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Antepartum Hemorrhage: A Risk Factor for PTB/LBW and newborn Mortality

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Obstetric Conditions that lead to Preterm Birth

- **Preterm pre-labor rupture of membranes (PPROM)**
- **Severe pre-eclampsia/eclampsia (PE/E)**
- **IUGR**
- **Cholestasis**
- **Antepartum hemorrhage (APH)**

The Impact of APH

- **APH complicates 3-5% of pregnancies and is a leading cause of perinatal and maternal mortality worldwide** (RCOG, 2011; Ngeh & Bhide, 2006; Wasnik & Naiknaware, 2015)
- **APH is listed as a maternal complication in 15.1% of fetal and 7.1% of early newborn deaths worldwide** (Vogel et al. 2014)
- **APH is responsible for an estimated 6.5% of maternal deaths worldwide** (Say et al., 2014)
- **Up to 1/5 of all very preterm babies are born in association with APH** (Neilson, 2007)

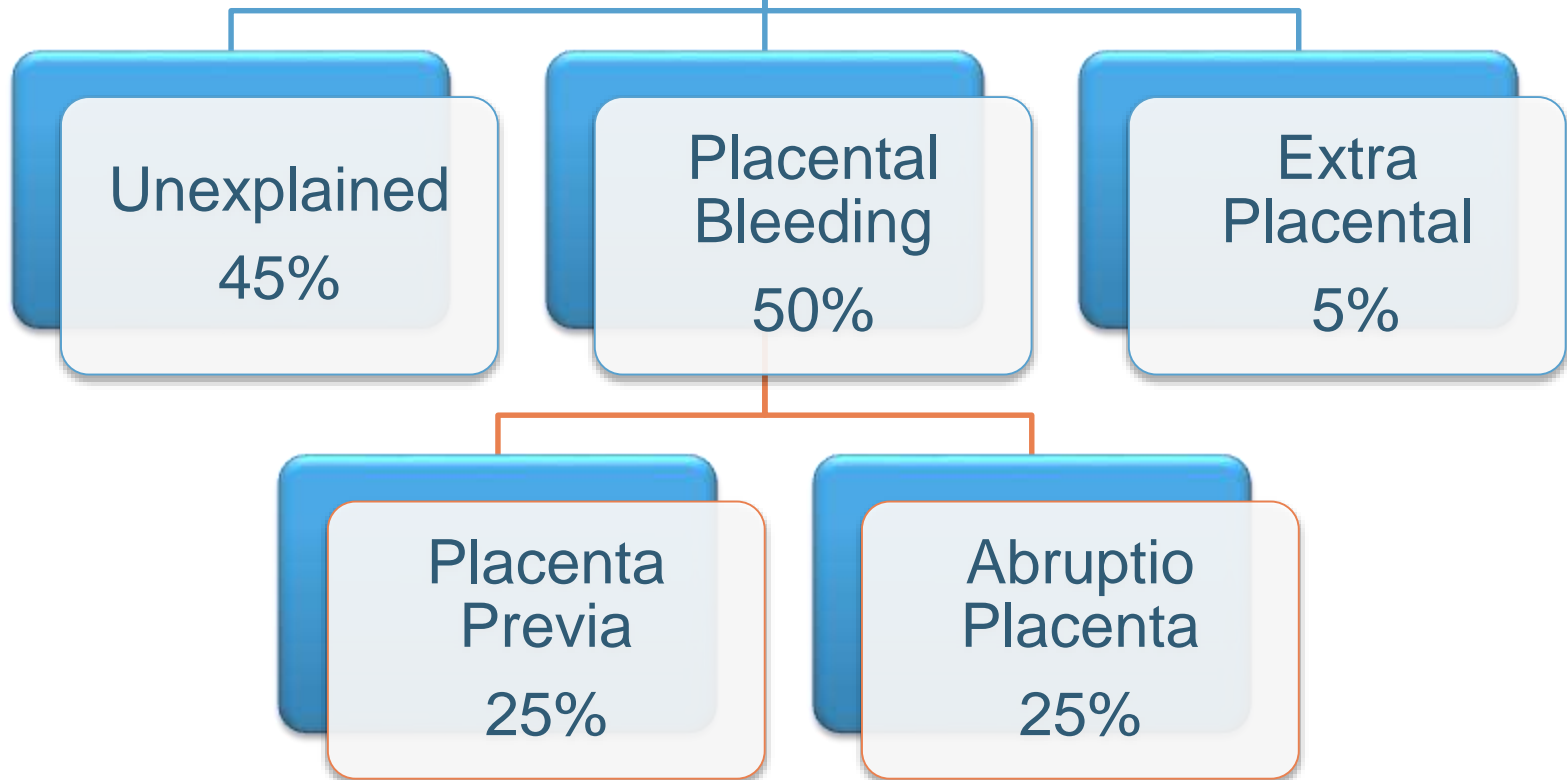
Antepartum Hemorrhage

- Defined as bleeding after 24 weeks of pregnancy and prior to the birth of the baby
- Amount of bleeding varies and may be concealed
- Complicates 3-5% of pregnancies
- Up to 1/5 of very preterm babies are born too soon due to APH
- Associated with newborn cerebral palsy

(Born to Soon, 2012; Berhan 2014 ;RCOG, 2011)



Causes of APH



(Ngeh & Bhide, 2006; Giordano et al, 2010)

Risk factors for Placenta Abruption

- Hypertension, PE/E
- Trauma (auto accidents, falls)
- Violence (GBV, IPV)
- Fetal growth restriction
- Non vertex presentation
- Polyhydramnios
- Previous abruption
- Low BMI
- Assisted reproductive techniques
- Intrauterine infection
