

# CLINICAL CORRELATES IN ANESTHESIA

Ma Concepcion L Cruz



## BACKGROUND

- The UP-PGH Department of Anesthesiology is developing a Master of Clinical Science (MCS) in Anesthesiology Program as part of a Two-Track Training program offered for qualified anesthesiology senior residents who wish to pursue post graduate subspecialty clinical training integrated with an academic program. The subspecialty programs offered by department are as follows: Neuroanesthesia, Obstetric anesthesia, Pediatric anesthesia, Pain management, Regional anesthesia and Thoraco-cardiovascular anesthesia.
- If qualified for the two track program, the trainee will graduate as a fellow of the subspecialty together with the title MCS in Anesthesiology (Subspecialty) upon completion of the two track program.
- The proposed MCS Program in Anesthesiology has a total of 30 units broken down as follows: Core courses 11 units, Major courses 12 units, and Elective courses 7 units.
- One of the major courses to be developed for the program is: CLINICAL CORRELATIONS IN ANESTHESIA (Subspecialty). This is the course I would like to develop for my instructional design 221 assignment.

# CLINICAL CORRELATES IN ANESTHESIA

## Preliminaries: Course Information

**Course Title:** Clinical Correlations in Anesthesia (Obstetric Anesthesia)

**Course Description:** Based on the history and clinical presentation of the parturient, the senior resident will critically assess the pertinent factors that may impact anesthetic management. The senior resident will formulate a safe and effective peri-operative anesthetic plan for the high risk parturient and her baby based on a comprehensive understanding of the pathophysiology of the disease present in the parturient.

# COURSE DESCRIPTION

## Course Outcomes:

1. Explain the pathophysiology of the different hypertensive disorders in pregnancy
2. Correlate the pathophysiologic changes that occur during pregnancy with the clinical manifestations in these various disease states
3. Discuss the anesthetic implications of the clinical manifestations present in the high risk parturient for either elective and emergency delivery
4. Justify a peri-operative anesthetic plan for hypertensive parturient for labor and delivery referred for anesthesia care
5. Explain the risks and benefits of associated with each contemplated anesthetic technique for labor and delivery for both the mother and the baby
6. Anticipate and manage the possible anesthetic related maternal and fetal complications of the high risk parturient for labor and delivery
7. Perform a pertinent peri-operative anesthetic assessment of the high risk parturient maintaining respect and concern for the patient's pain and , her relatives
8. Stay updated with current research, guidelines, and best practices in obstetric anesthesia, and demonstrate a commitment to lifelong learning and professional development.

**Audience:** Anesthesia senior residents accepted to the two track postgraduate subspecialty and MCS in Anesthesiology Program

**Topic/Unit/Chapter Information**

**Title of Unit :** Anesthesia correlations: Hypertensive Disorders in Pregnancy

**Description of the Topic:** This unit enables the the senior resident to develop a safe and effective anesthetic plan for the hypertensive parturient and her baby based on a comprehensive understanding of the pathophysiology of hypertensive disorders during pregnancy and their challenges and considerations related to the administration of anesthesia.

Instructional Objectives	Content	Teaching-Learning Activities	Resources	Instructional Functions	Evaluation
<p><u>Discuss the anatomy and pathophysiology of the different hypertensive disorders during pregnancy:</u></p> <ul style="list-style-type: none"> <li>• Gestational hypertension</li> <li>• Pre-eclampsia</li> <li>• Preeclampsia with severe features</li> <li>• HELLP syndrome</li> <li>• Eclampsia</li> </ul>	<p>Pathogenesis of hypertensive disorders in pregnancy</p> <ul style="list-style-type: none"> <li>• Immunologic factors</li> <li>• Genetic factors</li> <li>• Placental factors</li> </ul> <p>Anatomic and physiologic changes in the following systems:</p> <ul style="list-style-type: none"> <li>• Uteroplacental perfusion</li> <li>• Respiratory system</li> <li>• Cardiovascular system</li> <li>• Hematologic system</li> <li>• Renal</li> <li>• Hepatic</li> </ul>	<p>Teacher: Prepare interactive lectures with prepare pretest to assess initial <u>knowledge</u> Assign topics for <u>discussion</u></p> <p>Learner:  Discuss topics <u>assigned</u> Participate in interactive lectures</p>	<ul style="list-style-type: none"> <li>• Obstetric anesthesia textbooks</li> <li>• Online videos explaining hypertensive disorders in <u>pregnancy</u></li> <li>• <u>Societal classification guidelines</u></li> <li>• Journal updates/ systematic reviews</li> </ul>	<ul style="list-style-type: none"> <li>• Assess initial knowledge of the <u>student</u></li> <li>• Provide basic and <u>clinical foundations</u> of hypertensive diseases pregnancy</li> <li>• Application of basic and clinical foundations to classify the different hypertensive disorders of pregnancy</li> </ul>	<ul style="list-style-type: none"> <li>• Pre and <u>post test</u> evaluation</li> <li>• Student participation in the interactive lectures</li> </ul>

