

# In vitro fertilization linked to deadly heart disease in pregnancy

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Women undergoing fertility treatment should urgently see their doctor if they have heart failure symptoms, according to a study presented today at Heart Failure 2019, a scientific congress of the European Society of Cardiology (ESC).

Shortness of breath, swollen legs and waking up in the night to urinate could be warning signs of a pregnancy-associated [heart failure](#) called peripartum cardiomyopathy (PPCM). PPCM affects about one in 1,000 [pregnant women](#) worldwide and is life-threatening to the mother and baby. The heart becomes enlarged and weak in [late pregnancy](#) or after delivery.

"It is very difficult to distinguish normal pregnancy discomfort from [heart failure symptoms](#)," said Dr. Tobias Pfeffer, study co-author and cardiologist at Hannover Medical School. "Our study shows that the risk of PPCM is five times higher in women who have fertility [treatment](#) so they should be aware that this discomfort may not be benign. PPCM is often diagnosed much too late, with direct consequences on prognosis."

"In all women who have conceived artificially, gynaecologists and fertility doctors should advise cardiac checks including echocardiography after delivery, or shortly before, to rule out PPCM," said Professor Denise Hilfiker-Kleiner, the study's senior author and Hannover's dean of research in molecular cardiology.

She noted that the pregnancy rate of artificial fertilisation varies between 10% and 50% per cycle according to age and method, meaning that women undergo multiple rounds of treatment if pregnancy doesn't start or is lost at an early stage. "Lost pregnancies can also induce PPCM," she said. "Women who have developed signs of cardiac stress or impaired function should know that another cycle may increase their risk of becoming severely ill."

Rising success rates and affordability have led to a steady increase in the proportion of babies born from assisted reproductive technology (ART) such as in vitro fertilisation (IVF) and intracytoplasmic sperm injection (ICSI). In Germany for example it rose from 1.6% in 2006 to 2.6% in 2016, and in Denmark from 6.1% in 2012 to 10% in 2018.

The study found high rates of subfertility in patients with PPCM. One-third had difficulty getting pregnant despite regular sexual intercourse over at least six months, compared to around 20% in the [general population](#) in Germany. Births using ART were five times more common in women with PPCM: 13% of babies were conceived artificially compared to 2.6% in the general population.

The researchers said the high prevalence of subfertility and births using ART in patients with PPCM could be partly related to shared risk factors. "Women who undergo artificial fertilisation are normally older and delivery is more often by caesarean section, so they already have two risk factors for PPCM," said Professor Hilfiker-Kleiner. "Fertility treatments altogether induce multiple pregnancies, which also raises the chance of PPCM."

"We also think there may be genetic alterations that predispose women to both subfertility and PPCM but these analyses are ongoing," said Manuel List, co-author and medical student at Hannover. "So far there is no [clear evidence](#) that hormonal treatment, which is usually part of fertility therapy, increases the risk of PPCM."

Professor Hilfiker-Kleiner noted that clinical outcomes of PPCM patients in the study were not worse in [women](#) with fertility problems, including those who underwent fertility treatment, compared to those with normal fertility. "Having IVF or ICSI is not associated with a worse prognosis from PPCM," she said. "However, as subsequent pregnancies after PPCM have a high risk for

relapse, fertility treatment in PPCM patients bears a high risk for mother and foetus."

The study was conducted in 111 patients with PPCM. Information on fertility and [fertility treatment](#) was obtained using a standardised questionnaire. Fertility centres provided treatment details.

**More information:** The abstract 'Patients with peripartum cardiomyopathy display a high incidence of subfertility and fertility treatments' will be presented during Poster Session 1: Acute Heart Failure - Epidemiology, Prognosis, Outcome on Saturday 25 May at 08:30 to 17:30 EEST in the Poster Area. [spo.escardio.org/SessionDetail ... Id=7806&searchQuery=%2fdefault.aspx%3fevtid%3d1439%26days%3d%26topics%3d%26types%3d%26rooms%3d%26freetext%3dPatients%2bwith%2bperipartum%2bcardiomyopathy%2bdisplay%2ba%2bhigh%2bin](https://spo.escardio.org/SessionDetail...Id=7806&searchQuery=%2fdefault.aspx%3fevtid%3d1439%26days%3d%26topics%3d%26types%3d%26rooms%3d%26freetext%3dPatients%2bwith%2bperipartum%2bcardiomyopathy%2bdisplay%2ba%2bhigh%2bin)

Provided by European Society of Cardiology

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