



Saint Mary's Managed Clinical Service
Division of Reproductive Medicine

PATIENT INFORMATION LEAFLET

ARTIFICIAL OOCYTE ACTIVATION (AOA)

WHAT IS AOA?

When a sperm enters an egg, it sends a natural signal that 'switches on' the egg (this is known as activation). Activation causes the egg to release calcium from inside, this rise in calcium levels is essential for starting the fertilisation process and embryo development.

If the sperm does not release this activating signal or the egg does not respond to it properly, the egg may not activate and will remain unfertilised, even after Intracytoplasmic sperm injection (ICSI).

Artificial Oocyte Activation (AOA) is a technique that uses a special substance known as calcium ionophore, to help to artificially increase the calcium levels inside the eggs, with the aim of mimicking the natural activation signal and help to improve fertilisation.

HOW IS AOA PERFORMED?

After each egg has been injected with a single sperm (a technique known as ICSI), it is placed into a special solution containing calcium for 15 minutes. The eggs are then washed and returned to a specialised incubator, where they are left to fertilise as they would in any other ICSI treatment cycle.

There is currently no commercially available calcium ionophore product that is specifically designed and certified for IVF treatment. The calcium ionophore used at St Mary's is certified as a diagnostic tool for use with human eggs and is widely used within the fertility sector. This means that the product still meets strict safety and quality standards for use with human eggs, but it has not undergone the additional testing required to be licensed specifically as a treatment. When we use it, we follow professional guidelines and apply rigorous safety checks to ensure it is appropriate for your care.

ICSI



AOA

Eggs are placed in the AOA solution after the ICSI procedure

WHO CAN BENEFIT FROM AOA?

Failed or significantly reduced fertilisation in ICSI cycles may be caused by eggs that cannot activate by themselves, or by sperm that cannot activate the eggs properly. In these cases, AOA may help by improving egg activation and therefore improving chances of fertilisation.

Many studies have shown that AOA can improve fertilisation rates in patients that have experienced previous failed or low fertilisation. These studies show that when fertilisation is achieved, the pregnancy rates are similar to those with standard ICSI. However, AOA will not provide a benefit for all patients, and we cannot guarantee that AOA will improve fertilisation as this is a complex process. AOA is intended to be of benefit for a specific group of patients only.

WHAT ARE THE RISKS OF AOA?

AOA is an additional step where eggs are briefly exposed to a special solution that contains calcium. Because AOA is still being researched, its long-term safety is not yet fully understood. There may be a small risk that it could affect embryo development and increase the chance of miscarriage, although this has not been proven. Studies to date have found no harmful effects in children born after AOA, but further research is needed.

IS THERE AN ADDITIONAL COST FOR AOA?

There is an additional charge of £230 for AOA. If you decided to have this treatment, please contact the Fee-Paying team through the Salve patient portal or by email (IVF.Feepaying@mft.nhs.uk) to arrange payment.

THE HUMAN FERTILISATION AND EMBRYOLOGY AUTHORITY (HFEA) AND AOA

AOA is an HFEA authorised process which can only be used for a selected group of patients, in line with the best practice guidelines. These guidelines published by the Association of Reproductive and Clinical Scientists and the British Fertility Society specify that AOA can only be used by patients where two previous routine ICSI cycles have resulted in <30% or no fertilisation.

More information can be found relating to AOA on the HFEA website:

<https://www.hfea.gov.uk/treatments/treatment-add-ons/>



PATIENT/PARTNER CONSENT

I/We have read the information above and wish to use AOA in our treatment cycle.

I/We understand that AOA may not improve the fertilisation rate.

I/We understand the risk of a further failed or low fertilisation following ICSI and AOA in this cycle.

I/We understand that the potential developmental consequences and birth outcomes when using AOA are yet to be established.

Patient Name: Signature:
Date.....

Partner Name: Signature:
Date.....

Patient/Partner Details:

Witnessing of AOA Procedure in the IVF Laboratory		
Witness step	AOA Operator Sign/Date/Time	Witness Sign/Date/Time
Injection dish to AOA dish		
AOA dish to Wash dish		
Wash dish to Culture (ES) dish		

CONTACT DETAILS



0161 276 6000 (option 1)



<https://www.mft.nhs.uk/saint-marys/services/gynaecology/reproductive-medicine/>