Postpartum Complications

Marjorie Bridges, RNC, MN, AWHNP-BC
Pacific Northwest Region Consortium
Spring 2015

Postpartum Complications Objectives

• Review disorders associated with postpartum period: hemorrhage, infections, venous thromboembolism.
• Discuss nursing care of patients with the above disorders.
• Identify nursing interventions to meet special needs of parents and families related to Perinatal loss and grief.
• Introduction and overview of perinatal mood disorders
• AHT prevention through the period of purple crying education

POSTPARTUM COMPLICATIONS

• Most women have a normal postpartum course.
• Comprehensive, frequent assessments help with early diagnosis and prompt treatment.
• Collaboration between Perinatal nurses and health care provider is essential.

POSTPARTUM HEMORRHAGE

• 1/3 of maternal deaths
• Little warning
• Often unrecognized until profound signs and symptoms
• > 500cc to 1000cc blood loss
• > 10 point drop in HCT or need for blood transfusion

POSTPARTUM HEMORRHAGE

Early/Acute/Immediate
• Within 24 hours of birth
• Usually seen in the hospital
• Heavy bleeding = 1 pad saturated/15 min

Delayed/Secondary/Late
• After the first 24 hours
• < 6 weeks postpartum
• Usually happens at home

PPH Triggers

• Be vigilant in appreciating:
  • HR > 110
  • EBL > 500 ml, Vaginal delivery
  • EBL > 1000 ml, C/S delivery
  • Blood Pressure ≤85/45 (>15% drop)
  • Oxygen Saturation <95%
Be prepared with Triggers!

- When triggers present:
  - Weigh pads
  - Confirm status of blood availability
  - Confirm T & S done; Confirm blood availability
  - Have uterotonics readily available

Physiologic Adaptation of Pregnancy Provides Protection

Antepartum Volume Expansion
  - Blood volume 30-50%

Autotransfusion and Uterine Contractility
  - PP contractions placental separation occlude major myometrium vessels auto transfuse mother, recirculating pooled blood back into maternal circulation
  - Normal hypercoagulopathy of pregnancy clotting factors

Active Management of the 3rd stage

- Oxytocin IVPB or IM with delivery of anterior shoulder or prior to placenta
- Cord clamping not delayed beyond 2 min
- Vigorous fundal massage (at least 15 sec) after placenta
- Controlled cord traction
- Saves blood loss at delivery

Signs and Symptoms of Uterine Atony

- Marked hypotonia of the uterus
- Leading cause of PPH – 80-90% of all cases

Signs and Symptoms:
- Boggy, large uterus
- Heavy, bright red vaginal flow
- Expelled clots

Causes of Atony

- Marked hypotonia of the uterus

Interventions???
Lacerations of the Genital Tract

**Location:** cervix, vagina and perineum

**Signs and Symptoms:**
- Bright red/heavy bleeding with a firmly contracted uterus
- Steady stream or trickle of unclotted blood or comes in spurts

**Laceration Causes**
- Large fetal head for size of pelvis
- Difficult second stage
- Operative vaginal delivery
- Scars from infections, surgery or injury
- Precipitous delivery
- Perineal or vaginal varices

**Causes of PPH- Retained Placental Fragments**
- Manual removal of placenta
- Abnormal adherence of the placenta
- Over distension of uterus
- Prolonged labor with maternal exhaustion
- High parity
- Abruption placenta

**Signs and Symptoms of Retained Placental/Membrane Fragments**
- Uterus remains large
- Heavy vaginal flow, usually beginning more than 24 hours after birth (around 7 days postpartum)
- Abnormal progression of lochia

**Interventions?**
Subinvolution

When the involution is impaired it is called subinvolution

Predisposing factors
- Multiparity
- Overdistention
- Maternal illness
- Cesarean birth
- Difficult delivery
- Uterine prolapse
- Fibroids

Aggravating Factors
- Retained placental fragments
- Infection

Causes of Hematomas

A collection of blood in the connective tissue due to vessel wall damage: can be vulvar, vaginal, or retroperitoneal

- Prolonged pressure of the fetal head on vaginal mucosa
- Operative vaginal delivery
- Nicking of blood vessel during episiotomy or laceration repair

MANAGEMENT OF PPH

EARLY RECOGNITION & TX

- Determine cause
- Check location and consistency of uterus
- Notify the provider
- Monitor vital signs
- Monitor blood loss: weigh pads & chux 1 G = 1 mL
- IV access and give crystalloid solution (LR or NS)
- Give medications as ordered:
  - Oxytocin 10-40 Units – IM, IVPB solution
  - Methylergonovine 0.2 mg IM
  - Hemabate:15-m-PGF 2a  0.25 mg IM/IMM
  - Misoprostol 200 to 1000 mcq per rectum

