



Implementing Baseline Diagnostics into Labetalol Therapy

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LIVE YOUR PURPOSE

PURPOSE

The purpose of this literature review is to establish an evidence-based foundation for implementing baseline diagnostic assessments, including complete blood count, hepatic and renal function panels, electrolyte evaluation, and electrocardiography, prior to initiating labetalol therapy for the management of hypertensive disorders of pregnancy (HDP). Integrating these diagnostic measures supports a more rigorous assessment of maternal physiological status before treatment initiation. Collectively, these practices aim to enhance maternal-fetal safety and to contribute to greater standardization and consistency in clinical management protocols.

BACKGROUND

- Hypertensive disorders of pregnancy affect 5-8% of pregnancies and remain a significant contributor to maternal morbidity and mortality.
- Labetalol is a first-line antihypertensive agent for HDP, but is frequently initiated without standardized baseline diagnostics.
- Pregnancy-related physiological changes may influence pharmacokinetics, safety, and therapeutic response to labetalol.
- Emerging evidence supports structured pre-treatment assessment protocols to guide antihypertensive therapy in pregnancy.
- Baseline evaluation may include CBC< cardiac, hepatic, renal, and electrolyte panels, and an ECG to support risk stratification and individualized care.
- Integrating baseline diagnostics prior to labetalol initiation may optimize maternal-fetal outcomes, enhance medication safety, and reduce unwarranted variation in HDP management practices.

RESEARCH / SIGNIFICANCE OF PROJECT

- Current HDP management guidelines recommend labetalol as first-line therapy, but provide limited guidance on standardized baseline diagnostic evaluation prior to initiation.
- Variability in pre-treatment assessment may contribute to inconsistent clinical decision-making, medication-related adverse missed opportunities for individualized care.
- Pregnancy-related physiological changes affecting cardiovascular, hepatic, and renal function emphasize the need for an objective baseline data to support safe antihypertensive therapy.
- This project addresses a practice gap by emphasizing the role of baseline laboratory testing and ECG assessment before labetalol initiation in HDP
- Establishing a structured diagnostic approach may enhance medication safety, improve maternal-fetal outcomes, and promote evidence-based standardization in HDP.

THEORETICAL FRAMEWORK

- This quality improvement project is guided by Knowles's Adult Learning Theory (Andragogy)
- Knowles's Adult Learning Theory emphasizes self-directed, practice-relevant, and problem-centered learning to promote clinical engagement and sustained behavior change (Knowles et al.,2015; Mukhalalati & Taylor,2019).
- Andragogical principles support the use of targeted education, EHR-embedded decision support, and audit-and-feedback cycles to improve adherence to standardized baseline diagnostic practice (Mukhalalati & Taylor,2019).



FAITH INTEGRATION

Proverbs 4:7 "Wisdom is the principal thing; therefore, get wisdom: and And with all thy getting get understanding." (KJV)

- Diagnostic data provide informed decision-making, allowing the provider to individualize therapy
- Supports evidence-based practice, a cornerstone of DNP-level nursing leadership
- It reinforces the ethical obligation to understand the patient's baseline condition before intervention, reducing preventable harm

- Proverbs 27:12** "A prudent person foresees danger and takes precaution."
- Baseline Diagnostics function as preventive safeguards when initiating labetalol.
- Supports Proactive patient monitoring to prevent adverse drug events

OBJECTIVES

- Within the first 10 weeks of implementation of BDB, ≥95% of pregnant patients newly started on Labetalol for hypertensive disorders of pregnancy will have a completed and documented ECG in the EHR prior to medication administration.
- By December 2027, a minimum of 25% reduction in initiation-related adverse events will be achieved among the target population as determined through analysis of documented adverse event reports during the medication initiation phase.
- By March 2027, at least 80% of patients will achieve the target blood pressure levels within 30 days of initiation

HOW RESEARCH USED FOR PROJECT

In Process



OUTCOMES

Pending Implementation of the project.



PROJECT IMPACT ON NURSING

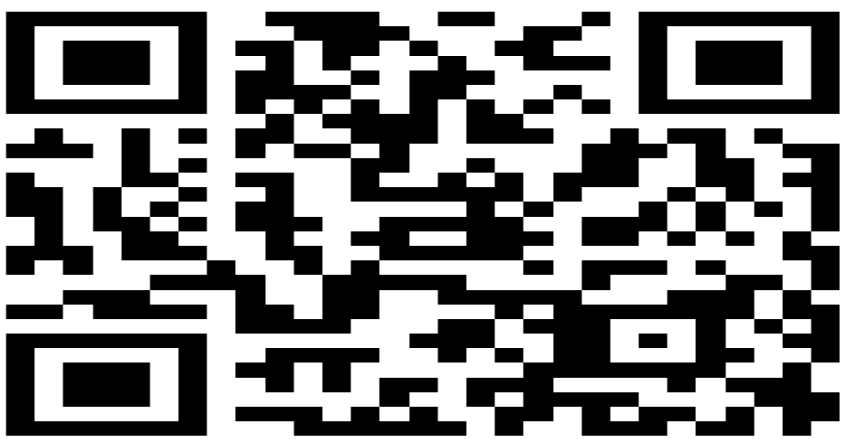
- Integrating baseline diagnostic testing into labetalol therapy mitigates a key deficiency in current clinical practice, enhances individualized patient assessment, and promotes adherence to evidence-based guidelines for the management of HDP. This protocol has the capacity to strengthen maternal-fetal safety and reduce variability in antihypertensive treatment approaches.

CONCLUSION

- Earlier articles provided historical data to support later research
- Five key themes emerged from the Literature Review:**
 - Antihypertensive drug comparison
 - Labetalol as a preferred agent
 - Preeclampsia and long-term cardiovascular risk
 - Hemodynamic monitoring and individualized care
 - Pharmacokinetics and safety in pregnancy



REFERENCES



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