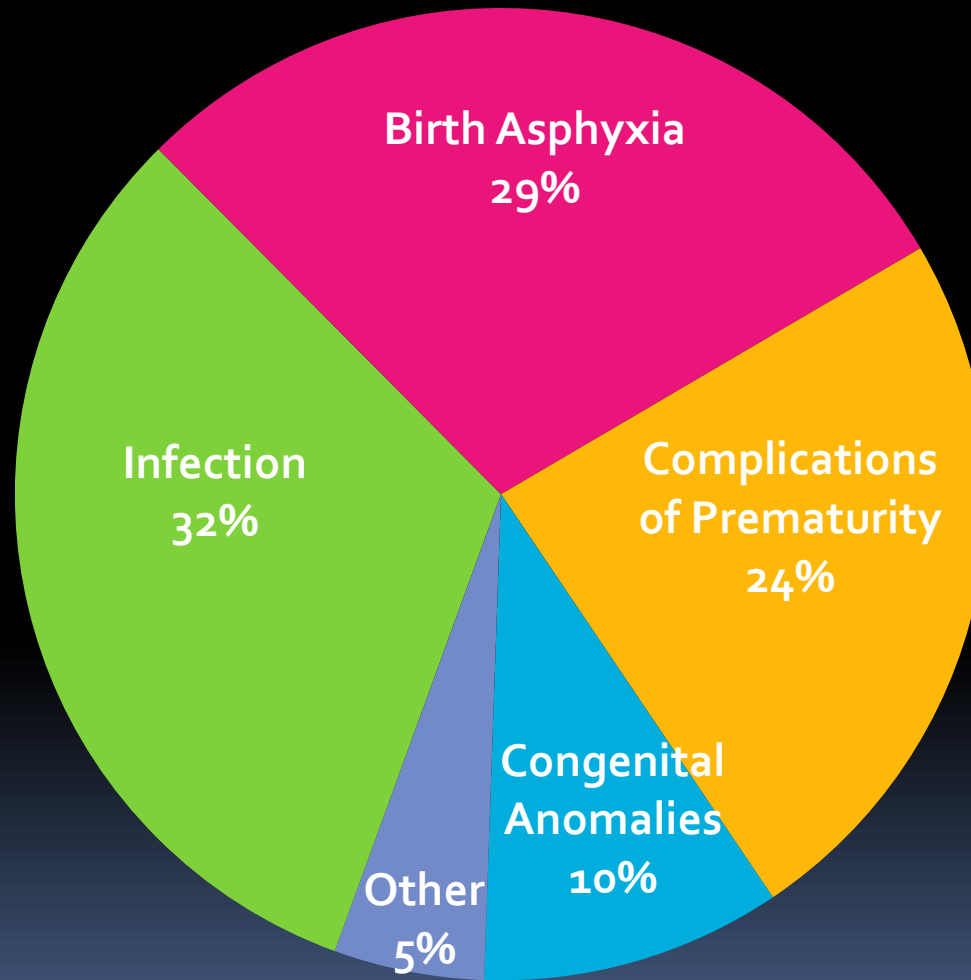
- score 8-10 normal
- score 5-7 mild birth asphyxia
- score 3-4 moderate birth asphyxia
- score 0-2 severe birth asphyxia

Neonatal asphyxia

- major cause of neonatal death
- Predisposing factors
 - quality of maternal care during child delivery
 - preventable



Causes of Neonatal Mortality



Incidence of neonatal asphyxia

- In Thailand (2004-2009)^[1]
 - More than 30 per 1,000 live births
 - Over than the criteria established by the tenth of the National Health Development Plan
 - Less than 30 per 1,000 live births
- The Master Plan for Health System Development in Phitsanulok province (2012)
 - 49.5 per 1,000 live births^[2]

[1] วีรชัย เตชะเสนา. ปัจจัยเสี่ยงต่อการเกิดภาวะขาดออกซิเจนของทารกแรกเกิดในจังหวัดน่าน. อนุตรดิตถ์เวชสาร 2555;27(2):53-64

[2] สำนักงานสาธารณสุขจังหวัดพิษณุโลก. แผนแม่บทการพัฒนาระบบบริการสุขภาพสาขาการให้บริการผู้ป่วยทารกแรกเกิด พื้นที่เครือข่ายบริการที่ 2. สืบค้นจาก

www.plkhealth.go.th/ncd/htm/work/serviceplan/4_4.doc (19 พฤศจิกายน 2556)

Incidence of neonatal asphyxia

- labor room in Naresuan University hospital
 - 2011 = 64.1 per 1,000 live births
 - 2012 = 82.9 per 1,000 live births



Objective


- find the risk factors of neonatal asphyxia
 - ▣ develop the preventive protocol

Methods

- case control study design
 - The study group (n=60 neonates)
 - Inclusion criteria : apgar score below or equal 7 at 1 minute
 - Exclusion criteria : GA < 28 week, intrauterine fetal death, congenital anomaly, birth weight below 1,000 g.
 - Control group (n=180 neonates)
 - with apgar score higher than 7 at 1 minute at the same time




