

## A REVIEW ON SUPINE HYPOTENSION SYNDROME

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### Abstracts

Supine hypotensive syndrome is characterized by severe supine symptoms and hypotension in late pregnancy, which compel the unconstrained subject to change position. Rarely, it may manifest even from the fifth month of pregnancy or postpartum, as well as in the pelvic tilt or sitting positions. Although inferior vena cava compression influenced primarily by the size of the uterus and exact maternal and fetal position, is the major determinant in its development, other factors may also be important in modulating the circulatory effects of such compression. As there seems to be a spectrum of severity from minimal central cardiovascular alterations to severe syncopal shock resulting from supine inferior vena cava compression, it is difficult to define a cut-off point at which the syndrome occurs. This syndrome is a major consideration in dental treatment of a pregnant patient.

**Keywords:** Supine Hypotension, Pregnancy, Syncope, Hypoxia

### 1. Introduction<sup>1-6</sup>

Supine hypotensive syndrome also called as aortocaval compression syndrome or maternal hypotension syndrome, is caused when the inferior vena cava is compressed by the weight of a pregnant female's uterus, fetus, placenta and amniotic fluids while lying in the supine position. The effects of supine hypotensive syndrome are very similar to that of shock, but they are not treated in the same fashion. This condition can develop as early as the second trimester but is maximal during the third trimester, 36 to 38 weeks. When the pregnant female in these stages lies in the supine position, the added weight of the enlarged uterus and its contents will press down on the inferior vena cava. The inferior vena cava is the route by which de-oxygenated blood from the lower half of the body returns to the heart. When the inferior vena cava is compressed it reduces the amount of blood that returns to the heart and reduces cardiac output, this can result in a loss of 30% of the effective circulating blood volume. It can take three to seven minutes for significant hypotension to become manifest. Supine hypotensive syndrome can mimic symptoms of shock. This is because when the blood flow from the inferior vena cava is constricted the blood pressure will drop and will contract the uterine arteries and redirect blood to the major organs. This can cause distress for the fetus, where fetal hypoxia can occur and in

extreme cases, fetal demise. This syndrome can be prevented by proper positioning of pregnant female.

### 2. Signs and Symptoms<sup>7-11</sup>:

- Dizziness.
- Sweating.
- Nausea.
- Hypotension.
- Oedema of the lower extremities.
- Signs of fetal hypoxia or distress.
- Decreased femoral pulse.
- Pallor.
- Signs of shock such as cool, moist and clammy skin.
- Syncope or near syncope.
- Tachycardia.
- Bradycardia in later stages.

### 3. Prevention:

It can be prevented very easily. If the patient is unconscious and supine than the patient can be placed in left lateral recumbent position. If the patient is awake and symptoms of hypotension than patient should be asked to sit up and lay on either side preferably on the left side<sup>12</sup>.

In case of spine injury, patient should be secured to a backboard which could be tilted by placing a towel or sheet under it which would raise the patient and angle-up the position revealing the pressure from the uterus. This method is also used in case of transferring of the pregnant women in cases of trauma to avoid shock<sup>13</sup>.

Manual displacing of the uterus by hands can also be done if no other option is available. If during a dental treatment a pregnant women complains of dizziness or other sight related problems than one should follow the above measures to prevent any complications. Changing the supine position to the above position increases the cardiac output thereby relieving the symptoms. Following the proper procedures will avoid supine hypotension syndrome<sup>14</sup>.

#### 4. Treatment<sup>15-25</sup>:

- Stop all dental treatment and position the patient properly and accordingly.
- Keep patient warm.
- Place patient in left lateral recumbent position.
- Elevate the right hip by 10 – 12 cm.
- In case of trauma or supine injury, secure the patient with a backboard.
- Treat shock if there are signs of shock visible.
- Transport the patient properly.

#### 5. Summary:

Supine hypotension syndrome is a common condition affecting pregnant females due to flat supine position for more/longer duration/time. With proper care and proper positioning of pregnant female to her left side (preferably), can avoid this syndrome and even subside it till the symptoms are gone and health of the pregnant women is regained.

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