

[0005] IVF is an expensive procedure and can be psychologically traumatic for a patient. Surgical procedures are required to collect eggs from a female for IVF and, following fertilization, further surgery is required to implant the fertilized eggs in the womb. The recipient must then wait for a period of time before it can be determined whether or not pregnancy has been established. In some cases, pregnancy may never be achieved despite repeated attempts, and these cases can represent a considerable expense to the patient and society, both in financial and human terms.

[0006] Therefore, until success rates of IVF can be improved, it would be desirable to be able to identify recipients for whom IVF is unlikely to be successful prior to treatment, so that such patients may avoid the above mentioned costs and trauma of the IVF procedure.

[0007] The present invention addresses these needs.

~~SUMMARY OF THE INVENTION~~

[0008] Methods and computer-based systems for facilitating assessment of clinical infertility are provided. The methods and systems can be implemented to, for example, facilitate assessment of a subject for an in vitro fertilization treatment cycle, including determining probability of a live birth event. The methods and systems can be implemented to, for example, facilitate a determination of success of implantation of embryos, selection of an optimal number of embryos to transfer, and determination of success in subsequent in vitro fertilization treatment cycles following an unsuccessful treatment cycle.

[0008a] In one aspect of the present disclosure, there is provided a method of predicting the probability that a female subject will experience a live birth event comprising the steps of:

(a) entering into a computer system variables known to be associated with or influence a female subject's chance of experiencing a live birth event, wherein the computer system comprises a prediction model comprising at least one statistical technique that calculates the probability that a female individual will experience a live birth event based upon at least four variables selected from the group consisting of female age, clinical diagnosis, clinical treatment information, medication, previous infertility history, number of previous pregnancies, number of previous term deliveries, number of spontaneous

miscarriages, body mass index, diminished ovarian reserve, endometriosis, hydrosalpinx, polycystic ovarian disease, tubal disease, tubal ligation, male infertility, male infertility causes, unexplained female infertility, uterine fibroids, other causes of female infertility, contraceptive use, number of motile sperm before wash, number of motile sperm after wash, number of total motile sperm after wash, number of total motile sperm before wash, and day 3 follicle stimulating hormone (FSH) level:

(b) validating the prediction model of step (a) against at least one independent data set comprised of a group of female individuals with fertility profiles, wherein the at least four variables of step (a) are represented in at least one of the fertility profiles; and

(c) determining which of the variables of step (a) apply to the female subject and entering those variables into the computer system, wherein the computer system calculates the validated probability of the female subject having a live birth event based upon the at least four variables of step (a).

[0009] These and other objects, advantages, and features of the ~~invention~~present disclosure will become apparent to those persons skilled in the art upon reading the details of the ~~invention~~present disclosure as more fully described below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The invention is best understood from the following detailed description when read in conjunction with the accompanying drawings. It is emphasized that, according to common practice, the various features of the drawings are not to-scale.