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Conference Materials

Advanced decision support tool for IVF

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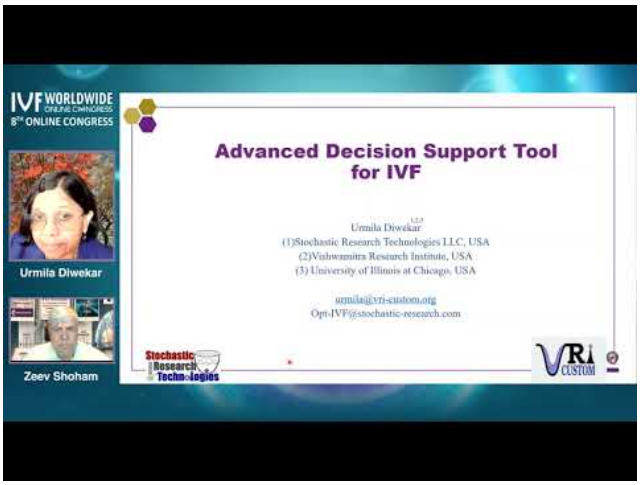

URL: https://www.youtube.com/embed/Ev9RhqLJvUg

In an enlightening video titled "**Advanced decision support tool for IVF**", **Dr. Urmila Diwekar**, the president of Stochastic Research Technologies, unfolds a remarkable advancement in the field of in vitro fertilization (IVF): an innovative decision support tool tailored to enhance IVF outcomes. Drawing from her own experiences as an IVF patient and fueled by the drive to minimize side effects and personalize treatments, Dr. Urmila Diwekar embarks on a journey to revolutionize IVF methodologies.

The narrative begins with exploring Dr. Urmila Diwekar's recently published paper unveiling the state-of-the-art decision support tool for IVF. Rooted in an understanding of superovulation and likening it to the natural crystallization process, the tool embodies sophisticated physics-based models tailored to individual patients based on their unique data. This approach, lauded as novel and groundbreaking, garnered national recognition, setting the stage for further exploration.

As the discussion evolves, the focus shifts toward developing this groundbreaking decision-support tool for IVF treatments. Dr. Urmila Diwekar unravels the intricate integration of mathematical models and optimal control theory to ascertain the ideal FSH dosage, aiming to minimize variations in follicle size and maximize the production of mature follicles. This tool, aptly named OPT-IVF, marks a departure from conventional machine learning approaches in IVF. It determines the initial dosage and continuously adapts and optimizes dosage based on personalized and validated clinical trial data. The potential of OPT-IVF is further underscored as it promises an innovative approach to enhance IVF outcomes.

The journey culminates in a revelation of the tangible benefits that the decision support tool brings to IVF treatments. Through rigorous clinical trials, it is demonstrated that the medication dosage administered to patients can be significantly reduced, showcasing an average reduction of 30%. A groundbreaking aspect is the reduction in ultrasound testing, alleviating the need for patients to be physically present at the hospital so often. The trials manifest high-quality embryos consistently, with statistically significant advantages over the control group. Furthermore, the clinical pregnancy rates for the test group are notably higher, particularly for patients over 35 and those grappling with challenging prognoses and conditions.

The decision support tool's potential is brought to life as the speaker engages in a demonstration, showcasing its personalized dosing recommendations based on patient data. The tool is generously offered for free on a dedicated website, empowering users to register and explore its capabilities with up to 10 patients. This open accessibility ensures that the promise of improved IVF outcomes reaches a broader audience.

In a gracious concluding note, the speaker extends her heartfelt appreciation for the opportunity to present this groundbreaking tool. The invitation to explore the tool, access relevant research papers, and engage further underscores the commitment to advancing IVF practices and positively impacting the lives of countless aspiring parents.

The presentation, encapsulating the essence of scientific innovation and patient-centric progress, leaves a lasting impression. It ignites hope for enhanced IVF outcomes and fosters a brighter future for those embarking on the journey of assisted reproduction.

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