WS18.1 Evolution of pregnancies in the French CF Registry: 1992–2011

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More women with CF now become pregnant. Clinicians and patients have many questions about the evolution and prognosis of these pregnancies.

Aim: To describe evolution of pregnancies and clinical status of pregnant women in the French CF Registry.

Methods: Data collected between 1992 and 2011 from women aged 15–49 registered in the Registry were used. For some incomplete data, only follow-up data collected between 2002 and 2011 were analyzed.

Results: During those 20 years, 322 women became pregnant, for a total of 394 pregnancies (average number of pregnancies per woman: 1.2). The annual number of cases has increased (8 in 1992 to 48 in 2011). Age at first pregnancy remains steady (mean±SD: 26.8±5.4 years). Mean VEMS was 51.6% in 1992 and 71.1% in 2011 and is concordant with evolution of VEMS in CF adult women. BMI collected the year preceding pregnancy is constant over the period (mean±SD: 20.4±3). Between 2002 and 2011, the early pregnancy rate was 24.7‰; 72.5% of the women were PI and 22% had diabetes. In total, 35 deaths were registered, occurring 5±3.8 years after pregnancy on average. Mean age at death (31.4±8.3 years) exceeds that of the CF population as a whole (29 years in 2010). Interestingly, 24 women became pregnant after transplant (mean time to pregnancy after transplantation: 3.9±2.3 years).

Conclusion: The annual number of pregnancies has increased dramatically over the last 20 years. The clinical status of pregnant women evolves in a similar manner to that of other adult women in the Registry. This work highlights the increasing number of pregnancies in transplanted patients and it will be interesting to study this specific population.

WS18.2 Impact of pregnancy in women with cystic fibrosis (CF) – A retrospective single centre study

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Background: Improvements in health and survival of patients with CF have led to many women having successful pregnancies.

Objectives: To assess the effects of pregnancy on nutritional and clinical indices in women with CF.

Methods: Retrospective cohort study. Pre- and post-pregnancy (1year) data was analysed in women with CF who had a pregnancy between 2008–2011 at The Alfred, Melbourne. Variables studied included lung function, weight, BMI, HbA1c, vitamin levels, duration of pregnancy and birth weight.

Results: All pregnancies resulted in live births (mean gestation period 37 wks; mean birth weight 2.8 kg). A total of 9 women (16–42 yrs, baseline FEV_1 78%, BMI 21.5 kg/m^2; 9 singleton pregnancies) were studied. Five women were pancreatic insufficient (PI), 2 had CFRDM. An average decline in FEV_1 of 12% was observed post-pregnancy. PI patients' lung function decline was greater compared to PS patients (–17.4% vs –4.7%, $p=0.32$). Women with a FEV_1 >60% gained more weight than those with FEV_1 <60% (11.5 kg vs 4.8 kg, $p=0.098$); PS women gained 4.5 kg more during pregnancy than PI women. Women with PI had significantly lower Vitamin E (19.7 µmol/l vs 25.3 µmol/l, $p=0.015$), lower Vitamin A and D levels and bone density both pre- and post-pregnancy. HbA1c significantly increased post-pregnancy (5.63% vs 6%, $p=0.05$). Three women (PI) developed gestational diabetes (GDM), 1 developed CFRDM. All women are alive to date.

Conclusion: Pregnancy for women with CF is possible but can be associated with specific adverse outcomes. Women with pre-existing poor lung function and PI should be counselled antenatally to ensure adequate nutrition for optimal weight gain and preservation of lung function.

WS18.3 Pregnancy outcomes in cystic fibrosis: A 10-year experience from a UK centre

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Objectives: Whilst pregnancy can be well tolerated in CF, the additional physiological demands may increase health risk for the mother and her baby. Current understanding is limited by a paucity of published series. Our retrospective study investigates pregnancy-related changes in CF.

Methods: A clinical database search enabled identification of all pregnancies at a tertiary unit during 2002–2012. Demographics considered were age, BMI, pancreatic insufficiency, CF-related diabetes CFRD, pseudomonas colonization, FEV1 and FVC. Longitudinal parameters included gestational age, gestational diabetes, haemoptysis, and spirometry at delivery, 6 and 12 months postpartum.

Results: Nine pregnancies in 7 women were identified, comprising 5 vaginal deliveries, 3 C-sections and 1 therapeutic termination.

- Age at conception was 28.7±7.7 years and BMI 23.1±4.3 kg/m^2. 6/9 women were pancreatic insufficient, 2/9 had CFRD, and 8/9 were pseudomonas colonized.
- 3/9 had preterm births (<37 wks), 1/9 developed gestational diabetes, and significant haemoptysis occurred in 5/9.
- Spirometry results are summarised in Table 1.

Table 1. Peripartum lung function in CF (Mean±SD)

	Lung function			
	Baseline	Postpartum % reductions		
		Delivery	6 months	12 months
FEV % predicted	68.9±17.0	3.6±12.8	2.8±9.0	3.5±6.2
FVC % predicted	84.1±21.0	4.7±10.5	0.6±11.3	–3.2±12.7
FEV/FVC % predicted	76.8±7.6	5.9±8.1	5.4±7.3	–0.5±10.0

Conclusion: We observed modest falls in FEV1 immediately post-partum which persisted at 12 months. Significant haemoptysis occurred in more than half of pregnancies; this complication has not previously been reported but warrants further investigation.

WS18.4 Does the presence of diabetes affect lung function outcomes in a pregnant individual with cystic fibrosis?

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Objectives: To explore the differences in FEV_1 during pregnancy in women with cystic fibrosis (CF) with and without diabetes.

Methods: Approximately 1100 individuals with CF have attended The Alfred CF service since 1974. A retrospective cohort analysis was conducted revealing 55 children from 39 CF mothers. From these, 24 complete sets of maternal lung function data were identified. Five of which have CF related diabetes (CFRD) leading up to pregnancy, or developed Gestational Diabetes Mellitus (GDM) during pregnancy. Mean age was 31 (18–42 years). Lung function data was obtained 12 months prior to pregnancy until 12 months post-delivery. Comparisons were made between the average rate of decline in the year leading up to pregnancy, with the 12 months post-delivery. Statistical analysis revealed significant differences in rates of decline leading up to pregnancy. Women with no known diabetes had a rate of decline of 3.88% predicted per year (pred/yr). Women with diabetes had a 6.37% pred/yr rate of decline. Mean = 4.38% pred/yr. Current data in our service suggests an annual rate of decline of 1.3% pred/yr. Minimal change was seen between the two data points in the 'no diabetes group' (pre = 3.88%pred/FEV_1/yr, post = 4.4% pred/FEV_1/yr). Where as the diabetes affected cohort continued to decline at a greater rate than pre conception (pre = 6.37%pred/FEV_1/yr, post = 13.1% pred/FEV_1/yr).

Conclusion: A diagnosis of CFRD pre pregnancy is associated with an accelerated rate of decline of lung function. Analysis of this data would suggest that the added stress of pregnancy has a persistant impact on rate of decline.