



Faculty of Family Planning and Reproductive Health Care Clinical Effectiveness Unit

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MEMBERS' ENQUIRY RESPONSE

Enquiry Reference: 2020

**Sent: 22nd August 2007
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A: Question

For a woman with cystic fibrosis-diabetes (CFRD) can she safely use combined oral contraception?

B: Response

Cystic fibrosis related diabetes (CFRD) develops in individuals with CF as a consequence of pancreatic pathology. Cystic fibrosis related diabetes is a distinct type of diabetes but shares certain clinical features of both Type 1 and Type 2 diabetes.

Treatment of CFRD differs from the treatment of Type 1 or Type 2 diabetes in that the dietary requirements of CF have to be incorporated into the treatment strategy. In addition, as insulin deficiency is a key feature of CFRD, insulin is often used early in the treatment. Treatment requirements for CFRD often change with clinical status so that an individual may require insulin treatment for optimal management only during an infective exacerbation. In both Type 1 and Type 2 diabetes the onset and progression of complications correlate strongly with duration and control of the diabetes and the coexistence of other risk factors such as hypertension and hypercholesterolaemia. It is now clear that patients with CFRD are at risk of all the microvascular complications of diabetes.

A review of the literature suggests that there is no particular method of contraception contraindicated or recommended for women with cystic fibrosis. Each method needs to be weighed up against the particular pathologies caused by cystic fibrosis that are present in the woman. The CEU considers that women with CFRD should be considered in terms of contraceptive options the same as other women with diabetes.

The United Kingdom *Medical Eligibility Criteria for Contraceptive Use* states that women with a history of gestational diabetes and women with non-vascular diabetes can use combined hormonal contraception as this is a condition where the advantages if using the method generally outweighs the theoretical or proven risks.

Women with diabetes where nephropathy/retinopathy/neuropathy is present or other vascular disease or diabetes of >20 years duration should avoid the use of combined hormonal contraception as this is a condition where the theoretical or proven risks usually outweigh the advantages of using the method or a condition where this represents an unacceptable health risk (dependent on the severity of the condition).

C: Evidence-Based Medicine Question *(which guided our literature search strategy)*

Population: Women with cystic fibrosis-related diabetes

Intervention: Combined oral contraception

Outcome: Safety

Keywords: Combined oral contraception; cystic fibrosis-related diabetes; safety; 2020

D: Information Sources

The CEU searched the following sources in developing this Member's Enquiry Response

Source Searched	Information Identified
Existing FFPRHC and RCOG guidance	See below
The National Guidelines Clearing House	No relevant information
The WHO <i>Improving Access To Quality Care In Family Planning. Medical Eligibility Criteria For Contraceptive Use 2004</i> and <i>Selected Practice Recommendations For Contraceptive Use, 2004</i>	No relevant information
The Cochrane Library	No relevant information
MEDLINE and EMBASE from 1996 to 2007	No relevant information

E: Evidence Reviewed

Background

Cystic fibrosis related diabetes (CFRD) develops in individuals with CF as a consequence of pancreatic pathology. It is more common and develops at an earlier age in individuals who are pancreatic insufficient. The prevalence of CFRD increases with age. Cystic fibrosis related diabetes is a distinct type of diabetes but shares certain clinical features of both Type 1 and Type 2 diabetes. It differs from Type 1 (Insulin Dependent or Juvenile Onset Diabetes) in that onset is usually insidious; many individuals are asymptomatic at diagnosis. In others the first sign may be a decline in pulmonary function. It differs from Type 2 diabetes in that weight loss is often an early feature and reactive hypoglycaemia is not unusual.

The primary cause of glucose intolerance in CFRD is insulinopenia with variable insulin resistance. Pathogenesis of CFRD is still not fully understood. It is distinctly different from Type 1 or Type 2 diabetes but shares some features of both. The reason for these differences is that glucose metabolism is variably affected by the state of the respiratory infection, increased energy expenditure, malnutrition, glucagon deficiency and gastrointestinal abnormalities.¹

Treatment of CFRD differs from the treatment of Type 1 or Type 2 diabetes in that the dietary requirements of CF have to be incorporated into the treatment strategy. In addition, as insulin deficiency is a key feature of CFRD, insulin is often used early in the treatment. Treatment requirements for CFRD often change with clinical status so that an individual may require insulin treatment for optimal management only during an infective exacerbation.

In the simplest terms treatment of diabetes is based on 3 core aims:

- The relief of symptoms and avoidance or treatment of acute (metabolic) complications.
- The prevention of long-term (microvascular and macrovascular) complications of diabetes.
- Avoidance of side effects of treatment (which involves balancing the risks and benefits of treatments for each individual).

In both Type 1 and Type 2 diabetes the onset and progression of complications correlate strongly with duration and control of the diabetes and the coexistence of other risk factors such as hypertension and hypercholesterolaemia. It is now clear that patients with CFRD are at risk of all the microvascular complications of diabetes.

The United Kingdom *Medical Eligibility Criteria for Contraceptive Use* (UKMEC)² gives recommendations on the safe use of contraception give certain health status. The UKMEC *does* not give specific recommendations for women with CFRD. For the use of combined hormonal contraception (pills; patch and vaginal ring) the recommendations as given in the UKMEC are outlined in the table below:

Table 1: Recommendations for the use of combined hormonal contraception in women with diabetes

Diabetes	UKMEC category
History of gestational disease	2
Non-vascular disease	
(i) Non-insulin dependent	2
(ii) Insulin dependent	2
Nephropathy/ retinopathy/ neuropathy	3/4 (The category should be assessed according to the severity of the condition)
Other vascular disease or diabetes of >20 years duration	3/4 (The category should be assessed according to the severity of the condition)

The definitions for the UKMEC categories are as follows:

UKMEC Category 1: A condition for which there is no restriction for the use of the contraceptive method

UKMEC Category 2: A condition where the advantages of using the method generally outweigh the theoretical or proven risks

UKMEC Category 3: A condition where the theoretical or proven risks usually outweigh the advantages of using the method

UKMEC Category 4: A condition which represents an unacceptable health risk if the contraceptive is used.

A review of the literature suggests that there is no particular method of contraception contraindicated or recommended for women with cystic fibrosis. Each method needs to be weighed up against the particular pathologies caused by cystic fibrosis that are present in the woman. The CEU considers that women with CFRD should be considered in terms of contraceptive options the same as other women with diabetes.

F: References

1. Cystic Fibrosis Trust. Management of cystic fibrosis related diabetes mellitus. <http://www.cftrust.org.uk/aboutcf/publications/consensusdoc/diabetes.pdf>. 2007.
2. Faculty of Family Planning and Reproductive Health Care Clinical Effectiveness Unit. UK Medical Eligibility Criteria for Contraceptive Use. <http://www.ffprhc.org.uk/admin/uploads/UKMEC200506.pdf>. 2006.

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