OBSTETRICAL EMERGENCIES – OUTSIDE EMERGENCY NURSES’ COMFORT ZONE

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Mexico

- Mexico is located in North America and is bordered by the United States to the north, Belize and Guatemala to its south, the Gulf of Mexico to its east and the North Pacific Ocean to its west.

- The country's total area is 1,972,550 square kilometers (761,601 square miles), or nearly 3 times the size of Texas.
The most current estimate for the population of the city of Mexico City, Mexico is about 8,864,000, which is an increase of about 0.15% from the last record of the population (2013).

Mexico City is the capital as well as the largest city in the entire country is located in the south-central part of the country.
Mexico, City

- The city, along with its metropolitan area, is the largest Spanish-speaking city in the entire world.
- Based on the total land area and the total population of the city, the population density of Mexico City is about 15,000 people per square mile.
Introduction

**Goal 4: Reduce Child Mortality**

**Target 5.** Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

**Indicators**

13. Under-five mortality rate (UNICEF-WHO)
15. Proportion of 1 year-old children immunized against measles (UNICEF-WHO)

**Goal 5: Improve Maternal Health**

**Target 6.** Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

**Indicators**

17. Proportion of births attended by skilled health personnel (UNICEF-WHO)
A pregnant woman’s body undergoes various normal physical changes that can be obvious or quite subtle. These changes are necessary to assist fetal development and prepare the body for labor.

- **Respiratory System**
- **Cardiovascular System**
- **Gastrointestinal System**
- **Breasts**
- **Endocrine System**
- **Abdomen**
- **Urinary System**
- **Musculoskeletal System**
- **Skin**
**RESPIRATORY SYSTEM CHANGES**

The respiratory rate rises to compensate for increased maternal oxygen consumption, which is needed for demands of the uterus, the placenta, and the fetus.

- Increased respiratory rate
- Increased minute ventilation
- Respiratory alkalosis
- Decreased functional capacity
- Increased tidal volume
- Pregnant women may feel out of breath

**CARDIOVASCULAR SYSTEM CHANGES**

During pregnancy, the entire cardiovascular system is readjusted, blood volume increases greatly, more blood vessels grow, and the pressure of the expanding uterus on large veins causes the blood to slow in its return to the heart.

- Increased cardiac output
- Increased blood volume
- Elevated resting heart rate
- Decreased peripheral resistance
- Decreased blood pressure (second trimester)
GASTROINTESTINAL SYSTEM CHANGES

As the uterus enlarges, it rises up and out of the pelvic cavity. This action displaces the stomach, intestines, and other adjacent organs.

- Progesterone causes relaxation of the lower esophageal sphincter.

  - Decreased gastric motility/constipation
  - Increased reflux
  - Heartburn

CHANGES OF THE BREASTS

- Breasts may become **larger and more tender** because of increased levels of the hormones estrogen and progesterone. As the due date approaches, hormone changes will cause pregnant women’s breasts to get even bigger to prepare for breastfeeding.

- **Nipples** may stick out more.

- By the third trimester, colostrum, a yellow, watery pre-milk, may leak from the nipples.

Breast Anatomy

- Pectoralis minor muscle
- Pectoralis major muscle
- Subcutaneous fat pad
- Pectoral fat pad
- Areola
- Nipple
- Lactiferous sinus
- Lobes of the mammary gland
- Rib
- Chest wall
ENDOCRINE SYSTEM CHANGES

Hormonal changes readjust the entire body system.

- The placenta acts as a temporary endocrine gland during pregnancy. It produces large amounts of estrogen and progesterone by the 10th to 12th week of pregnancy. It serves to maintain the growth of the uterus, helps to control uterine activity, and is responsible for many of the maternal changes in the body.

- Pregnant women may feel warmer or experience "hot flashes" caused by increased hormonal level and basal metabolic rate.

- The parathyroid gland increases in size slightly to meet the increased requirements for calcium.

