Advances in assisted reproduction have come a long way over the four decades. Introduction of newer gadgets in the IVF lab, newer advanced media, selection tools for best-quality sperms and embryos, witnessing systems, quality control systems, and many more. The reliable prediction of ART outcome still remains to be a significant challenge. Clinicians are not able to correctly predict treatment outcome. Major roadblock in ART is weak concordance between treatment decisions and pregnancy probability estimation. These challenges and roadblocks have necessitated the introduction of artificial intelligence (AI) in the working of our day-to-day practice. So, the question needs to be answered is whether AI can be used to remove the roadblock and help clinician in improving the outcome? We know the limitations of the current practice of IVF. We also know that there are huge data and information available and continuously being generated from all across the globe from IVF cycles. AI algorithms can use these data and knowledge to improve the working of an IVF lab and improve the outcome. The application of AI in IVF can be significant. Current editorial on the role of AI looks into the finer aspects of the use of AI in ART and its limitations. It is nicely written and a very good read. However, we need to remember that AI is in no way to be considered as a replacement for healthcare professionals; but instead, it is to be used as a tool to give more information that can help them to make better decisions. There are also some limitations and concerns. ML (machine learning) models lack transparency, and unfortunately, have a black box nature associated with them. This lack of transparency poses ethical and legal risks. What if the embryo selection suggested by AI algorithm erred and selected a wrong or an aberrant embryo and implanted it, leading to anomalies in the fetus. Another dilemma and ethical challenge to be considered is: should AI be allowed to "select" embryos with better genetic "make-up" or "design" embryos with the "best genes"? There is a need to address the potential ethical, legal, and organizational challenges. It can be concluded that the applications of AI in ART have the potential to bring the next paradigm shift. Despite the current limitations, today AI can address certain clinical challenges that are of prognostic importance and can be used as an auxiliary tool. For better adoption industry-wide, there is a huge need to change the black box nature of AI algorithms into a more transparent process, as in its current state, it lacks interpretability. In future, the applications of AI techniques and their amalgamation in the clinical practice of ART have the potential to improve fertility rate and address the gray areas like implantation. It is, however, important to lay down guidelines, policies, and recommendations for the integration of AI technologies in ART practice in order to ensure ethical practice.

- Adenomyosis is another clinical entity which is complex and associated with poor fertility outcome. Adenomyosis and fertility management is having more questions than answers because of the diagnostic dilemma and paucity of literature and guidelines for managing the infertile patients. Multiple options are available, but all are having limitations. The available information is insufficient for establishing a cause–effect relationship between adenomyosis and infertility.

Another confounding variable is the strong association between adenomyosis and endometriosis. Adenomyosis appeared to have a detrimental impact on IVF/ICSI outcome in terms of a reduction in clinical pregnancy rate and an increase in miscarriage risk, although the potential confounding effect of endometriosis could not be adequately assessed. Conservative surgery and all other modalities have limitations. Combined treatment is much more beneficial than any therapy alone. SURGERY to be offered to selected patients, usually in cases of repeated failures, might be helpful. The decrease in the probability of achieving a viable pregnancy should be discussed with infertile women with a diagnosis of adenomyosis who are considering IVF/ICSI. The current review article might shed some more light on this complex entity and is worth reading.

Original articles on poor responders and use of autologous blood cell-derived growth factors for treating thin endometrium are clinically relevant, as these two conditions are always associated with uncertain outcomes in spite of so many interventions available. Any new research or information must be critically analyzed and used for the benefit of patients.

I am sure this issue will provide enough thought-provoking information to initiate further research in this fast-growing field.

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