Nursing Interventions for PPH

- Fundal massage
- Record VS, O2 sat every 5 minutes
- Record cumulative blood loss, weigh pads
- Empty bladder; consider indwelling catheter
- IV access: at least 18 gauge; obtain labs with IV start
- Obtain baseline labs
- Increase intravenous fluid
- Increase or start oxytocin
- Add other uterotonics as needed
- Determine and treat etiology – uterine atony in ~75% cases
- Confirm blood availability: Order 2 units RBCs if ongoing bleeding; Consider ordering plasma
- I & O: Hourly urine output
- Maintain adequate ventilation: pulse oximeter and oxygen per mask as needed at 6-10 liters
- Draw blood for type and crossmatch and hematocrit/hemoglobin
- Give plasmaexpanders and packed RBC/blood products as ordered
- Keep warm
- At risk for Disseminated Intravascular Coagulation
GO TO OR

If uterotonics and bedside interventions do not control the bleeding
Move to the OR
• Consider D&C, intrauterine balloon, or other surgical intervention
• Labs – CBC and coag studies repeat every 30 minutes with ongoing bleeding; Order needs to be place in Epic
• Repeat hemabate as often as every 15 mins
• Order blood products- transfuse as clinically indicated

DO NOT wait for labs to transfuse. Transfuse for clinical signs/symptoms

MANAGEMENT OF PPH

• Bimanual compression
• Manual exploration of uterine cavity
• Transfuse blood products
• Surgical management – D&C, Balloon Placement or hysterectomy

GOALS

• Core temp greater than 35.9 C
• PH Greater than 7.3
• Transfuse (1:1:1)= 6 RBC's: 6 Plasma: 1 adult dose platelets
• Hemostasis Goals:
  – Symptomatic anemia subsides
  – INR less than 1.7
  – Fibrinogen is greater than 100mg/dl
  – Platelet count greater than 100,000

“The clinical symptoms of blood loss (low blood pressure, fast pulse, pallor and sweating, signs of hypovolemia and impending shock) are often the primary indicators for intervention. However, relying on the onset of such symptoms may lead to delayed intervention, resulting in increased morbidity and mortality.”

B.S. Kodkany and R.J. Derman. Pitfalls in Assessing Blood Loss and Decision to Transfer

What is Hemorrhagic Shock?

Goal: RN Recognize Bleeding Emergency
"Shock is defined as an inadequate circulation of blood resulting in cellular hypoxia."

- Persistent shock results in cellular dysfunction and organ failure
- Hemostasis by surgical intervention is often a major component of success
- Response to inadequate oxygen delivery: cellular metabolism becomes anaerobic, a condition tolerated for a limited period

<table>
<thead>
<tr>
<th>Class of hemorrhagic shock</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood loss (mL)</td>
<td>Up to 750</td>
<td>750-1500</td>
<td>1500-2000</td>
<td>&gt; 3000</td>
</tr>
<tr>
<td>Blood loss (blood volume)</td>
<td>Up to 15%</td>
<td>15-30%</td>
<td>30-40%</td>
<td>&gt; 40%</td>
</tr>
<tr>
<td>Pulse rate (per minute)</td>
<td>&lt; 100</td>
<td>100-120</td>
<td>120-140</td>
<td>&gt; 140</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Normal</td>
<td>Normal</td>
<td>Decreased</td>
<td>Decreased</td>
</tr>
<tr>
<td>Pulse pressure (mm Hg)</td>
<td>Normal or increased</td>
<td>Decreased</td>
<td>Decreased</td>
<td>Decreased</td>
</tr>
<tr>
<td>Respiratory rate (per minute)</td>
<td>14-20</td>
<td>20-40</td>
<td>40-60</td>
<td>&gt; 60</td>
</tr>
<tr>
<td>Urine output (mL/hour)</td>
<td>&gt; 30</td>
<td>30-60</td>
<td>60-15</td>
<td>&lt; 15</td>
</tr>
</tbody>
</table>

Hemorrhagic Shock
- Central
  - Thirst
  - Agitation, Restless
  - Anxiety, Confusion
  - Decreased level of consciousness
  - Coma
- Respiratory
  - Tachypnea
  - Decreased O2 Sat
- Muscular
  - Pain
  - Weakness
  - Deep Tendon Reflexes
- Kidneys
  - Decreased urine output
- Metabolic
  - Lactic acidosis
- Heart
  - Narrowing pulse pressure
    - Tachycardia & weak pulse
    - Postural hypotension
- Skin
  - Cyanotic, cold & pale
  - Prolonged cap refill