- Near the end of term, the posterior pituitary will begin to secrete oxytocin that will serve to initiate labor.

- At birth, the anterior pituitary will begin to secrete prolactin. This stimulates the production of breast milk.

ABDOMEN CHANGES

During the second trimester the abdomen begins to expand and by the end of this trimester, the top of the uterus will be near the rib cage.

A pregnant woman's abdomen may ache on one side or the other, as the abdominal wall and the ligaments that support the uterus are stretched.
**URINARY SYSTEM CHANGES**

- The expanding uterus puts pressure on the bladder, urethra, and pelvic floor muscles, which leads to temporary bladder control problems like frequent urination and even leaking of urine when sneezing, coughing, or laughing.
- The kidneys must work extra hard excreting the mother's and the fetus waste products. The kidneys must work extra hard to excrete the waste products of both the mother and fetus.

**MUSCULOSKELETAL SYSTEM CHANGES**

There is a realignment of the spinal curvatures to maintain balance; this produces a shift in the posture with exaggerated lumbar lordosis, leading to the typical gait of late pregnancy.

Increased ligamental laxity, caused by increased levels of relaxin, contribute to back pain and pubic symphysis dysfunction. The ligaments that hold the pelvic bones together gradually loosen to prepare the mother for labor and birth.

**SKIN CHANGES**

- **Human Skin Diagram**
  - Hair
  - Epidermis
  - Dermis
  - Subcutaneous Tissue

- Stretch marks (Striae gravidarum) usually appear in the second half of pregnancy on the thighs, buttocks, abdomen, and breasts. These scars are caused by the stretching of the skin.
- Hyperpigmentation of the umbilicus, nipples, abdominal midline (linea nigra), and face (chloasma) are common due to the hormonal changes of pregnancy.
- Hyperdynamic circulation and high levels of estrogen may cause spider veins (spider naevi) and reddening of the palms (palmar erythroema).
Hormone changes make many women experience changes in hair and nail texture and growth during pregnancy.

Leg cramps can be caused by fatigue from carrying pregnancy weight, compression of the blood vessels in the legs, excess phosphorous, a shortage of calcium or magnesium, and fluctuation of pregnancy hormones.

Feet and ankles may swell because of the extra fluid in the body during pregnancy.

A slight increase in body temperature in early pregnancy is noted. The temperature returns to normal at about the 16th week of gestation.

### Changes in Body Weight

<table>
<thead>
<tr>
<th>0 to 15 weeks</th>
<th>16 to 27 weeks</th>
<th>28 to 40 weeks</th>
<th>Total weight gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3 pounds (1-1.5 kg)</td>
<td>16-17 pounds 7.5 kg</td>
<td>25-35 pounds (12 to 17 kg)</td>
<td>25-35 pounds (12 to 17 kg)</td>
</tr>
</tbody>
</table>

#### Fetus and support tissues/fluids

- Baby: 6-8 pounds (3 to 4 kg)
- Placenta: 1-2 pounds (0.5 to 1 kg)
- Uterus: 1-2 pounds (0.5 to 1 kg)
- Amniotic Fluid: 2-3 pounds (1 to 1.5 kg)

#### Maternal fluids and storage

- Breast: 1-2 pounds (0.5 to 1 kg)
- Blood: 3-4 pounds (1.5 to 2 kg)
- Protein & Fat: 8-10 pounds (4 to 5 kg)
- Body Fluids: 3-4 pounds (1.5 to 2 kg)
Life-Threatening Obstetric Emergencies

- Vaginal Bleeding
- Decreased Fetal Movement
Life-Threatening Obstetric Emergencies

- Preterm Contractions
- Leakage of Fluid from Vagina

Some vaginal discharge is normal, however unusual discharge might be the result of an infection.