- PROM
- Smoking
- Drug misuse
- Maternal thrombophilias
- Advanced maternal age
- Multiparity

(Giordano et al, 2010; RCOG, 2011; Ngeh & Bhide, 2006; Tkkanen, 2010)

Risk Factors for Placenta Previa

- Previous placenta previa
- Previous c-section
- Previous termination of pregnancy
- Multiparity
- AMA >40
- Multiple pregnancy
- Smoking
- Assisted conception
- Deficient endometrium

(Giordano et al, 2010; RCOG, 2011)

Prevalence of Placenta Previa and Abruption

- **Placenta previa complicates 5.2/1000 pregnancies** (Cresswell, 2013)
- **Placenta abruption complicates 0.2 to 1 percent of pregnancies** (Ananth & Kinzler, 2016)
- **The highest incidence of placenta abruption is between 24-27 weeks with 50% of cases occurring before 37 weeks** (Tikkaenen, 2010)
- **Perinatal death rate is 12% with abruption and 15-20% with placenta previa** (Behan 2014)

When APH occurs...

- Discuss and prep for possible blood transfusing and hysterectomy.
- Stabilize and transfer to facility that can perform operative delivery, resuscitation & blood transfusion.
- If high risk for APH manage all care in appropriate facility
- Mother's health may be compromised and this will impact her ability to care for the newborn

Maternal Management of APH

- Clinical assessment with APH
 - Pulse and BP
 - Abdominal palpation
 - Speculum exam
 - Digital exam avoided
 - Ultrasound – position of placenta, does not dx abruption
 - Blood – coagulation, cross match
- Deliver if fetal death, fetal compromise or maternal hemodynamic instability
- Consider expectant management & vaginal delivery

When assessing blood loss...

