Investigating the benefits of 'sticky sperm' for IVF

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Scientists from the University of Leeds are investigating whether a molecule usually found in moisturisers and skin creams could improve IVF success rates in the UK.

Embryologists running a clinical trial at the University are investigating whether hyaluronic acid, normally found in beauty products which are designed to maintain elasticity in the skin and keep hair and joints hydrated, helps sperm stick to the human egg when it is released from the ovary.

The hyaluronic acid method relies on picking only mature and fertile sperm that stick to a specially coated plate for injection into the egg.

Dr David Miller, Reader in Molecular Andrology in the School of Medicine, is leading the trial for Leeds. He said: "We want to investigate whether hyaluronic acid helps better quality sperm stick to an egg.

"We need to be in a position to choose the best quality sperm for the egg because the IVF method we are using involves injecting a sperm directly into the egg, so it's advisable to choose the sperm with the least DNA damage."

Selecting the best sperm for this method takes about 10 minutes and does not cause any damage to the sperm. A slotted petri dish is used, into which sperm is added. At end of each slot there is a chamber containing the hyaluronic acid 'glue'.

The sperm swims towards the hyaluronic acid and binds to it, but it can be easily removed by the operator.

Dr Miller continued: "They way I describe the process is that a single sperm is similar to a kind of 'mini-velcro' – the sperm can be stuck down but it can also be removed with ease."

The trial is funded by the National Institute for Health Research Efficiency and Mechanism Evaluation (NIHR EME) Programme.

On average, three out of four IVF treatment cycles for couples currently end in failure and the trial seeks to determine whether this selection method can help improve matters.

Experts at the University of Leeds, alongside colleagues from research laboratories at Sheffield University, Birmingham University and Queen's University in Belfast, will also be investigating if this new selection method based on sperm 'stickiness' works by reducing the risk of injecting a sperm carrying damaged DNA into the egg.

More information: For more information on the trial, visit: www.habselect.org.uk

Provided by University of Leeds