Vaginal yeast infection

Cervical infection

Pre-Term Labor - possible causes and risk factors:
- Excess contractions
- Too much fluid
- Extra babies
- Ischemia
- Placental abruption
- Cervical factor
- PPROM (Preterm premature rupture of the membranes)

Hormonal permission

Bacterial infection

Uterine clock
Life-Threatening Obstetric Emergencies

- Headache
- Malaise
Do not mistake normal vital signs of pregnancy for signs of shock.

- Normal pulse: 10–15 beats faster
- Blood pressure: 10–15 mmHg lower
- 30–35% blood loss before significant blood pressure change
Childbirth is seldom an unexpected event, but there are occasions when it becomes an emergency.
Scene Size-Up

- Take standard precautions.
  - Gloves and eye protection are a minimum if delivery is already begun or is complete.
  - If time allows, a mask and gown should also be used.
- Consider calling for additional resources.
Patient Assessment

- Form a general impression.
  - The general impression should tell you whether the patient is in active labor or if you have time to assess and address other possible life threats.
Patient Assessment

- Evaluate
  - Level of consciousness
  - Airway
  - Breathing
  - Circulation

- Transport decision
  - If delivery is imminent, prepare to deliver at the scene.
  - If delivery is not imminent, prepare the patient for transport and or specialized care.
Physical Exam

- Assess the major body systems.
- Assess for fetal movement.
- For a pregnant patient in labor, focus on contractions and possible delivery.
- If you suspect that delivery is imminent, check for crowning.
Vital Signs

- Include pulse; respirations; skin color, temperature, and condition; and BP
- Pay attention to tachycardia and hypotension or hypertension.
- Hypertension, even mildly elevated BP, may indicate more serious problems.
Equipos de Respuesta Inmediata / Rapid Response Team Obstetric
Abordaje para la disminución de la Mortalidad Materna

Disminución de la Morbilidad y Mortalidad Materna

Prevención de Embarazo de Alto Riesgo en los 3 niveles

Vigilancia Prenatal en Medicina Familiar (al menos 7 consultas)

Atención Hospitalaria Oportuna e Integral
TIPO DE MUERTE *

Directas 71 %
- Preeclampsia 31 %
- Hemorragia obstétrica 15 %
- Otras 25%

Indirectas 29 %

PREVISIBILIDAD AL INGRESO AL HOSPITAL EN DONDE FALLECIO *

SI = 41 %

NO = 59 %

n = 153

* Comités Institucionales de Estudios en Mortalidad Materna. Enero-Septiembre 2008
Propósito

- Proporcionar atención inmediata e integral a la mujer con emergencia obstétrica
- Garantizar la suficiencia de insumos apropiados para la atención de las emergencias obstétricas
Coordinación entre servicios del Hospital y con autoridades Delegacionales

UTQ (admisión, labor, expulsión), Quirófano, Hospitalización

Ginecobstetra
Dx. complicación grave o estado crítico

“Equipo de acción rápida operativo” Proporciona atención integral y oportuna

Coordinación con Directivos de otro hospital
Nota: La “Caja Roja Obstétrica”, no substituye los “carros rojos” de paro cardiorrespiratorio, ni los del área de choque o cuidados intensivos.
## Contenido

