9ᵗʰ Yazd International Congress and Student Award on Reproductive Medicine with 4ᵗʰ Congress of Reproductive Genetics

Key Lectures

K-25

Realtime and multilevel digital monitoring in ART: Are we ready to move IVF to the next level?

Findikli N.
Bahceci Health Group, Fulya IVF Center, Hakki Yeten Cad, 11 Kat 3, Terrace Fulya Istanbul 34365, Istanbul, Turkey.
Email: nfindikli@bahceci.com

Although tremendous improvements have been made in both clinical and laboratory approaches in recent years, current success rates in assisted reproductive technology are far below the expected levels. Among many, the most pronounced reasons include suboptimal diagnosis as well as treatment techniques or models, limits of morphology-based gamete and embryo selection, operator- and infrastructure-dependent variations in culture environment and manipulations as well as patient-specific characteristics that require personalized approaches. Recent studies indicate that electronic or AI-based novel approaches in coping with each limitation/obstacle can potentially show improvements in the outcome per se. However, promising reports usually suffer from either being enforced to fit in a certain isolated patient population or having problems associated with reproducibility in different clinical and laboratory settings. There is no doubt that such approaches will be used in routine applications in the future of assisted reproductive technology. However, overestimating the possible benefits and/or premature use of such approaches/technologies can also carry a risk of creating loss of interest among peers. To minimize such obstacles and upgrade the system for the complete digital transformation, we have developed in our group a customized, multilevel digital security, data management, and process monitoring system that can effectively be integrated and used real-time in different departments (clinical, laboratory, and genetics), simultaneously. Its gradual implementation has resulted in numerous positive and beneficial outcomes while we have also found out several key areas that are needed further improvements, as well as areas that created new risks associated with digitalization. In general, the transition from paper-based to digital data management and tracking platform usually come with certain infrastructural costs and risks that should be individually assessed for each clinic. Besides investing and planning for a dedicated and skillful IT team, management and training of the critical personnel are found to be one of the most important parameters for a successful implementation of such transformation. Furthermore, digital transformation should also be considered as a continuous process. Our customized digital monitoring system has now been effectively communicating and interacting with not only the medical and laboratory departments but also with other departments such as patient relations and accounting. With this opportunity, we are now in the process of developing AI-based applications that can help the key stakeholders (doctors, embryologists, and managers) to decide which is the best for the patient at any given time during his/her treatment. In this talk, together with the authors' personal experiences, current approaches, and status of digital transformation in reproductive medicine will be summarized and discussed.