HFEA Licence Committee Meeting

30 September 2010

21 Bloomsbury Street London WC1B 3HF

Minutes – Item 1

Centre 0078 (IVF Hammersmith) – Embryo testing for Alpha-1-antitrypsin deficiency OMIM +107400

Members of the Committee:	Committee Secretary:
David Archard (lay) – Chair Anna Carragher (lay) Sally Cheshire (lay) Jane Dibblin (lay) Sue Price (Professional)	Terence Dourado Legal Advisers: Graham Miles, Morgan Cole

Declarations of Interest: members of the Committee declared that they had no conflicts of interest in relation to this item.

The following papers were considered by the Committee:

- Executive Summary
- PGD application form
- Redacted peer review
- Opinion from Genetic Alliance UK and Alpha1 Awareness UK

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)
- 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

1. The Committee had regard to its Decision Tree. The Committee was satisfied that the Centre is licensed to provide PGD and that the HFEA had received generic patient information about its PGD programme.

2. The Committee noted that the Centre's proposed purpose of testing the embryos was as set out in paragraph 1ZA(1)(b) of schedule 2 of the Act, ie. '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 Alpha-1-antitrypsin deficiency OMIM +107400 is inherited in an autosomal codominant pattern (i.e two versions of the gene may be expressed which both contribute to the phenotype). If an embryo inherits particular combinations of the faulty genes from both parents it will develop the disease, ie. there is a 25% chance of the embryo having the abnormality.

4. The Committee noted that there is a significant risk that those born with the affected gene will develop lung disease and liver disease which may shorten their lifespan.

5. The Committee noted that variable phenotypes can give deficiency of the enzyme, but that only the ZZ pattern is associated with severe disease. Patients with PiZZ genotype accumulate damage in their lung throughout their lives. This damage leaves the patient susceptible to recurrent respiratory infections. Emphysema is common before the age of forty, even in non-smokers. By middle age, patients can be visiting hospital frequently to receive treatment for infections that must be treated on an in-patient basis. By late middle age long-term oxygen therapy may be necessary and lung-transplantation may be an option for some patients. To limit damage to their lungs A1AD PiZZ patients must avoid environments which pose a risk. The Committee noted that the condition is also serious because approximately 2% of children may be born with or develop severe liver complications. Overall, 15-19% of adults over the age of 50 with two Z alleles develop an accumulation of scar tissue in the liver (cirrhosis). However, the Committee noted that the symptoms can develop at any age with a greater risk of cirrhosis in later life. In considering the condition's treatability, the Committee noted that liver transplants can cure

the disease because the donor liver will produce the alpha-1 antitrypsin protein. However, it found little evidence to suggest that lung transplants improve the lifespan of an individual with the condition.

6. On the basis of the information presented, the Committee was satisfied that there is a significant risk that, where two Z alleles (ZZ) are inherited, a person with the abnormality will have or develop a serious physical or mental disability, a serious illness or any other serious medical condition. Accordingly, it was appropriate to grant the application under 1ZA(1)(b) of Schedule 2 to the Act.

7. The Committee noted paragraph 10.5 of the Code of Practice (8th edition)/ HFEA guidance for Centres: 'The use of PGD should be considered only where there is a significant risk of a serious genetic condition being present in the embryo. When deciding if it is appropriate to provide PGD in particular cases, the seriousness of the condition in that case should be discussed between the people seeking treatment and the clinical team. The perception of the level of risk for those seeking treatment will also be an important factor for the centre to consider.'

8. The Committee agreed that the licence should be varied to authorise the testing of embryos for Alpha-1-antitrypsin deficiency - OMIM +107400 (where two Z alleles are inherited) and that no conditions should be put on the licence in relation to the variation. The Committee confirmed that this condition will be added to the published list of conditions for which PGD may be carried out.

Signed..... Date...6.10.2010

David Archard (Chair)