Long-term complications of Postpartum Hemorrhage
- Blood Component transfusion reactions/complications
- Temporary of permanent kidney failure
- Anemia
- Fluid overload (pulmonary edema, Dilutional coagulopathy)
- Sepsis
- Asherman’s Syndrome (intraterine scaring/adhesions)
- Infertility
- Death

Postpartum Infection
- Infection of genital tract within 28 days
- Temp = > 38° C or 100.4 ° F X 2 during the first 10 days PP excluding the first 24 hours
- Major cause of M&M in world only 6% in US

Endometritis
- Most common cause
- Begins as localized infection at placental site
- 1-3% vaginal births
- 10-50% cesarean births
- Polymicrobial
- Leukocytosis & increase SR
Predisposing Risk Factors for Endometritis

- Prolonged labor
- Premature or prolonged rupture of membranes
- Hemorrhage
- Soft tissue trauma or hematoma
- Invasive techniques
- Operative procedures
- Careless hand washing or breaks in aseptic technique
- Improper perineal care

Signs and Symptoms of Endometritis

- Foul-smelling lochia
- Delayed involution
- Temperature elevations - > 38.3
- Increased pulse rate (100-140)
- Uterus tender on palpation on PP day 3
- Symptoms of severe infection: chills, fever, tachycardia, malaise, anorexia, headache, backache, severe after pains, tender uterus

GOT G.A.S?

Often Atypical
- Fever
- Tachycardia
- Fever with Hypotension
- Increasing abdominal pain
- Severe muscle pains
- Pain in one are of the body

Nursing Interventions for Endometritis

- Notify provider
- Determine source of infection
- Administer broad-spectrum antibiotics
- Administer analgesics
- Increase fluid intake (2000 to 3000 mL)
- Adequate rest/sleep
- Semi-sitting position or HOB elevated

WOUND INFECTIONS

- C/S incisions episiotomy/lacerations
- Erythema, edema, warmth, tenderness, drainage, wound separation
- Antibiotic therapy
- Incision & drainage
- Wound packing
URINARY TRACT INFECTIONS

- 2-4% of women
- Risk Factors:
  - Frequent pelvic exams
  - Epidural, genital tract injury, cesarean birth
  - Urinary catheterization
- Signs and Symptoms:
  - Dysuria, frequency, urgency, hematuria, pyuria, low grade temperature, supra pubic pressure
  - CVA may indicate upper UTI

MASTITIS

- 2nd to 4th week of breastfeeding
- Unilateral, infected nipple fissure, blocked ducts
- S/S: chills, fever, malaise, local breast tenderness
- Treatment: antibiotics, warm compresses and continue breastfeeding

MASTITIS

- 2nd to 4th week of breastfeeding
- Unilateral, infected nipple fissure, blocked ducts
- S/S: chills, fever, malaise, local breast tenderness
- Treatment: antibiotics, warm compresses and continue breastfeeding

Venous Thromboembolism (VTE)

- Deep venous thrombosis (DVT)
- Pulmonary embolism (PE)* leading cause of maternal mortality in the US

Predisposing Risk Factors

- Obesity
- Increasing maternal age >35
- Increasing parity
- Prolonged inactivity – bed rest
- Hx DVT of PE
- Varicose veins
- Maternal anemia
- Pre-eclampsia
- Cesarean birth
- Hemorrhage
- Pelvic cellulitis
- Polyhydramnios
- Hyperemesis gravidarum
- Cigarette smoking

Signs and Symptoms of DVT or PE

- Positive Homan’s Sign (?)
- Calf pain/tenderness, especially when walking
- Swelling of affected extremity
- Warmth, erythema and discoloration (red)
- Dilated superficial veins and cyanosis
- Leg fatigue

Signs of thrombophlebitis (superficial)

- Diminished peripheral pulse
- Chills, fever, tachycardia
- Abrupt onset of severe leg pain
- Tenderness along entire course of involved vessel

Prevention of VTE

- Early ambulation
- Compression stocking
- Intermittent pneumatic compression devices
Nursing Actions for DVT

- Notify the provider
- Treatment
  - Bed rest
  - Elevate extremity
  - Compression stockings
  - Analgesics
  - Anticoagulant therapy – IV Heparin and warfarin
  - Antibiotic therapy