- Assess for signs of clinical shock, and fetal compromise as indicators of volume depletion
- Bleeding from the introitus may not represent the total blood loss

Blood Loss	Definition
Minor hemorrhage	Blood loss less than 50 ml that has settled
Major Hemorrhage	Blood loss of 50-1000 ml, with no signs of clinical shock
Massive Hemorrhage	Blood loss greater than 100 ml and/or signs of clinical shock

(Ngeh & Bhide, 2006;
RCOG, 2011)

Management of the Fetus

- High risk of premature delivery which increases the risk of perinatal mortality
- Upon arrival
 - Assess FHR
 - Administer ACS if 24 – 34 weeks
 - Administer O2 to mother
 - Notify pediatric team – plan for emergency management of asphyxia & preterm baby
 - Prep for blood transfusion
 - Prepare for rapid del., prep for C/S

Maternal Complications and Management

■ **Complications:**

- Caesarean hysterectomy
- PPH
- Infection
- Shock
- DIC
- Prolonged hospital stay
- Psychological sequelae
- Complications of blood transfusion & surgery
- Severe anemia
- Renal failure

Management may include:

- Close monitoring
- Blood transfusion
- Urine output
- Arterial and central venous access
- Thromboprophylaxis

Newborn Complications and Management

- **Complications:**
 - Fetal hypoxia
 - SGA, IUGR
 - Fetal anemia
 - Low Apgar scores
 - Fetal death
- **Management may include:**
 - Resuscitation
 - Kangaroo Mother Care
 - Positive airway pressure therapy
 - Surfactant
 - Intensive care



Improving Outcomes

- **HTSP, BP/CR**
- **Better nutrition and overall health of pregnant women**
- **Improved reproductive, antenatal, obstetric and newborn care**
- **Activity precautions during pregnancy**
- **Early diagnosis of previa**
- **Cautious approach to management of light bleeding in pregnancy.**

(Ngeh & Bhide, 2006; Nashreen ***; Tikkanen et al, 2012)

References

- Ananth, CV & Kinzer, WL. Placental abruption: clinical features and diagnosis. 2016. UpToDate: <http://www.uptodate.com/contents/placental-abruption-clinical-features-and-diagnosis>
- Berhan Y. Predictors of perinatal mortality associated with placenta previa and placental abruption: an experience from a low income country.2014. Journal of Pregnancy. <http://dx.doi.org/10.1155/2014/307043>
- Cresswell JA, Ronsmans C, Calvert C, Filippi V. Prevalence of placenta praevia by world region: a systematic review and meta-analysis. 2013. Trop Med Int Health. 18(6): 12-24.
- Giordano R, Caciatore A, Cignini P, Vigna R & Romano M. Antepartum haemorrhage. Journal of Prenatal Medicine. 2010; 4 (1): 12-16.
- March of Dimes, PMNCH, Save the Children, WHO. Born Too Soon: The Global Action Report on Preterm Birth. Eds CP Howson, MV Kinney, JE Lawn. World Health Organization. Geneva, 2012.
- Nasreen F. Incidence, causes and outcome of placenta previa. JPMI. 2011. 17(1): 99 – 104

References cont.

- Ngeh N & Bhide A. Antepartum haemorrhage. *Current Obstetrics & Gynaecology*. 2006. 16, 79-83.
- Neilson JP. Interventions for suspected placenta praevia (revision). *The Cochrane Library*. 2007, Issue 4.
- Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 63: Antepartum Haemorrhage. 1st edition. November 2011.
- Say L. et al. Global causes of maternal death: a WHO systematic analysis. *Lancet Global Health*. 2014. 2: e323-33.
- Tikkanen M et al. Decreasing perinatal mortality in placental abruption. *Acta Obstetrica et Gynecologica Scandinavica*. 2013. 92: 285-305.
- Tikkanen M. Placental abruption: epidemiology, risk factors and consequences. *Acta Obstetrica et Gynecologica Scandinavica*. 2011. 90: 140-149.
- Vogel JP et al. Maternal complications and perinatal mortality: findings of the World Health Organization multicountry survey on maternal and newborn health. *BJOG*. 2013. 1:76-88
- Wasnik SK & Naiknaware SV. Antepartum haemorrhage: causes & effects on mother and child: an evaluation. *Obstetrics & Gynecology International Journal*. 2015. 3(1).
- World Health Organization, USAID, Maternal Child Survival Program. WHO recommendations on interventions to improve preterm birth outcomes: highlights and key messages from the World Health Organization's 2015 Global Recommendations. World Health Organization and Jhpiego Corporation 2015.