

AN UPDATE ON SOME RECENT PUBLICATIONS MADE BY MILANN CONSULTANTS AND STAFF

Milann Consultants are committed to advancing infertility and reproductive medicine research and treatment. In this regard we bring to you a synopsis of some of the recent publications by Milann in diverse medical journals over the last two years.

Real Life outpatient biomarker use in management of hypertensive pregnancies in third trimester in a low resource setting: ROBUST study Pregnancy Hypertension: International Journal of Women's Cardiovascular Health 23(2021) Page 97-103

Authors: Revathi Soundararajan, Sunitha C Suresh, Ariel Mueller, Sarah Heimberger, Smitha Avula, Chaitra Sathyanarayana, Sunitha Mahesh, Sushma Madhuprakash, Sarosh Rana

This study conducted at Milann, Bengaluru, India evaluates the clinical utility of angiogenic biomarkers, soluble fms-like tyrosine kinase 1 (sFlt1) and placental growth factor (PlGF) among patients at risk for preeclampsia in a low resource outpatient setting and concludes that they may have utility in the low resource outpatient setting for women with a hypertensive disease. Low sFlt1/PlGF levels were associated with a longer latency to delivery and no maternal complications. This study confirms the broad clinical utility of biomarkers in the real world.

Comparing progesterone primed ovulation stimulation and GnRH antagonist protocol in oocyte donors; BJOG: An International Journal of Obstetrics & Gynecology: Category – Reproductive Medicine/Assisted Reproduction 06 June 2021 https://doi.org/10.1111/1471-0528.18_16715

Authors : Khaparde Khurana R; Nayak, C; Pranesh Tumkur, G; Rao, VA; Rao, KA

In this study conducted in the Department of Reproductive Medicine, Milann Fertility Centre, Bangalore, we aimed to compare the cost-effectiveness of Progesterone Primed Ovarian Stimulation (PPOS) over GnRH antagonist cycles in oocyte donor cycles where freeze all is a norm. The study finds PPOS protocol using medroxyprogesterone acetate (MPA) to be more cost effective and patient friendly with similar outcomes in terms of mature oocytes and incidence of OHSS in oocyte donor cycles.

Effects of prematuration culture with a phosphodiesterase-3 inhibitor on oocyte morphology and embryo quality in *in vitro* maturation; Clinical and Experimental Reproductive Medicine. 2021 Dec; 48(4): 352–361

Authors: Mohammed Ashraf Cheruveetil, Prasanna Kumar Shetty, Arya Rajendran, Muhammed Asif, Kamini A Rao

The study assessed the developmental potential of germinal vesicle (GV) oocytes subjected to *in vitro* maturation (IVM) after prematuration culture with cilostamide (a phosphodiesterase - 3 inhibitor) and the impact of cilostamide exposure on the morphology of meiosis II (MII) oocytes and subsequent embryo quality. The study provides insights into the IVM culture system for maturing GV oocytes. The developmental competence of oocytes can be enhanced through an improved understanding of the mechanisms that regulate meiotic competence, arrest, and resumption. Further studies are needed to understand the mechanisms through which meiosis is regulated in human oocytes and how oocyte-derived factors influence zygotic genome activation and embryonic developmental competence in human oocytes.

Impact of Prematuration Culture on Zygote Morphology in In Vitro Maturation: An Early Clue to Embryo Competence; International Journal of Infertility and Fetal Medicine (2022): 10.5005/jp-journals-10016-1251

Authors : Mohammed Ashraf Cheruveetil, Prasanna K Shetty, Kamini A Rao, Mir Jaffar, Arya Rajendran, Muhammed Asif, Sumi Maria

The cornerstone of IVM culture is to provide an appropriate environment for the oocytes to attain developmental competence. It has been suggested that an asynchrony between nuclear and cytoplasmic maturation could explain the reduced ability of the oocyte to support the events during fertilization. The present study using a specific inhibitor cilostamide may be a significant approach in improving the cytoplasmic maturation of immature human oocytes as the results confirm that the polarization of NPBs in both PN with the PN being similar in size and the presence of cytoplasmic halo was better in the experimental group, and therefore the embryo quality and development can be enhanced.

Cytokines, NK Cells and regulatory T cell functions in normal pregnancy and reproductive failures” American Journal of Reproductive Immunology. 2022; e13667 <https://doi.org/10.1111/aji.13667>

Authors: Vyshnavi A. Rao, Noble K Kurien, Kamini A Rao

Immunological responses and interactions in the foetus-maternal interface is crucial in the successful implantation of allogenic foetus resulting in a healthy pregnancy. NK cells, Treg cells and cytokines play a major role in successful implantation which remains an enigma. Comprehending pregnancy-induced immunological changes at the foetus-maternal interface will allow newer therapeutic strategies to improve pregnancy outcomes.