Statutory Approvals Committee – minutes

Centre 0044 (The Centre for Reproductive and Genetic Health)

Pre-implantation Genetic Diagnosis (PGD) application for Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222

Thursday, 27 February 2020

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

Committee members	Margaret Gilmore (Chair) Emma Cave Anne Lampe Tony Rutherford Ruth Wilde	
Members of the Executive	Moya Berry Catherine Burwood	Committee Officer Licensing Manager
Specialist Adviser	Dr Alan Fryer	
Legal Adviser	Tom Rider	FieldFisher - LLP
Observer	Emily Tiemann (Induction)	Policy Officer

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
- Genetic alliance UK Statement

1. Consideration of application

1.1. The committee welcomed the advice of its specialist adviser, Dr Alan Fryer, who confirmed that the condition was as described in the papers.

1.2. The committee noted that the description in the PGD application for Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222, 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 statement provided a perspective on the impact of the condition on patients, their families and carers.

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 that Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222, 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 penetrance is not known due to the rarity of this condition, however given that the condition is recessive, penetrance is likely to be 100%.

1.9. Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222, is characterised by sudden and unexpected fatal cardiac arrest in infants below the age of two years. In some families, the affected child may have a history of seizures, low muscle tone, failure to thrive or abnormalities of the heart muscle, prior to cardiac arrest. However, in many families there will be no previous signs of a chronic health problem before the sudden death of the child. The only trigger may have been a mild upper respiratory infection.

1.10. There is no cure for this condition. Treatment can include the implantation of an ICD (Implantable cardiac defibrillator) but this may not be possible in cases involving babies and small children. Inserting an ICD in a small child is a very difficult procedure and carries a risk of serious complications which can be fatal.

1.11. The committee noted the executive's request to consider Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222, for inclusion on the list of conditions approved for PGD. The committee agreed to consider the application on this basis.

1.12. The committee noted the recommendation of the executive to consider an additional condition for approval for which PGD can be applied. The condition Sudden Cardiac Failure, Alcohol induced (SCFAI), OMIM #617223, is inherited in an autosomal recessive pattern. This condition is due to mutations in the PPA2 gene, the same gene that is associated with Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222. Penetrance is not known due to the rarity of this condition, however given the condition is recessive, penetrance is likely to approach 100%.The condition can result in sudden cardiac death in childhood or early adulthood, which can be precipitated by a mild viral illness or a very tiny amount of alcohol e.g. potentially in medicinal compounds. Some patients have preceding symptoms of cardiac failure including shortness of breath, some have seizures and others may have muscle weakness or hypotonia. In some cases, death occurs suddenly in previously well people.

2. Decision

2.1. The committee considered that in the worst-case scenario, Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222, is a rare, serious and life-threatening condition that can cause sudden and unexpected cardiac arrest in infants below the age of 2 years.

2.2. The committee considered that in the worst-case scenario Sudden Cardiac Failure, Alcohol induced (SCFAI), OMIM #617223 is a rare, serious and life-threatening condition, that can cause sudden and unexpected death in childhood or early adulthood. The committee noted

the serious implications and impact on the quality of life for those affected with the condition and their carers.

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.

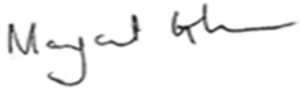
2.4. The committee was therefore satisfied that the following conditions meet the criteria for testing under paragraph 1ZA(1)(b) and (2) of Schedule 2 of the Act. The committee agreed to authorise testing for:

- Sudden Cardiac Failure, Infantile (SCFI), OMIM #617222
- Sudden Cardiac Failure, Alcohol induced (SCFAI), OMIM #617223

3. Chairs signature

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

Signature



Name
Margaret Gilmore

Date
17 March 2020