

An Overview on Potential of Artificial Intelligence in the Field of IVF and Fertility

Anika Rajal*

Department of Obstetrics and Gynaecology, St Johns Medical College, Bangalore, India

INTRODUCTION

In vitro fertilization (IVF) is one of the therapies that can assist the one out of every seven couples that are unable to conceive. In a laboratory, an egg is extracted from the ovary of the individual who will be bearing the child and artificially fertilized with sperm. After that, the embryo is returned to the uterus. It can be done with donor eggs and sperm, as well as a pregnant woman and her husband, making it a viable choice for people and couples who are unable to conceive for a number of reasons.

IVF success rates, on the other hand, are dependent on the cause of infertility as well as the age of the individual undergoing the procedure. According to the NHS in the United Kingdom, IVF success rates are about 29% for women under 35 and steadily decrease to just 2% for women over 44.

Successful pregnancies resulting from IVF, which is highly expensive and has a poor success rate, are dependent on a complicated series of clinical decisions made by doctors in order to provide the best treatment for each patient.

IVF is currently a very manual procedure that varies widely from clinic to clinic. This variety is beneficial to the field because what one clinic does in one part of the country may be ideal for certain patients, whereas protocols at another clinic in another part of the country may be best for another group of patients.

“The issue is how to disseminate these learnings and provide them to clinicians as a tool, and AI will help with that. It can analyze hundreds of thousands of patient encounters to uncover trends so that when a new patient arrives for treatment, we can apply what we've learned from past cases and clinical procedures to improve their chances of success.”

Prioritization of transferrable embryos is one of the fields where AI has the most potential. The programme will use pattern recognition to respond to the data set and make suggestions on the embryos would be the most successful for a specific patient.

AI is set to have a big impact on IVF and fertility treatments

Alife has spent the last year figuring out how to put the technology into use, growing its staff, and engaging with clinics to gather data.

Mader-York claims that the company is collaborating closely with the US Food and Drug Administration (FDA) to demonstrate the system's protection and effectiveness, including conducting comprehensive internal testing and conducting efficacy trials with major clinical institutions.

Embryonics, which uses a database of millions of anonymized patient records to inform IVF decision-making, and Presagen, a start-up that uses AI to boost women's healthcare across the board, have also released Life Whisperer, a platform that uses AI to test 2D images of embryos for their probability of success in IVF.

Big pharma has taken an interest as well. In January of this year, Philips and Merck announced a collaboration to develop personalized fertility therapies focused on remote patient tracking, AI-assisted ultrasound, and cloud-based services.

Correspondence to: Anika Rajal, Department of Obstetrics and Gynaecology, St Johns Medical College, Bangalore, India, E-mail: rajalika233@gmail.com

Received: April 29, 2021; **Accepted:** May 17, 2021; **Published:** March 25, 2021

Citation: Rajal A (2021) An Overview on Potential of Artificial Intelligence in the Field of IVF and Fertility. J Fertil In vitro IVF Worldw Reprod Med Genet Stem Cell Biol 9:3. doi: 10.35248/2375-4508.21.9.235

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