<p>Diagnose different hypertensive disorders of pregnancy according to <u>severity</u> and clinical presentation :</p>	<p><u>Clinical presentation</u> of hypertensive disorders in pregnancy:</p> <ul style="list-style-type: none"> <li>• Gestational hypertension</li> <li>• Pre-eclampsia</li> <li>• Preeclampsia with severe features</li> <li>• HELLP syndrome</li> <li>• Eclampsia</li> </ul>	<p>Teacher: Assign topics for <u>discussion</u></p> <p>Learner: Prepare a discussion of disease <u>assigned</u></p>	<ul style="list-style-type: none"> <li>• Obstetric anesthesia textbooks</li> <li>• Journals:/ updates <u>Systematic review</u></li> <li>• Classification guidelines from different societies</li> </ul>	<p>Proper curating of sources</p>	<p>Evaluation of thoroughness of report</p>
<p>Analyze the profile of the hypertensive parturient referred for anesthesia care in the <u>PGH</u></p>	<p>Epidemiology of cases referred for anesthesia care in the <u>PGH</u></p>	<p>Discussion of weekly census of cases in weekly conference audit</p>	<p>Anesthesia digital census</p>		<p><b>Evaluate Completeness of weekly census</b></p>

<p>Create a <u>peri-operative</u> anesthetic plan based on the clinical presentation of a hypertensive parturient</p> <p>Recognize the importance of multi-disciplinary collaboration in the management of labor and delivery of the hypertensive <u>parturient</u></p>	<p>Peri-operative management of Specific Clinical Scenarios:</p> <ul style="list-style-type: none"> <li>• <u>34 year old</u> primigravid with <u>pre-eclampsia</u> for labor analgesia</li> <li>• <u>29 year old</u> with uncontrolled HPN for emergency CS for fetal distress</li> <li>• <u>29 year old</u> hypertensive with thrombocytopenia (platelet count of 75,000) for emergency CS</li> </ul>	<p>Teacher</p> <ul style="list-style-type: none"> <li>• Assign specific clinical scenarios</li> <li>• Organize small group discussions and multidisciplinary meetings</li> <li>• Organize pro-con debates regarding choice of anesthesia</li> </ul> <p>Learner</p> <ul style="list-style-type: none"> <li>• Participation in multi-disciplinary discussions</li> <li>• Prepare an anesthetic plan for the case assigned</li> <li>• Participation in Pro-con debates on anesthetic management of a given case <u>scenario</u></li> <li>• analyze and discuss the management strategies, decision-making processes, and potential complication</li> </ul>	<p>Journals Actual cases Multimedia sources</p>	<ul style="list-style-type: none"> <li>• Guidance in developing or justifying an <u>anesthetic plan</u></li> <li>• application of knowledge to real-world situations.</li> <li>• Learners to analyze and discuss the management strategies, decision-making processes, and potential complication</li> <li>• <u>Sharing of knowledge</u> experiences/ perspectives from different collaborators</li> <li>• Emphasize collaboration, communication, and respect among specialties</li> </ul>	<p>Teacher evaluation of participation Peer evaluation <u>Self evaluation</u></p>
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Effectively manage an obstetric / anesthetic crisis in the labor or delivery room	Peri-operative complications <ul style="list-style-type: none"><li>• Uncontrolled blood pressure</li><li>• Seizures</li><li>• Hemorrhage</li><li>• Anesthetic complications (local anesthetic toxicity, cardiac arrest)</li></ul>	Problem based learning activities  Interactive Workshops  Simulation exercises		Develop recognition of crises and develop problem-solving skills	Simulation checklist
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Demonstrate a commitment to maintaining up-to-date knowledge	Updates in the anesthetic management of hypertensive diseases during pregnancy	Critical appraisal workshops on current evidence on anesthesia Journal clubs	Journal updates Guidelines	Critical thinking and judicious use of available online resources (avoid predatory listings)	Evaluation of critical appraisal reports <u>Self assessment</u>
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## CASE-BASED DISCUSSION (CBD)

RESIDENT'S NAME AND SIGNATURE	CONSULTANT'S NAME AND SIGNATURE	DATE

PATIENT'S AGE and GENDER	ASA CLASSIFICATION	PRIMARY DIAGNOSIS
SURGICAL PROCEDURE		ANESTHETIC TECHNIQUE

### ASSESSMENT SCORES

<b>5</b>	<b>SUPERIOR:</b> Trainee CONSISTENTLY demonstrates above average performance of safe practices.
<b>4</b>	<b>VERY GOOD:</b> Trainee FREQUENTLY demonstrates performance of safe practices.
<b>3</b>	<b>AVERAGE:</b> Trainee meets expectations in the performance of safe practices with potential to improve with experience.
<b>2</b>	<b>MARGINAL:</b> Trainee demonstrates performance of safe practices with minor deficiencies, which requires additional supervision.
<b>1</b>	<b>UNSATISFACTORY:</b> DOES NOT MEET EXPECTATIONS. Trainee performs with gross deficiencies detrimental to patient safety.
<b>N/A</b>	<b>NOT ASSESSED</b>

	SCORE	FEEDBACK
Pre-op assessment and review of investigations		
Basic science, pathophysiology		
Choice of anesthetic technique		
Anesthetic management		
Post-op care		
Professionalism		
Overall clinical care		

### Recommendations:

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The trainee functions at the level of a:

- 1<sup>st</sup> year trainee    
  2<sup>nd</sup> year trainee    
  3<sup>rd</sup> year trainee    
  Fellow in training

Would you feel comfortable letting the trainee work with minimal supervision?

- YES    
  NO

PLAN FOR LEARNING AND DEVELOPMENT	YES	NO	COMMENTS
e-Learning			
Simulation			
Targeted Clinical Experience			
Journal Updates			
Need to retake the assessment?			