PULMONARY EMBOLISM

A blood clot is carried to the pulmonary artery

Classic Triad:
- Dyspnea (Acute)
- Chest pain (Pleuritic)
- Hemoptysis

S/S: Tachypnea, dyspnea, chest pain, respiratory rales, air hunger, tachycardia, chest pain, cyanosis, cough and sweating, sudden collapse

Treatment:
- Increase HOB
- Administer O₂
- Pulse Oximetry
- Heparin therapy

Perinatal Loss

Types of Loss:
- Miscarriage
- Fetal demise
- Fetal anomalies incompatible with life
- Stillbirth

How can we help?
The ability to give compassionate care will hold you up

- Presence
- Inclusion
- Tender Care
- Meaningful relationship between caregivers and parents
- It is ok to cry

Conceptual Model of Parental Grief

Three Phases of Grief
- Acute Distress
  - Shock and numbness, bad dream or trancelike state
  - First task of Grief – accepting the reality of the loss

- Intense Grief
  - Emotions: loneliness, emptiness, yearning, guilt, anger, fear; disorganization and depression; physical symptoms

- Reorganization
  - Parents attempt to understand “why?” – cause of death, “why me?”

- Anticipatory Grief
Perinatal Loss – Options for Parents

- Seeing and holding
- Bathing and dressing
- Visitation with other family members or friends
- Religious rituals/funeral arrangements
- Special Memories
- Momentos

Bereavement Prayer

A Prayer for Baby and Its Family

Lord God, thank you for this precious child who now rests in your loving arms. We know from your word that you formed each one and you do not forget us. We rejoice that this little angel is with the heavenly chorus praising you forever. Dearest Lord, we ask your comfort for this child’s parents, grandparents and extended families who grieve the loss of this little one. Grant them your strength and courage to trust in your power to transform all sorrow and suffering into blessings and hope. Surround each one with an added measure of your love and give them knowledge of our peace.

Amen

Perinatal Mood Disorders

The Thief that Steals Motherhood

Baby → Postpartal → Severe → Postpartum
Blues  Exhaustion  Depression  Psychosis

Mild ← Severesevere → Most

Perinatal Mood and Anxiety Disorders

#1 Complication of Pregnancy 20%

- Gestational diabetes (2-5%)
- Pre-eclampsia (5-8%)
- Preterm Delivery (12%)

Affects 15-28% of all pregnant and postpartum women
Suicide Rates increase 44% in the first postpartum year

10% dads

TRANSITORY POSTPARTUM DEPRESSIVE SYNDROME

Also known as:
- “Baby Blues”
- “Maternity Blues”
- “Milk Fever”

Improves quickly with self care, rest nutrition

Blues or PMAD?

Timing- Severity -Duration

- 80% experience transient depressive symptoms between 2nd and 10th postpartum days
- Usually weeping; many times with periods of elation
- Lasting 2-3 days then disappears without psychiatric interventions
Interventions......

- Anticipatory Guidance
- Follow-up during first two weeks postpartum
- 2 REM cycles of sleep per day
- Let friends and family help
- Eat a well balanced diet
- Plenty of fluids, primarily water
- Limit caffeine
- Continue taking prenatal vitamins
- Light exercise daily
- Take time for yourself
- Make time for adult relationships

Perinatal Mood Disorders

POSTPARTUM DEPRESSION
- **Etiology:**
  - biological, psychological, environmental, cultural/myths of motherhood
- **Risk Factors:**
  - Pregnancy Factors
  - Childbirth Factors
  - Postpartum Factors

POSTPARTUM MOOD DISORDERS

Who is at risk for postpartum mood disorders?

- Age > 30
- History of mental illness
- Low socioeconomic status
- Multiparity
- Hx of depression or postpartum depression (50% reoccurrence)
- History of irregular menstrual cycles
- History of pre-menstrual syndrome

POSTPARTUM MOOD DISORDERS

Symptoms of Postpartum Depression: Up to 28%; onset within first year after birth; 4 or more symptoms present every day for at least 2 weeks

- Loss of energy or fatigue
- Psychomotor agitation or retardation
- Feelings of worthlessness or unreasonable guilt
- Evidence of diminished ability to think or concentrate
- Recurrent thoughts of death or suicide
- Guilt & shame
- Poor appetite with weight loss or overeating with weight gain
- Insomnia or hypersonic
- Loss of usual interest or decrease in sexual activities

May become a chronic long-term illness if left untreated

POSTPARTUM MOOD DISORDERS

Treatment for PPD:

- Antidepressant Medications: selective serotonin re-uptake inhibitors (SSRI), Tricyclic antidepressants (TCA), Monoamine oxidase inhibitors (MAO)
- Support groups, group psychotherapy, interpersonal psychotherapy
  - Depression After Delivery call 1-800-944-4PPD
  - Postpartum Support International call 1-805-967-7636

