Statutory Approvals Committee – minutes

Centre 0119 (Birmingham Women's Hospital)

Pre-implantation Genetic Diagnosis (PGD) application for Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2), OMIM #614052

Thursday, 12 December 2019

HFEA, Spey Meeting Room, Level 2, 10 Spring Gardens, London, SW1A 2BU

Committee members	Margaret Gilmore (Chair) Anne Lampe Emma Cave Ruth Wilde	
Members of the Executive	Moya Berry Catherine Burwood	Committee Officer Licensing Manager
Specialist Adviser	Professor Peter Turnpenny	
Legal Adviser	Sarah Ellson	FieldFisher - LLP
Observer	Souhaila Cherkaoui	Logistics Officer (Induction)

Declarations of interest

- Members of the committee declared that they had no conflicts of interest in relation to this item.

The committee had before it:

- 9th edition of the HFEA Code of Practice.
- Standard licensing and approvals pack for committee members.

The following papers were considered by the committee:

- Executive Summary
- PGD Application Form
- Redacted Peer Review
- Statutory Approval Committee Minutes 24 May 2018 - Leigh Syndrome OMIM #256000

1. Consideration of application

1.1. The committee welcomed the advice of its specialist adviser, Professor Peter Turnpenny, who confirmed that the condition was as described in the papers.

1.2. The committee noted that the description in the PGD application for Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2), OMIM #614052, is consistent with the peer review.

1.3. The committee noted that the condition being applied for is not on the list of approved PGD conditions.

1.4. The committee noted that the Genetic Alliance UK were requested to provide a perspective on the impact of the condition on patients, their families and carers, but unfortunately did not respond within the allocated deadline for their statement to be considered.

1.5. The committee had regard to its decision tree. The committee noted that the centre is licensed to carry out PGD. The committee was also satisfied that the centre has experience of carrying out PGD and that generic patient information about its PGD programme and associated consent forms had previously been received by the HFEA.

1.6. The committee noted that the proposed purpose of testing the embryos was as set out in paragraph 1ZA(1)(b) of Schedule 2 of the Act, i.e. 'where there is a particular risk that the embryo may have any gene, chromosome or mitochondrion abnormality, establishing whether it has that abnormality or any other gene, chromosome or mitochondrion abnormality'.

1.7. The committee noted Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2), OMIM #614052, is inherited in an autosomal recessive pattern, which means there is a 25% chance of an embryo being affected by the condition in each pregnancy if each parent has a relevant mutation.

1.8. The committee noted the penetrance of the condition is 100%.

1.9. Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2), OMIM #614052, causes a wide variety of different symptoms throughout the body, particularly affecting the nervous system, heart and other muscles. Frequent symptoms also include respiratory and heart failure. Neurological issues include delayed psychomotor development, encephalopathy, seizures and ataxia. The majority of babies born with this condition will be severely affected, and the condition may result in death in infancy or early childhood. Those who survive may experience on-going severe and debilitating symptoms.

1.10. There is no cure for this condition and treatment focuses on managing the symptoms.

1.11. The committee noted the executive's request to consider Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2), OMIM #614052, for inclusion on the list of conditions approved for PGD. The committee agreed to consider the application on this basis.

1.12. The committee also noted the recommendation of the peer reviewer to consider an additional condition for approval for which PGD can be applied. The condition Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 5 (MC5DN5), OMIM #618120, is inherited in an autosomal recessive pattern and is of a similar clinical presentation Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2). The main symptoms of this condition are metabolic decompensation starting in the neonatal period, mild developmental delays, dilated cardiomyopathy, mild proximal weakness, gait imbalance and ankle contractures. Acute encephalopathy is also a possibility.

2. Decision

2.1. The committee considered that, in the worst-case scenario Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2), OMIM #614052, is a rare and serious multi-system disorder that can present in the neonatal period, early infancy or childhood. There is no cure for the condition which may lead to death occurring in early childhood. The ten year survival rate is low.

2.2. The committee considered in the worst-case scenario, Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 5 (MC5DN5), OMIM #618120, is a rare multi-system disorder affecting in particular, the nervous system and the heart. The disorder can be life-threatening in infancy or early childhood.

2.3. The committee had regard to its explanatory note and confirmed that, on the basis of the information presented, it was satisfied that there is a particular risk that an embryo may have the abnormalities in question and that there is a significant risk that a person with such an abnormality will, given the conditions' worst symptoms, have or develop a serious physical disability, a serious illness or any other serious medical condition.

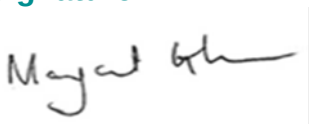
2.4. The committee was therefore satisfied that the following conditions meet the criteria for testing under paragraph 1ZA(1)(b) and (2) of Schedule 2 of the Act. The committee agreed to authorise testing for:

- Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 2 (MC5DN2), OMIM #614052
- Mitochondrial Complex V (ATP synthase) Deficiency nuclear type 5 (MC5DN5), OMIM #618120

3. Chairs signature

3.1. I confirm this is a true and accurate record of the meeting.

Signature



Name
Margaret Gilmore

Date
6 January 2020