Artificial Intelligence in Assisted Reproductive Technology

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Artificial intelligence (AI) has shown great potential in in vitro fertilization (IVF) and has been used in various aspects of reproductive medicine. For example, AI algorithms have been employed to predict embryo quality, optimize embryo selection during IVF, and improve success rates (1, 2).

In embryo selection, AI algorithms can analyze various parameters, such as morphological characteristics and time-lapse imaging data, to predict embryos' viability and developmental potential. This can help embryologists make more informed decisions regarding which embryos to transfer, ultimately improving the chances of a successful pregnancy (3). Moreover, AI algorithms have been leveraged to develop predictive models for estimating the probability of pregnancy outcomes. AI can provide personalized predictions for individual patients undergoing IVF after analyzing a wide range of patient data , including medical history, demographic information, and laboratory parameters. This can aid clinicians and patients in making informed decisions and selecting the most suitable treatment options (4, 5).

AI has also been utilized in sperm selection, helping embryologists in identifying the best sperm with high fertilization potential. By automatically analyzing and classifying sperm characteristics, AI can assist in the selection process and improve fertilization rates (6). It is essential to mention that integrating AI into IVF comes with ethical considerations and regulatory challenges. Ensuring patient privacy, data security, and transparent decision-making are crucial aspects that need to be addressed (7).

In addition, like in other fields of medicine, scientific articles about in vitro fertilization may be produced with AI by the current literature analysis, and proposed texts may be very similar to the manuscripts written by expert authors (8). An AI-powered program (Nova app.) was used while preparing this editorial to give an impressive example. The author edited the content by making minor revisions. Since the suggested references could not be

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verified, they were not used. After an extensive literature review, the author determined the most suitable references, confirming this editorial's content.

In conclusion, using AI in IVF can revolutionize the field by assisting in sperm and oocyte selection, improving embryo selection, and predicting pregnancy outcomes. However, further research and collaboration between reproductive medicine experts and AI specialists are required to validate and refine AI algorithms for clinical use, taking ethical and legal considerations into account.

Conflict of Interests
None.

Ethical Issues
Not applicable.

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