<table>
<thead>
<tr>
<th>5</th>
<th>Hidralazina ampolletas de 20 mg</th>
<th>Solución Hartman 1,000cc</th>
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<tbody>
<tr>
<td>20</td>
<td>Sulfato de Magnesio ampolletas de 1g</td>
<td>Solución glucosada 5% 1000cc</td>
</tr>
<tr>
<td>5</td>
<td>Difenilhidantoinato ampolletas</td>
<td>Solución Haemacel 1,000cc</td>
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<tr>
<td>10</td>
<td>Oxitocina ampolletas de 5 U</td>
<td>Seroalbúmina humana en frasco</td>
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<tr>
<td>1</td>
<td>Ergonovina 2mg ampolletas</td>
<td>Manitol 500 cc</td>
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<tr>
<td>10</td>
<td>Gluconato de Calcio 1g, ampolletas</td>
<td>Solución salina isotónica 0.9% 1,000</td>
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<tr>
<td>1</td>
<td>Nifedipina frasco con 20 capsulas 10 mg</td>
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</tr>
<tr>
<td>1</td>
<td>Heparina frasco 25 000 UI en 5 ml</td>
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<tr>
<td>1</td>
<td>Digoxina ampolletas 2ml (0.5mg/ml) caja</td>
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</tr>
<tr>
<td>2</td>
<td>Diacepmam ampolletas 10mg/2ml</td>
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<tr>
<td>2</td>
<td>Fenobarbital ampolletas</td>
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<tr>
<td>5</td>
<td>Carbetocina 100 µg (refrigeración)</td>
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<tr>
<td>2</td>
<td>Catéter largo para P.V.C</td>
<td></td>
</tr>
<tr>
<td>2 c/u</td>
<td>Cánulas de Guedell No. 3 y 4</td>
<td></td>
</tr>
<tr>
<td>1 c/u</td>
<td>Sondas endo-traqueales No. 6, 7, 8</td>
<td></td>
</tr>
</tbody>
</table>
HORA DE ORO

Percepción de preeclampsia

100%

Tiempo Cero

60%

De 1 a 20 minutos

50%

Diagnóstico y tratar la causa

- Trimestre 1: aborto y sus complicaciones, acústico, malformaciones
- Trimestre 2 y 3: placenta previa, abruption de placenta, ruptura uterina
- Hemorragia periparto (HPP): cuarto Tr
- Toxemia tercera + mastija
- Trasformación de testes
- Trombina: activación de la coagulación

Establecido y decidido

- Suministre oxígeno (máscara o Venturi)
- Catéteres de venas, catéter # 14-6-16
- Torre inmunología para exámenes
- Inicie 2000 ml de cristaloides (salinado, con el sistema que tenga disponible)
- Clasificación el estado de choque * y con el
- Iniciar la respiración con cristaloides 3 a 1
- Si es choque grave inicie 2 unidades SGO
- Idealmente ABH negativo
- Mantenga la temperatura corporal
- Evacuar vólvulo y mialgia hipertensión

Precaución: evitar la reposición rápida y/o de grandes volúmenes en pacientes con preeclampsia, anemia y cardiopatías

No mejora y/o necesidad de droga inmediata

- Remita:
  - Transporte adecuado
  - Personal capacitado
  - Líquidos IV + medicamentos

Mejora

- Continúa vigilancia activa

<10%

Tiempo 60 minutos

Muerte

Clasificación del choque hipovolémico

<table>
<thead>
<tr>
<th>Clasificación</th>
<th>Presión Arterial Diastólica (mmHg)</th>
<th>Graduo de choque</th>
<th>Críticos a niños</th>
<th>Citrílicos en la primer hora</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&gt; 90</td>
<td>Comprendido</td>
<td>3000 - 4000 ml</td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>80 - 90</td>
<td>Lento</td>
<td>3000 - 4000 ml</td>
<td></td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>60 - 80</td>
<td>Moderado</td>
<td>4000 - 5000 ml</td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td>40 - 60</td>
<td>Lento</td>
<td>4000 - 5000 ml</td>
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<tr>
<td>Cardiopatías</td>
<td>30 - 50</td>
<td>Moderado</td>
<td>4000 - 5000 ml</td>
<td></td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>20 - 40</td>
<td>Agudo</td>
<td>5000 - 6000 ml</td>
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</tr>
<tr>
<td>Anemia</td>
<td>10 - 30</td>
<td>Agudo</td>
<td>5000 - 6000 ml</td>
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<tr>
<td>Cardiopatías</td>
<td>&lt; 10</td>
<td>Agudo</td>
<td>5000 - 6000 ml</td>
<td></td>
</tr>
</tbody>
</table>

El grado de choque lo define el peor parámetro encontrado.