

Women with cystic fibrosis can have safe and successful fertility treatment

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Women with cystic fibrosis can have fertility treatment to help them have babies without any long-term adverse effects on either themselves or their children, according to new research presented at the 25th annual meeting of the European Society of Human Reproduction and Embryology in Amsterdam today.

Until relatively recently, cystic fibrosis (CF) was a death sentence and most people with the disease died by the time they reached their teenage years. Now, this is no longer the case, and, thanks to better treatment of the condition, people live far longer and want to start their own families. But women with CF face a problem in addition to the effects of [pregnancy](#) on their health: CF itself can make them infertile.

In the first, long-running study to investigate and evaluate systematically the use of assisted reproductive technology (ART) in a group of [infertile women](#) with CF, researchers based at the Hôpital Cochin Saint Vincent de Paul in Paris (France) looked at 24 women between 1998 and 2008. After assessing their health, three women were discouraged from undergoing [fertility treatment](#) for medical reasons and six are still being assessed. However, the remaining 15 women all received fertility treatment.

Dr Sylvie Epelboin, a gynaecologist, obstetrician and co-ordinator of the Paris-based ART-CF disease network, who led the research, said: "Women with cystic fibrosis often have thick cervical mucus preventing them from becoming pregnant naturally. However, a pregnancy can be

achieved by the use of intrauterine insemination (IUI) or in vitro fertilisation (IVF). Fertility treatment has to depend on the woman's pulmonary and nutritional status, and there are ethical concerns about the welfare of the child whose mother might become severely ill, have to receive a lung transplant or die."

All 15 women had partners without the CF gene mutation and, apart from failing to conceive, other indicators of fertility were normal. The women were aged between 24 and 36.

The doctors tried IUI first with the patients and 15 successful pregnancies were achieved using this method. One woman had IVF after IUI failed and she became pregnant after frozen embryo transfer. Another woman became pregnant after egg donation because her ovaries had failed. In total, there were 17 pregnancies in 13 of the 15 women, resulting in 12 live births, two ongoing pregnancies and three miscarriages.

All the women, apart from one, were able to give birth without a caesarean section, and although 50% of them had diabetes during pregnancy and there was a slight decline in lung function during the year of pregnancy, all the mothers have remained healthy. The babies were born on average at around 37 weeks, with only four babies having a low birth weight of less than 2500g (birth weights ranged from 1910-3500g). There were no babies with very low birth weights (less than 1500g). Five babies were breastfed. All children (seven girls and five boys), aged 10 years to one month, are healthy.

Dr Epelboin said: "The results of our study are good news for women with cystic fibrosis because they show that ART is a hopeful option for them and does not increase the risk of medical problems or death for either themselves or their children. Furthermore, the possibility of ART for this growing population of young adults with [cystic fibrosis](#) has a

positive impact on their quality of life by satisfying their wish to become parents. These women had given mature consideration to their desire for a child and were fully supported by their families. All these considerations are equally true for infertile men with CF, who also require ART, usually via ICSI, to have children."

However, she warned that it was important that a network of dedicated CF, ART and obstetrical teams should look after women with CF before, during and after pregnancy. The women's general health should be carefully assessed and they should receive medical, genetic and ethical counselling before embarking on fertility treatment.

"Treatments inducing ovulation must be conducted with the goal of achieving a moderate response and a single pregnancy, and close monitoring for prenatal care is needed throughout the pregnancy. It is important for CF women to have singleton pregnancies because of the extra strain that a multiple pregnancy would place on the lungs and heart, for nutritional balance, and because of the additional risks of premature birth, which could be linked to abdominal efforts caused by coughing. In addition, a single birth is easier for these women to manage for post-natal care and medical follow-up."

Diabetes and glucose intolerance occur frequently in people with CF, due to the worsening of their pancreatic disease. Some CF women have diabetes before pregnancy and so it needs to be under perfect control with insulin before they become pregnant. Other CF women can develop diabetes as a result of their pregnancy (gestational diabetes), and this also needs to be carefully controlled and monitored although it frequently disappears once the woman has given birth.

Together with Dr Dominique Hubert, a lung specialist and co-ordinator of the network, Dr Epelboin is setting up a long-term survey that follows the CF mothers, couples and children and compares them to women who

require ART but who do not have a severe genetic disease. "We want to see how they fare with regards to ethical concerns about the welfare of the child growing up in a family where the mother has CF, and how the mother's prospects or need for a transplant and her limited life expectancy affect the child and the family. It is only through such long-term monitoring that we can confirm our preliminary optimistic conclusions," she said.

Source: European Society for Human Reproduction and Embryology
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