Artificial Womb Could Raise Hope for Premature Babies

Dragana Todorovic  May 09, 2017

Scientists have developed an artificial womb that promises to increase the survival chances of premature babies.

According to estimates, 15 million babies worldwide are born prematurely each year. Also, about one million children die every year from preterm birth complications.

Researchers at the Children's Hospital in Philadelphia might have developed a new technology that could significantly improve chances of healthy survival of extremely premature babies.

Six preterm lambs lived within this artificial womb for three to four weeks. The researchers hope that the plastic bag, called biobag, could help the lungs and other organs in premature babies to develop normally, even if they are born at 23 to 27 weeks from conception.

Dr Alan Flake, director of the Center for Fetal Research at the Children's Hospital of Philadelphia, explained that premature babies have an urgent need for a bridge between the mother's womb and the outside world, because their lungs are not able to breathe air. That's why doctors put them in incubators with ventilators.

But now, scientists decided to return to Mother Nature and imitate a mother's womb with a container filled with lab-made amniotic fluid, where premature babies could be placed and feel like in a real womb.

The artificial womb is attached to an umbilical cord, through which carbon-dioxide is extracted and oxygen brought in.

No mechanical pump is used because even gentle artificial pressure could fatally overload an underdeveloped heart.

Lauran Neergaard, a medical writer for the Associated Press, said that although there is no data on long-term development of lamb fetuses grown in artificial wombs, researchers found that they developed normally and even grew wool.

Human testing is expected in three to five years, but the researchers are already discussing with US regulators possibilities to make this technology available in hospitals.

According to the charity Tommy's, in babies born preterm, the chance of survival at less than 23 weeks is close to zero, at 23 weeks it is 15%, at 24 weeks 55% and at 25 weeks about 80%.