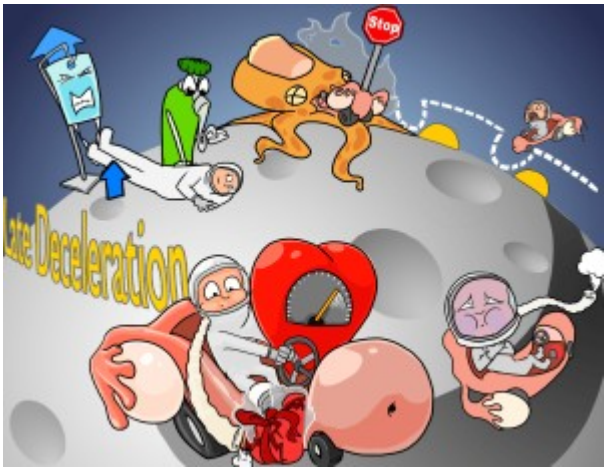
Late Decelerations

Decelerations which are caused by a parasympathetic response during labor can be benign in nature (a normal pattern occurrence) or can be abnormal or nonreassuring. They are identified visually on a fetal monitor tracing by when they occur in the contraction cycle either the onset or at the end of a contraction and also by their shape. A late deceleration is a gradual decrease and return to the baseline FHR during the contraction with the lowest point (nadir) occurring after the peak of the contraction. It does not return to the FHR baseline until after the contraction is over.



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Cause

Uteroplacental Insufficiency

Uterus-placenta-present Broken

Late decelerations occur due to uteroplacental insufficiency, where impaired blood flow or oxygen exchange between the placenta and fetus leads to fetal hypoxia.

Late decelerations are characterized by a gradual decrease and return to baseline fetal heart rate that begins after the start of a uterine contraction and returns to baseline after the contraction ends.

Common causes of uteroplacental insufficiency include maternal hypotension, preeclampsia, placental abruption, and post-maturity.

Late decelerations are considered an abnormal finding and may require immediate intervention, such as maternal repositioning, oxygen administration, IV fluid bolus, or preparation for delivery if the pattern persists.

Occurs During

Disruption of Oxygen Transfer to Fetus

Fetus with Disrupted Oxygen supply

There are many causes for late decelerations, such as uterine tachysystole, which occurs when there are more than 5 contractions in 10 minutes. Frequent contractions do not allow sufficient recovery and adequate oxygen exchange in the placenta. Other conditions are maternal supine hypotension, placental previa, hypertensive disorders, diabetes mellitus, intraamniotic infection, intrauterine growth restriction, epidural or spinal anesthesia, and postmaturity.

Considerations

Abnormal Pattern

Abnormal Pattern

Late decelerations are associated with fetal hypoxemia, metabolic acidemia, and an increased risk of low Apgar scores at birth.

Persistent or repetitive late decelerations are considered an ominous sign, especially when accompanied by fetal tachycardia, minimal or absent variability, and loss of beat-to-beat heart rate fluctuations.

These findings suggest worsening fetal oxygenation and potential fetal compromise, often necessitating urgent intrauterine resuscitation measures or expedited delivery to prevent long-term neurological injury.

Interventions

Discontinue Oxytocin

Stopped Octopus-toe

If oxytocin (Pitocin) is infusing, it should be discontinued until the late decelerations are corrected. This will slow the rate and strength of the contractions to allow for better perfusion of the placenta.

Oxygen with Non-Rebreather (8-10 L/min)

O2-tank with Non-rebreather-mask

It is important to administer high-flow oxygen via a nonrebreather face mask to the mother to improve maternal oxygenation and enhance oxygen delivery across the placenta to the fetus. In addition to oxygen administration, intrauterine resuscitation measures include repositioning the mother to her left side to optimize uteroplacental blood flow, discontinuing oxytocin (if infusing) to reduce uterine hyperstimulation, and administering intravenous fluid boluses to correct potential maternal hypotension.

These interventions aim to correct fetal hypoxia and prevent worsening acidemia.

Side-lying Position

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An immediate and priority nursing action for late decelerations is to reposition the laboring patient to a lateral (side-lying) position, preferably the left side, to relieve any supine hypotension caused by compression of the inferior vena cava. This improves maternal cardiac output, enhances uteroplacental blood flow, and increases fetal oxygenation.

If late decelerations persist after repositioning, additional interventions may include administering a nonrebreather mask with high-flow oxygen, increasing intravenous fluids, discontinuing oxytocin, and preparing for possible emergent delivery if fetal status does not improve.

Elevate Legs

Elevated Legs

When maternal blood pressure is low, elevating the mother's legs can assist in relieving maternal hypotension by promoting venous return to the heart, thereby increasing cardiac output and enhancing uteroplacental perfusion.

This maneuver is especially important when hypotension is caused by supine positioning or epidural anesthesia.

Leg elevation should be combined with other intrauterine resuscitation measures, such as lateral repositioning, administration of an intravenous fluid bolus, and supplemental oxygen, to rapidly improve maternal hemodynamics and fetal oxygenation.

Increase Rate of IV Solution

Up-arrow IV

Dehydration and hypovolemia can reduce maternal blood volume, leading to decreased uteroplacental perfusion and contributing to fetal hypoxia. Increasing the rate of the maintenance intravenous (IV) solution can help restore intravascular volume, improve maternal cardiac output, and enhance oxygen delivery to the fetus.

Administering an IV fluid bolus, particularly isotonic fluids such as lactated Ringer's or normal saline, is a common intervention during episodes of late decelerations, maternal hypotension, or signs of fetal distress.