Statutory Approvals Committee - minutes

Centre 0006 (The Lister Fertility Clinic)

Preimplantation Genetic Diagnosis (PGD) application for Glycogen storage disease type 1b, OMIM #232220

Date:	27 May 2021
Venue:	Microsoft Teams Meeting
Committee Members:	Margaret Gilmore (Chair) Emma Cave Anne Lampe Ruth Wilde
Specialist Adviser:	Alison Male
Legal Adviser:	Graham Miles – Blake Morgan LLP
Members of the Executive:	Moya Berry - Committee officer Catherine Burwood - Licensing Manager
Observers:	Dina Halai- Senior Scientific Policy Manager HFEA India Hickey – Research Officer (Induction)
Apologies:	No apologies were received for the meeting
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:

- HFEA Code of Practice 9th edition
- Standard Licensing and Approvals Pack

The following papers were considered by the committee:

- Executive Summary
- PGD Application form
- Redacted Peer review
- Genetic Alliance (UK) statement
- 2018-05-24 Statutory Approvals Committee Minutes - PGD for Glycogen Storage Disease Type 4, OMIM #232400
- 2017-03-30 Statutory Approvals Committee Minutes - PGD for Glycogen Storage Disease Type 3, OMIM 232500
- 2011-08-25 Licence Committee Minutes - PGD for Glycogen Storage Disease Type 1A, OMIM #232200

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 Glycogen storage disease type 1B, OMIM #232220, 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 Glycogen storage disease type 1B, OMIM #232220, is inherited in an autosomal recessive manner, 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 that the penetrance of the condition is 100%.

1.9. Glycogen storage disease type 1B, OMIM #232220, is characterised by a failure to breakdown glycogen in the liver and muscle. The condition presents at around 3-4 months of age with hypoglycemia (low blood sugar) leading to seizures and lactic acidosis, and a risk of subsequent coma and sudden death. The liver and spleen also become enlarged and chronic neutropenia (low white blood cell count) commonly develops, leaving affected individuals susceptible to infection.

1.10. There is no cure for this condition. Treatments are extremely limited and symptom management is commonly achieved by frequent feeding, usually by means of a nasogastric or gastrostomy tube and pump, this being vital to maintain stability of all metabolic functioning.

1.11. The committee noted the executive's request to consider Glycogen storage disease type 1B, OMIM #232220, 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 a number of additional conditions for inclusion on the list for which PGD can be applied and agreed to consider the application on this basis. The conditions are:

- Glycogen storage disease V, (GSD5), OMIM #232600
- Glycogen storage disease VI (GSD6), OMIM #232700
- Glycogen storage disease VII (GSD7), OMIM #232800
- Glycogen storage disease IXa1 (GSD9A1), OMIM #306000
- Glycogen storage disease IXa2 (GSD9A2), OMIM #306000
- Glycogen storage disease IXb (GSD9B), OMIM #261750
- Glycogen storage disease IXc (GSD9C). OMIM #613027
- Glycogen storage disease IXd ((GSD9D), OMIM #300559

1.13. The conditions are inherited in an autosomal recessive manner meaning there is a 25% chance of an embryo being affected by the condition in each pregnancy if each parent has a relevant mutation. The conditions all present with an inability to process glycogen which can affect a wide range of organs including the liver.

1.14. The committee also noted the peer reviewer's request to consider the following conditions for inclusion on the list for which PGD can be applied. Glycogen storage disease X (GSD10). OMIM #261670, Glycogen storage disease XI (GSD11), OMIM #612933 and Glycogen storage disease XII (GSD12), OMIM #611881. However based on the advice of its specialist adviser, the committee agreed that as the conditions were of a different phenotype and clinical presentation and therefore it was not appropriate to consider these for PGD at this time.

1.15. In addition, the committee considered the peer reviewer's recommendation that Glycogen storage disease 1C (GSD1C), OMIM #232240, should no longer be considered as a separate condition. This is because, as at a molecular level, it is the same as Glycogen storage disease 1B (GSD1B), OMIM #232220 and has similar symptoms with associated risks of seizures and coma. Based on the advice of the specialist adviser, who confirmed that both conditions are synonymous with each other, the committee agreed that Glycogen storage disease 1C (GSD1C), OMIM #232240 does not need separate approval for PGD.

2. Decision

2.1. The committee considered that, in the worst-case scenario, Glycogen storage disease type 1B, OMIM #232220, is a serious and potentially fatal multi-systems condition that presents shortly after birth with hypoglycemia (low blood sugars). If the condition is left untreated, it can lead to life-threatening seizures, brain damage and ultimately death. Those living with the condition will require intense health surveillance and invasive medical treatment. The committee considered the serious implications for, and the physical and psychological impact that may effect the quality of life of, those affected by the condition.

2.2. The committee also considered. that the following conditions:

- Glycogen storage disease V, (GSD5), OMIM #232600
- Glycogen storage disease VI (GSD6), OMIM #232700
- Glycogen storage disease VII (GSD7), OMIM #232800

- Glycogen storage disease IXa1 (GSD9A1), OMIM #306000
- Glycogen storage disease IXa2 (GSD9A2), OMIM #306000
- Glycogen storage disease IXb (GSD9B), OMIM #261750
- Glycogen storage disease IXc (GSD9C). OMIM #613027
- Glycogen storage disease IXd ((GSD9D), OMIM #300559

are, in the worst-case scenario, serious and potentially fatal conditions that carry a significant risk of morbidity affecting a range of organs. Those affected require life-long surveillance. The committee considered the serious implications for, and the potential physical and psychological impact on the quality of life of, those affected by the condition.

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

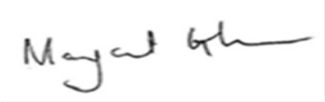
2.4. The committee was therefore satisfied that the following conditions meet the criteria for testing under paragraph 1ZA(1)(b) and (2) of Schedule 2 of the Act. The committee agreed to authorise testing for:

- Glycogen storage disease type 1B, OMIM #232220
- Glycogen storage disease V, (GSD5), OMIM #232600
- Glycogen storage disease VI (GSD6), OMIM #232700
- Glycogen storage disease VII (GSD7), OMIM #232800
- Glycogen storage disease IXa1 (GSD9A1), OMIM #306000
- Glycogen storage disease IXa2 (GSD9A2), OMIM #306000
- Glycogen storage disease IXb (GSD9B), OMIM #261750
- Glycogen storage disease IXc (GSD9C). OMIM #613027
- Glycogen storage disease IXd ((GSD9D), OMIM #300559

3. Chair's signature

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

Signature



Name

Margaret Gilmore

Date

21 June 2021