

## **Lack of Amniotic Fluid**

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Baby in mother's womb is enclosed in a bag called as amniotic sac. In this sac baby lives in amniotic fluid. This fluid is formed by mother initially but as soon as baby develops kidneys, majority of fluid is contributed by the baby's urine. This continuous cycle of swallowing and urinating keeps the fluid in circulation. This has many functions in baby's development.

### **Functions of Amniotic Fluid**

- This provides cushioning effect to baby from outside injuries if any
- As baby keeps moving in the fluid, it helps in bone development
- It also helps in lung development
- It maintains optimum temperature for the baby and keeps it warm and healthy
- As fetus swallows amniotic fluid, it also helps developing its digestive system

Maximum amount of amniotic fluid is at 34 weeks of gestation when it is around 800ml and at term it reduces to approximately 600ml.

Problems happen if amniotic fluid is too low, a condition called **Oligohydramnios**, or it's too high called as **Polyhydramnios**

### **What is oligohydramnios?**

It is a condition in which amount of fluid in the baby bag is less as compared to normal for that gestation. It usually happens in late pregnancy but in some cases early onset oligohydramnios is also seen mostly associated with genetic disorders.

### **How to measure Amniotic Fluid?**

Amniotic fluid can be measured during ultrasound. It is measured either as deepest pocket of amniotic fluid (it should be free from umbilical cord) or measuring Amniotic Fluid Index called as AFI (this is a sum of deepest pockets of all four quadrants). In normal situation ,the deepest pocket should be more than 2 cm or AFI should be between 8-25cm

### **Causes of Low Amniotic Fluid**

#### **Maternal Causes**

- Maternal Hypertension
- PIH
- Diabetes
- Chronic diseases
- Use of certain medications such as ACE inhibitors (contraindicated in pregnancy)
- Dehydration rarely

- Post-date pregnancy

### **Fetal causes**

- Birth defects such as developmental defect with the kidney leading to low urine production
- PROM – pre-labour rupture of membrane where baby bag ruptures and fluid starts leaking
- Placental causes where inadequate blood, nutrition and mineral supply may lead to stoppage of recycling enough fluid.
- Certain genetic disorders

### **Risk of having Low Amniotic Fluid**

Amniotic fluid is essential for development of fetus as it helps in movements and development of bones, respiratory and digestive symptoms. The effects of less amniotic fluid depend on what gestation of pregnancy it happens, if it happens early in the pregnancy, the results can be lethal but if it happens in late trimester, it can be managed and baby can be salvaged as well.

### **Effects of Low Amniotic Fluid in First half of pregnancy**

- Compression of fetal organs which results in birth defects
- Compression of umbilical cord resulting in intra-uterine death of fetus
- Increased chance of miscarriage

### **Effects of Low Amniotic Fluid in second half of pregnancy**

- As the baby does not get enough space to grow, it leads to Intra-uterine Growth Restriction (IUGR)
- Cord compression
- Increased fetal distress and passage of meconium during labour
- Premature delivery
- More chances of cesarean delivery

### **How do we treat Low Amniotic Fluid Levels**

Treatment depends on when it is diagnosed, either in first half of pregnancy or second half of pregnancy. If first half of pregnancy and baby has severe defects, usually termination is done with emphasis on knowing the cause of oligohydramnios by genetic and other required testing. If it happens in second half of pregnancy then regular monitoring as advised by your doctor like Daily Fetal Movement Count (DFMC), Doppler, NST and AFI. Depending on clinical and investigation reports doctor may decide for early delivery as baby may do better outside the womb.

### **Other treatments**

Some adjuvant treatments can be of help during management of Low Amniotic Fluid such as

- Amnioinfusion during labour using a catheter does help by relieving compression on umbilical cord during labour
- Increasing maternal fluid intake by iv fluid and oral intake

- Supplements like protein and arginine.