

# EDITORIAL

Dear Colleagues and Friends,



Through basic research, it is possible to obtain information with important clinical and therapeutic implications.

The application of assisted reproduction techniques has clearly benefited the treatment of infertility, but many aspects that regulate the biology of reproduction remain totally unknown or still little investigated. The most important characteristic of research in modern medicine is precisely its translational nature and its ability to discover molecular mechanisms and scientific approaches that can be used in fields other than those for which they were initially studied. A striking example is the birth, in virology, of mRNA vaccines, whose use has paved the way for applications in the field of oncology.

In the first of the five concise reviews published in this issue of RIVER, *The therapeutic promise of mesenchymal stem cells and their exosomes in treating polycystic ovary syndrome*, Casoli and Bevilacqua explore the therapeutic promise, in polycystic ovary syndrome, of treatments with exosomes and mesenchymal stem cells.

Knowledge of the oviduct and its various districts is the basis of all studies investigating aspects of reproduction ranging from the meeting of gametes to the early stages of preimplantation embryo development, on whose foundations culture media have been formulated to obtain these steps *in vitro*. Belda-Perez and Tatone, *The oviduct: a key to unlocking reproductive science*, take us on a journey that offers possible keys for opening up the world of reproductive sciences.

Reproductive health is also known to be linked to the wellbeing of

the individual and the environment in which they live. Nevertheless, much emerging evidence suggests that even though the human species today enjoys greater quality of life, broadly understood in terms of general well-being (and greater longevity) than in the past, some aspects of progress expose the organism to substances whose effects are anything but physiological. I therefore invite you to read the review by Bianchi and Di Emidio, *Implication of nano and microplastics in reproduction: understanding oocyte vulnerability, who explore the topic of vulnerability* of the female gamete linked to exposure to nano- and microplastics.

Two interesting reviews, by Anastasi *et al.*, *Male fertility preservation in cancer patients*. Reasoned opinion, and Capodanno *et al.*, *Female fertility preservation: why it does not always mean preservation of fertility*, then tell readers about the approaches currently available for fertility preservation in both males and females, also highlighting aspects that, although going beyond the primary indication of preservation, must be considered when addressing the topic of fertility as a whole.

The issue closes with two short but significant case reports. In the first case report, *Lymphocytic hypophysitis associated with ovarian hyperstimulation syndrome during assisted fertilization*, Barbato *et al.* describe the onset of a serious problem and its relative management and resolution during an episode of ovarian hyperstimulation syndrome. In the second case report, *Successful in vitro fertilization pregnancy (IVF) after conservative management of endometrial cancer*, Sorce and Castello describe a case of successful IVF treatment following conservative surgery for endometrial cancer.

All the articles included are stimulating and topical, and I hope you enjoy reading the issue.

Lucia De Santis  
Editor in chief, RIVER Journal