HFEA Statutory Approvals Committee

24 April 2014

Finsbury Tower, 103-105 Bunhill Row, London, EC1Y 8HF

Minutes – Item 7

Centre 0101 (CARE Nottingham) – PGD application for Mitochondrial Trifunctional Protein Deficiency OMIM #609015

Members of the Committee: David Archard (lay) Chair Rebekah Dundas (lay) Sue Price (professional) Jane Dibblin (lay) Debbie Barber (professional) Advisor: Dr Peter Turnpenny	Committee Secretary: Lauren Crawford Legal Adviser: Graham Miles, Morgan Cole Also in attendance: Sam Hartley, Head of Governance and Licensing, HFEA

Declarations of Interest: The Members declared no conflicts in relation to this item

The following papers were considered by the Committee:

- Executive summary
- Application form
- Redacted peer review

The Committee also had before it:

- HFEA Protocol for the Conduct of Licence Committee Meetings and Hearings
- 8th edition of the HFEA Code of Practice
- Human Fertilisation and Embryology Act 1990 (as amended) ("the Act")
- Decision trees for granting and renewing licences and considering requests to vary a licence (including the PGD decision tree); and
- Guidance for members of Authority and Committees on the handling of conflicts of interest approved by the Authority on 21 January 2009.
- Guidance on periods for which new or renewed licences should be granted
- Standing Orders and Instrument of Delegation
- Indicative Sanctions Guidance
- HFEA Directions 0000 – 0012

- Guide to Licensing
- Compliance and Enforcement Policy
- Policy on Publication of Authority and Committee Papers
- HFEA Pre-Implantation Diagnostic Testing ("PGD") Explanatory Note For Licence Committee

Discussion

1. 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.

2. 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'.

3. The Committee noted that Mitochondrial Trifunctional Protein Deficiency (OMIM #609015) is inherited in an autosomal recessive pattern and there is a 1 in 4 chance of an embryo being affected with the condition where both parents are carriers.

4. The Committee noted that Mitochondrial Trifunctional Protein Deficiency prevents the body from converting certain fats into energy. This can lead to affected individuals suffering from metabolic crises, characterised by extreme sleepiness, behavioural changes/irritability, muscle weakness and poor appetite. This is accompanied by fever, nausea and vomiting, low blood sugar and in the accumulation of acidic substances in the blood. In the worst case scenario these metabolic crises can lead to breathing difficulties, shock, coma and death.

5. The Committee noted that severe cases diagnosed in infancy are often accompanied by serious heart problems and liver problems, as well as breathing difficulties. Children who survive show no response to pain and have delays in walking and learning. In some individuals the condition is not diagnosed until later in childhood, in which cases symptoms are similar, but accompanied by fewer metabolic crises. Some affected individuals present with a protracted progressive course associated with muscle pain, breakdown of muscle tissue and peripheral neuropathy (nerve damage). In the mild/muscle form, intelligence is normal and muscle breakdown is characterised by muscle pain, tenderness, weakness and swelling of the

affected muscles. Release of the components of muscle tissue into the bloodstream causes disturbances in electrolytes, which can lead to nausea, vomiting, confusion, kidney damage, coma or abnormal heart rate and rhythm.

6. The Committee noted that treatment may prolong life for individuals with the early/infant type, however in the majority of cases affected individuals die due to heart problems by three years of age. Treatment of individuals affected by the childhood form may allow them to survive into adolescence or adulthood. Treatment will be lifelong, and repeat crises can cause permanent brain damage and result in learning difficulties and mental retardations. In the mild/muscle form, lifespan is not normally affected. To prevent metabolic crises, affected individuals should eat frequently and follow a low fat, high carbohydrate diet, which can be supplemented. Affected individuals should avoid heavy exercise and extreme cold. There is no curative treatment.

7. The Committee noted that the application is consistent with the Peer Review.

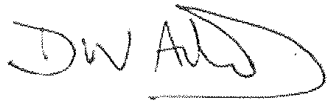
8. The Committee welcomed the advice of its Advisor, Peter Turnpenny, who confirmed that the condition was as described in the papers and further explained that mild cases of the disorder are rare and most affected individuals have a poor outcome.

9. The Committee considered that the condition is serious because it can require lifelong treatment to prevent for metabolic crises and in the worst case scenario affected individuals die before age three due to heart problems.

10. The Committee had regard to its explanatory note and noted that on the basis of the information presented, given the condition's worst symptoms, it was satisfied that there is a significant risk that a person with the abnormality will have or develop a serious physical or mental disability, a serious illness or any other serious medical condition. The Committee was therefore satisfied that the condition meets the criteria for testing under paragraph 1ZA(1)(b) and (2) of Schedule 2 to the Act.

11. The Committee agreed to authorise the testing of embryos for Mitochondrial Trifunctional Protein Deficiency (OMIM #609015).

Signed: Date: 07/05/2014



David Archard (Chair)