**Pregnancy and perinatal outcomes in women with Cystic Fibrosis in the UK: a population-based study using the UK Registry Data, 2003-2017**

Authors Oluwaseun B Esan, Daniela K Schlüter, Rhiannon Phillips, Rebecca Cosgriff, Shantini Paranjothy, Deni Williams, Rachel Norman, Siobhán B Carr, Jamie Duckers, and David Taylor-Robinson

# ABSTRACT

**Objective:** Women with CF are increasingly considering starting families but there is currently a paucity of population-based evidence on the epidemiology of pregnancy in the CF population. We assessed pregnancy rates and outcomes for women with CF in the UK compared to the general population; and assessed the impact of the introduction of Ivacaftor on pregnancy rates.

**Methods:** A population-based study using the UK CF Registry and conceptions data for England and Wales (E&W) for women aged 15-44 years who were pregnant between 2003-2017. We calculated three-yearly crude pregnancy rates per 1,000 women years and age specific rates for all women with CF vs E&W women; and pregnancy rates in women with a G551D mutation before and after Ivacaftor was introduced in 2012. We compared pregnancy outcomes including live birth (LB), abortion, still birth (SB) and miscarriage.

**Results:** Of 3,831 CF women included, 661 reported 818 pregnancies. The overall pregnancy rate was 26.4 (95% CI 24.7-28.3) per 1,000 women years (wys), ~ a third that in E&W women (77.7). This pattern was evident in the age specific rates, except for those aged 40-44 years where the difference in rates between the two populations were attenuated (CF women 8.2 per 1,000 wys vs. 13.3 in E&W). Pregnancy rates in women eligible for Ivacaftor increased ~2-fold from 29.5 to 56.9 per 1000wys comparing 2012-2014 and 2015-2017. Pregnancy outcome was available for 773 pregnancies, of which 70% had a LB, 11.6% miscarriage, 9.6% abortion, and the remaining were unknown or SB. There was ~3fold difference in LB between the two populations (CF women 17.4 per, 1000 wys vs. 61.4 in E&W).

**Conclusions:** Pregnancy rate in women with CF is a third that of E&W womenbutthose aged 40-44 years have similar pregnancy rates. Modulator therapy may have lead to increased pregnancy rates. Overall pregnancy outcomes appear to be similar in women with CF compared to the general population.