Statutory Approvals Committee – minutes

Item 4

Centre 0102 (Guys Hospital)

Pre-implantation Genetic Diagnosis (PGD) application for Cone Rod Dystrophy 6 OMIM #601777

Thursday, 28 March 2019

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

Committee members	Margaret Gilmore (Chair) Bobbie Farsides (Deputy Chair) Emma Cave Anne Lampe Tony Rutherford	
Members of the Executive	Moya Berry Catherine Burwood	Committee Secretary Licensing Manager (Observer)
Specialist Adviser	Dr Alison Male	
Legal Adviser	Tom Rider	Fieldfisher LLP
Observers	Hannah Carpenter	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

- 2018-07-26 Statutory Approvals Committee Minutes- PGD for Stargardt disease type 1 OMIM #248200
- 2015-05-28 - SAC Minutes (Item 3) - PGD for Leber congenital amaurosis types 3 - 17

1. Consideration of application

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

1.2. The committee noted that the description in the PGD application for Cone Rod Dystrophy 6 (CORD6), OMIM #601777 was 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 opinion provided a patient perspective and supported the application.

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 Cone Rod Dystrophy 6 is inherited in an autosomal dominant pattern, which means there is a 50% chance of an embryo being affected with the condition in each pregnancy if either parent has a relevant mutation.

1.8. The exact penetrance is not known but is close to 100%.

1.9. The condition is characterised by poor central vision and an abnormal electroretinogram (ERG) which caused by a progressive degeneration of the light receptor cells (cones and rods) in the retina of the eye. The age of onset starts from early childhood into adulthood.

1.10. Symptoms of the condition include varying degrees of light sensitivity (photophobia), loss of clarity of vision (visual acuity), impairment of colour vision and central visual fields. In addition, it can cause involuntary eye movements (nystagmus) that may be present in early onset disease. The severity of the condition can vary within the same family but the earlier the onset of symptoms the more severe the degeneration of the condition.

1.11. There is currently no treatment for individuals with Cone Rod Dystrophy 6. However, some aids may help to slow the progression of disease such as low-vision aids and avoiding bright lights. The committee noted the quality of life for these patients may be affected as the condition can lead to severe visual impairment with legal blindness in childhood or by early adult life.

1.12. The committee noted the inspectorate's request to consider whether Cone Rod Dystrophy 6,OMIM #601777 should be approved for inclusion on the list of conditions approved for PGD. The committee agreed to consider the application on this basis.

1.13. The committee noted the request of the peer reviewer to include an additional 16 other subtypes of Cone Rod Dystrophy within the application for PGD. Cone Rod Dystrophy 2 OMIM # 120970, Cone Rod Dystrophy 3 OMIM #604232, Cone Rod Dystrophy 5 OMIM #600977, Cone Rod Dystrophy 6 OMIM #601777, Cone Rod Dystrophy 7 OMIM #603349,

Cone Rod Dystrophy 9 OMIM #612775, Cone Rod Dystrophy 10 OMIM #610283, Cone Rod Dystrophy 11 OMIM #610381, Cone Rod Dystrophy 12 OMIM #612657, Cone Rod Dystrophy 13 OMIM #608194, Cone Rod Dystrophy 14 OMIM #602093, Cone Rod Dystrophy 15 OMIM #613660, Cone Rod Dystrophy 16 OMIM #614500, Cone Rod Dystrophy 18 OMIM #615374, Cone Rod Dystrophy 19 OMIM #615860, Cone Rod Dystrophy 20 OMIM #615973, Cone Rod Dystrophy 21 OMIM #616502.

1.14. The risk of inheriting Cone Rod Dystrophy types 2, 5, 7, 11, 12, 14, is 50% in each pregnancy if either parent carries a causative mutation. The risk of inheriting types 3, 9, 10, 12, 13, 15, 16, 18, 19, 20 and 21 is 25% in each pregnancy if each parent has the relevant mutation, type 12 can be either autosomal dominant or recessive.

1.15. The conditions all share visual impairment, variability and age of onset differs depending on the subtypes, CORD 2, 3, 5, 9, 11, 12, 13, 16, 19, 20 have reported reduced central vision from early life/childhood with inexorable progression. CORD 7, 14, 15, 18, 21 has an onset of loss of central vision from early adult age.

2. Decision

2.1. The committee considered that, in the worst-case scenario Cone Rod Dystrophy 6,OMIM #601777 is a serious condition which is progressive and incurable and can lead to severe visual impairment with legal blindness in childhood or by early adult life. The condition can significantly impact on the quality of life for patients and their families and may also have a serious psychological effect as a result of its progressive nature. In addition, the committee noted a recent review which stated that ‘visual acuity in more than half of patients with CORD, deteriorated to legal blindness by the age of 23’. There is no treatment to prevent degeneration of the disease.

2.2. The committee considered the recommendation to include Cone Rod Dystrophy 2, 3, 5, 6, 7 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21, to the list of conditions for which PGD can be applied. The committee considered the advice of the specialist advisor who confirmed that all conditions have the same phenotype and that the progression and the disability that results will be the same as Cone Rod Dystrophy 6, whatever the age of onset.

2.1. 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 abnormality in question and that there is a significant risk, that a person with the abnormality will, given the conditions’ worst symptoms, have or develop a serious physical disability, a serious illness or any other serious medical condition.

2.2. 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:

- Cone Rod Dystrophy 6 OMIM #601777

The committee also agreed to authorise testing:

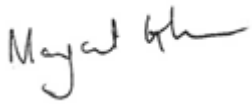
- Cone Rod Dystrophy 2 OMIM #120970
- Cone Rod Dystrophy 3 OMIM #604232
- Cone Rod Dystrophy 5 OMIM #600977
- Cone Rod Dystrophy 7 OMIM #603349
- Cone Rod Dystrophy 9 OMIM #612775
- Cone Rod Dystrophy 10 OMIM #610283
- Cone Rod Dystrophy 11 OMIM #610381

- Cone Rod Dystrophy 12 OMIM #612657
- Cone Rod Dystrophy 13 OMIM #608194
- Cone Rod Dystrophy 14 OMIM #602093
- Cone Rod Dystrophy 15 OMIM #613660
- Cone Rod Dystrophy 16 OMIM #614500
- Cone Rod Dystrophy 18 OMIM #615374
- Cone Rod Dystrophy 19 OMIM #615860
- Cone Rod Dystrophy 20 OMIM #615973
- Cone Rod Dystrophy 21 OMIM #616502

3. Chairs signature

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

Signature



Name

Margaret Gilmore

Date

24 April 2019