

PROTOCOL #14C - Maternal Fetal Medicine, University of New Mexico

**HYDRALAZINE AND LABETOLOL TREATMENT OF SEVERE
HYPERTENSION IN PREGNANCY**

Revised 7/03

GOALS OF THERAPY

Maintaining a diastolic blood pressure less than 110 mmHg while avoiding a decrease in uteroplacental perfusion, which could lead to fetal distress. Treatment may be initiated at lower BP if signs of end-organ compromise are present, e.g., heart failure or myocardial ischemia, change in mental status, renal failure, eclampsia, aortic dissection, or microangiopathic hemolytic anemia.

In either case, BP should be lowered by no more than 20-25%; do NOT aim for a “normal” BP.

MECHANISM OF ACTION

Hydralazine is an arteriolar vasodilator and, as such, provides pure afterload reduction. The typical compensatory response to this drug is a reflex tachycardia; headache, nausea and flushing are also reported. The response to an intravenous bolus takes up to 20 minutes to manifest. Labetolol is a mixed alpha- and beta-blocker, so it also has vasodilatory effects.(beta effects predominate by a ratio of 7:1). Onset of action is 5 minutes.

Although hydralazine has a long history of use in obstetrics, there is no good evidence which would establish it as the drug of choice. Compared with a variety of other agents, hydralazine is associated with more maternal hypotension, more cesarean deliveries, more placental abruptions, and more low Apgar scores. The obstetrician should be familiar with its use as it remains a first-line drug on many obstetrical services; the obstetrician should equally be familiar with labetolol as it has supplanted hydralazine on many others.

MANAGEMENT PROTOCOL

Hydralazine

1. Institute intensive monitoring of maternal vital signs (q 5 min) and fetal heart rate.
2. Fluid load with 500 ml isotonic crystalloid.
3. Hydralazine is best administered by intermittent bolus rather than continuous infusion
4. The initial dose is 5 mg given IV push. If no response after 20 minutes, a bolus of 10 mg may be given. If no response after another 20 min, 20 mg more may be given as a bolus. If the desired response is still not achieved, the drug has failed, and another should be substituted.
5. Decelerations of the fetal heart rate indicate that uteroplacental perfusion has been affected, usually meaning that BP has been lowered too aggressively. This does not mandate an emergent cesarean delivery. Place the patient in a decubitus position, administer oxygen, and fluid load with 500 cc crystalloid over a 15-minute period.
6. The dose which proved effective (5, 10, or 20mg) will need to be repeated at 2-6 hour intervals.

7. Once effect has been achieved, maternal vital signs can be monitored at hourly intervals.

MANAGEMENT PROTOCOL

Labetolol

1. Institute intensive monitoring of maternal VS (BP q 5 min) and FHR.
2. Initial labetolol dose is 10 mg IV bolus (you may choose to use an initial dose of 5 mg if you suspect intravascular volume depletion)
3. If no effect in 5 min, double the dose.
4. Dose may be further doubled at 5-min intervals (10-20-40-80) until desired effect achieved. If no effect at the maximum dose, another agent should be substituted.
5. The dose which proved effective should be repeated at 3-6 hour intervals; maximum daily dose is 300 mg.
6. Once desired effect has been achieved, return to hourly VS monitoring.

CONSULTATION: Twenty-four hour consultation is available by calling the Maternal Fetal Medicine service at the University of New Mexico Hospital. 1-888-866-7257.

References

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