POSTPARTUM MOOD DISORDERS

Postpartum Psychosis

Symptoms: occurs rarely (1-2 mothers/1000)

- Inability to sleep for days at a time
- Hallucinations, paranoia, confusion, incoherence
- Suicidal thoughts or fearfulness when handling the baby
- Crying >15-20 mins on 2-3 consecutive days
- Religious preoccupations that are not normally expressed
- Chronic feelings of not wanting the baby
- General fear or anxiety

Treatment: Hospitalization and Medications
- Life threatening illness
The Case of Andrea Yates

- June 20, 2001 Andrea drowned her five children: Noah, 7; John, 5; Paul, 3; Luke, 2; Mary, 7 months
- History of PP depression
- Exhibited "overwhelming anxiety and sadness after the birth of her 4th child – hospitalized with "major depressive disorder"
- After birth of Mary – rehospitalized twice before killing her children

"Please tell parents...

NEVER SHAKE A BABY!"

Pop Quiz

Since 2007 Children’s Seattle has experienced a 55% increase in infants admitted with abusive head trauma (AHT)
- True
- False

Answer Q1

Since 2007 Children’s Seattle has experienced a 55% increase in infants admitted with abusive head trauma (AHT)
- True

In fact, nationwide admissions of infants with AHT have increased 65%

PURPLE Q2

Of infants who are victims of AHT die within a few hours to a few days of the shaking.
- True
- False

Answer Q2

¼ of infants who are victims of AHT die within a few hours to a few days of the shaking
- True

And, 50% - 90% of surviving babies are left with challenges that range from serious learning disabilities to being in a permanent vegetative state.
**PURPLE Q3**

- A short fall can produce the same characteristic injuries as "Shaken Baby Syndrome".
  - True
  - False

<table>
<thead>
<tr>
<th>Answer Q3</th>
</tr>
</thead>
</table>
| A short fall can produce the same characteristic injuries as "Shaken Baby Syndrome".
  - False
  - "The chance that a fall of 10 – 20 feet has a probability of less than 1:1 million of causing the characteristic injuries of SBS."
  - David Chadwick MD – Researcher
  - Interestingly, caretakers often report a history of a fall from a couch or surface |

**PURPLE Q4**

A cardinal manifestation of SBS is retinal hemorrhage.
  - True
  - False

<table>
<thead>
<tr>
<th>Answer Q4</th>
</tr>
</thead>
</table>
| A cardinal manifestation of SBS is retinal hemorrhage.
  - True
  - 2/3 of SBS victims have retinal hemorrhages too numerous to count. These bleeds occur as the head of the infant is whipped back and forth. The acceleration & deceleration forces that occur can actually cause a split in the retina. |

**Never Shake a Baby**

- Rotational movement
- Shearing forces
- Tearing blood vessels
- Bleed – subdural and subarachnoid spaces
- Hypoxia
- Destruction of brain tissue
- Cerebral edema
- Increasing ICP

**PURPLE Q5**

- Tossing and bouncing a baby on your knee can cause the cardinal signs of SBS.
  - True
  - False
Tossing and bouncing a baby on your knee can cause the cardinal signs of SBS.

- False

The forces involved in SBS are distinctly different from those involved with bouncing a baby on your knee, swinging, or having a baby in a backpack.

All babies cry, but some babies cry more than others even if the baby is healthy and normal.

- True
- False

If new parents understand and anticipate normal newborn crying and then develop coping strategies, the incidence of Shaken Baby Syndrome will be reduced.

- True
- False

Areas where Hospitals have implemented the "Period of Purple Crying" program have experienced significant reductions in the incidence of Shaken Baby Syndrome.
And that's where you come in!

**Before Discharge:**

- A 3 minute script
- **Parent Video**
- A booklet
- Consistent information is presented in Overlake's Childbirth Preparation classes and in the Women's Clinic

**Before Discharge in the Childbirth Center:**

- A 3 minute script for Mother/Baby nurses
- Take home parent video and booklet
- Consistent information is presented in Childbirth Preparation Classes (10 minute script) and, reinforced by the Lactation Department, Labor and Delivery, and during the postpartum follow up appointment.

**Before Discharge in the Emergency Department:**

- Reinforce messages of PURPLE
- Take home parent video and booklet

"Please tell parents"

Questions?

Bibliography available from National Center on Shaken Baby Syndrome. Please visit [www.dontshak.org](http://www.dontshak.org)