Methods

- Risk factors
 - socio-economic factors
 - antepartum factors
 - intrapartum factors
 - fetal factors
 - univariate analysis and multiple logistic regression analysis
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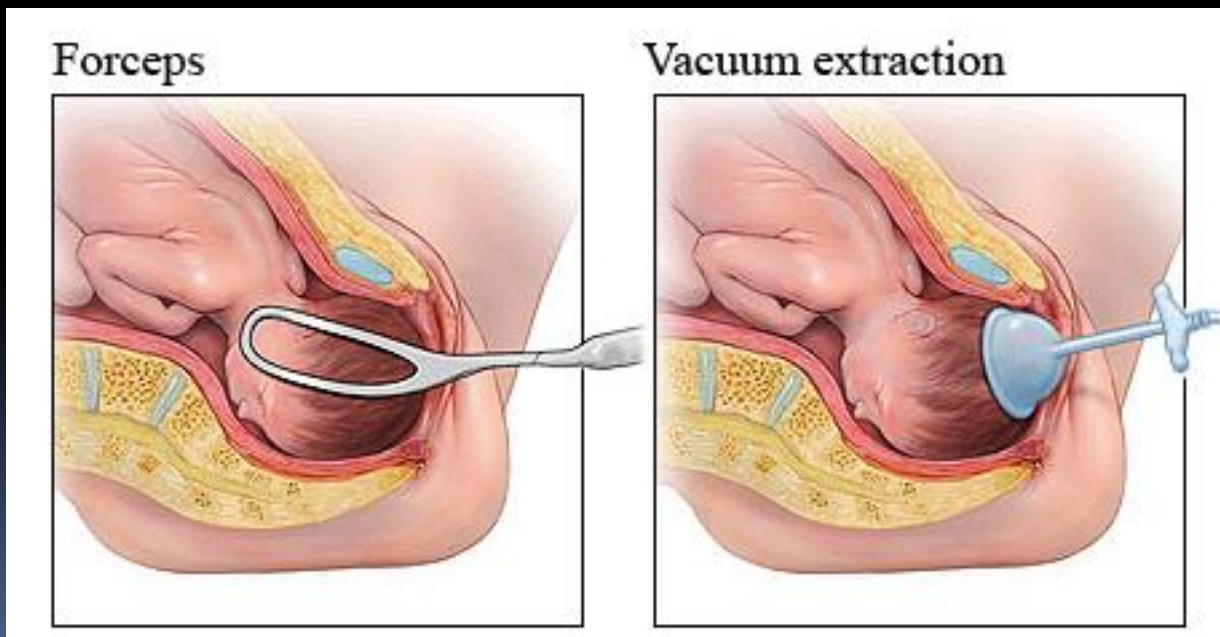


Results

- The incidence of neonatal asphyxia
 - 2011 = 64.1 per 1,000 live births
 - 2012 = 82.9 per 1,000 live births
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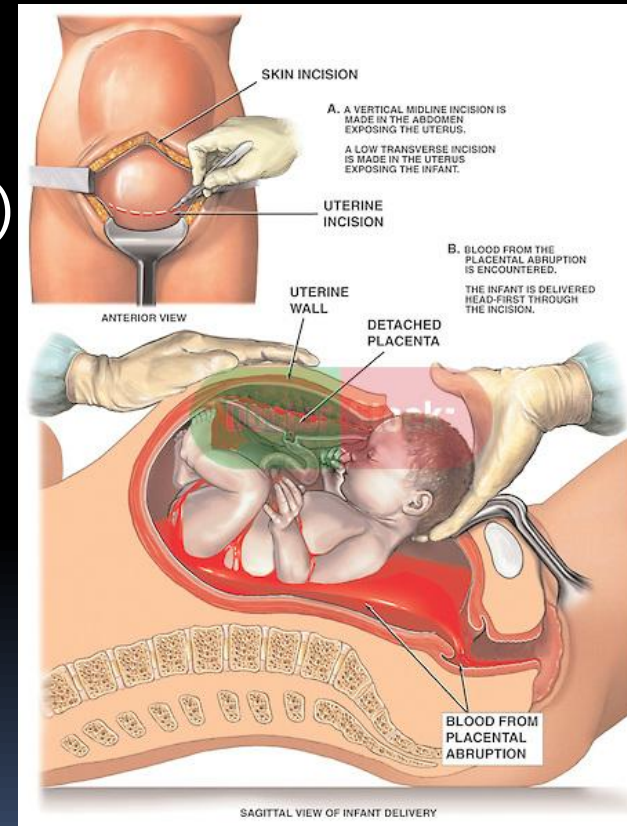
Results

- Risk factors of neonatal asphyxia
 - **Instrumental delivery**
(OR 5.703, 95% CI 2.131-15.261)



Results

- Risk factors of birth asphyxia
 - **Ceasarian section**
(OR 2.417, 95% CI 1.105 – 5.290)






Results

- Risk factors of birth asphyxia
 - **Gestational age below 37 weeks**
(OR 3.810, 95% CI 1.786 – 8.131)



Conclusion

- Risk factors in Naresuan University hospital
 - instrumental delivery, ceasarian section, and gestational age below 37 weeks
 - Developing more effective guideline
 - prevent birth asphyxia in Naresuan University hospital
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Advisors



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Thank you for your attention

