Pregnancies in the French CF patient registry: a 20-year survey

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Objective

To study the clinical status of women with CF reporting an early pregnancy and the impact on mother and child health.

Methodology

The 1992 to 2011 individual follow-up questionnaires and the pregnancy questionnaires of the CF registry received from the French care centres were used. Pregnancy data were: assisted reproductive technology, childbirth methods, preterm birth. Clinical data were child weight and length, FEV1 (% predicted), body mass index (BMI), diabetes mellitus, pancreatic insufficiency and genotype. Pregnant women with live birth as outcome (n=254) were compared with nonpregnant women.
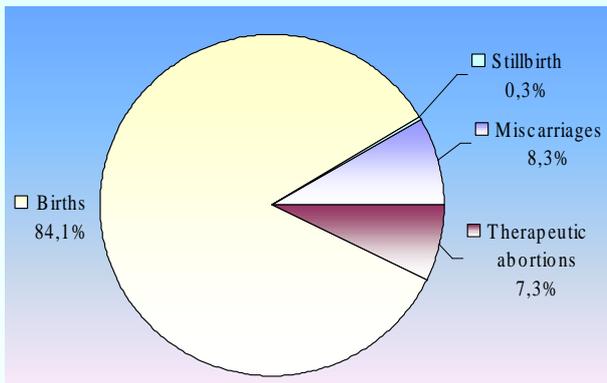
Results

Between 1992 and 2011

88 001 annual follow-ups

8 223 patients with CF

2 232 women of childbearing age (15-49 years)

450 early pregnancies in **335** women

255 births in **208** mothers

Median follow-up time in the registry:

– Women of childbearing age: 6 years (IQR, 3 to 10)

– Women with children: 11 years (IQR, 8 to 14)

Obstetric history

	Pregnancies in CF mothers (N=222)*	Pregnancies in France**	
Assisted reproductive technology Spontaneous pregnancy	76 (34 %) 146 (66 %)	5,6 % 94,4%	p<0.001
Vaginal delivery Caesarean section	169 (75 %) 53 (25 %)	79 % 21 %	NS
Births <37 weeks of gestation Prematurity rate	66 29.7 % (IC 24-36%)	7,4 %	p<0.001

*Data was missing for 12% of the pregnancies

**Direction de la recherche, des études, de l'évaluation et des statistiques, Perinatal study 2010

Outcome in infants

	Children of mothers with CF	Children in France	
Birth weight (mean ± SD) (range)	2.9 ± 0.6 kg (0,65kg – 4kg)	3.2 ± 0.6 kg	p<0.001
Birth length (mean ± SD) (range)	47.8 ± 3.4 cm (32 – 57)	49,2 ± 2,7 cm	p<0.001
CF children (incidence)	3 (1/85)	152 (1/5329)**	

* Direction de la recherche, des études, de l'évaluation et des statistiques, Perinatal study 2010

** AFDPHE 2011

Characteristics of mothers
A case-control study

1 year before index

	Pregnant women N=242 pregnancies	Nonpregnant women N=2365	
Mean FEV1% (± SD)	67% ± 21%	56% ± 25%	p<0.001
Mean BMI (± SD)	20.7 ± 3	19.7 ± 3	p<0.001
Diabetes mellitus	27 (11%)	586 (25%)	p<0.001
Pancreatic insufficiency	165 (69%)	1956 (83%)	p<0.001
Delta F508 homozygous Delta F508 heterozygous Other genotypes	84 (35%) 102 (42%) 56 (23%)	1064 (45%) 938 (40%) 363 (15%)	p<0.001

1 and 3 years after delivery

Mean ± SD	Pregnant women	Nonpregnant women	
Decline in FEV1% Year -1 / +1 Year -1 / +3	 -1.5 ± 13 - 4.4 ± 12**	 -2.0 ± 13** -4.7 ± 14**	 NS NS
Evolution of BMI Year -1 / +1 Year -1 / +3	 0.4 ± 1.9* 0.3 ± 2	 0.1 ± 1.5** 0.3 ± 1.9**	 NS NS

* p<0.05

**p<0.001

Conclusion

One third of the women used fertility treatments, a significantly higher proportion than in the general population. At index year, mothers have significantly better nutritional and pulmonary outcomes than nonpregnant women and fewer are DeltaF508 homozygous.

Three years after index year, decline in pulmonary function and BMI of pregnant and nonpregnant women were similar. Children of women with CF are more likely to be born prematurely, with lower birth weight and length than in the general population. Pregnancies for women with CF are possible and result in favourable maternal and fetal outcomes.