

Since its founding in 1990, research has been an integral part of Milann's mission. The reproductive medicine Consultants at Milann have always believed it was not only important to treat patients but also to investigate the causes of infertility. We at Milann are at the forefront of scientific research. Our researchers are leaders in the field of reproductive medicine transforming the way treatment is delivered. The ultimate aim of infertility research is to improve clinical practice and optimize the chances of people with fertility problems achieving parenthood. There is a wide variety of research performed at all Milann Centres. On the one hand we do research in infertility management and fetal maternal medicine and on the other we undertake clinical trials and epidemiological studies. Fifty five research publications have been conducted and published in national and international peer reviewed journals from Milann; the list of which is given below. The scientific publications emanating from the Institute have been quite steady at about three publications per year most of which are in journals covered by the Science Citation Index.

## **Research Papers Published by Milann**

1. Dr. Kamini A. Rao - Chorion Biopsy a study of 1,168 cases: Indian Journal Obs. & Gyn'88
2. Dr. Kamini A. Rao - "Male and Female Infertility" a series of articles in Physicians Update published in October-November 1991.
3. Dr. Kamini A. Rao - A Report in JAMA, Vol. 11 (2) May '92 - IVF Report - Assisted Conception Centre at Bangalore.
4. Editor of "Recurrent Pregnancy Loss" ECAB Clinical Update: Obstetrics and Gynecology published by Elsevier, Nov - Dec 2008 Vol 1, Issue 6
5. "Right to protection from unsafe abortion and post abortion care" Kamini A. Rao; International Journal of Gynecology and Obstetrics World Report on Women's Health 2009
6. Editor of "Managing Infertility" ECAB Clinical Update: Obstetrics and Gynecology published by Elsevier, 2011
7. SR Raghuvanshi, ST Shashikala, KA Rao. Repeat Transabdominal Laparoscopic Encerclage. Int J Infertility Fetal Med 2011; 2(2):81-84
8. Kamini A. Rao, Muthugadhalli S Srinivas, Anu Kottur, Partha P Majumdar, Pushpa M Bhargava. Social Isolation Following Embryo Transfer Increases Success Rates in IVF and ICSI Cycles. Int J Infertility Fetal Med 2012; 3(1):8-14
9. Sharma R, Rao K, Srinivas MS, Jones T. Is Endometrial Thickness on the Day of ET Really Predictive of IVF Outcome? Int J Infertility Fetal Med 2012; 3(2):40-47
10. Vickram Sundaram, M. S. Srinivas, Kamini A. Rao, M Ramesh Pathy, T B Sridharan (2013) A Comparative Study of Distribution of Protein and Cholesterol in Various Fractions of Human

Semen from Infertile and Fertile Subjects. *Int J Infertility Fetal Med* 2012; 3 (3): 78 -82. (PubMed Citation)

11. Kaur M, Pranesh G, Mittal M, Gahlan A, Deepika K, Shashikala T, Rao KA. Outcome of Laparoscopic Ovarian Drilling in Patients of Clomiphene Resistant Polycystic Ovarian Syndrome in a Tertiary Care Center. *Int J Infertility Fetal Med* 2013; 4(2):39-44
12. Kaur M, Mittal M, Kamath A, Deepika K, Kottur A, Rao KA. Live Birth following Single Embryo Transfer derived from Vitrified Oocyte and Surgically Retrieved Frozen Sperm in a Poor Responder Patient. *Int J Infertility Fetal Med* 2013; 4(2):62-65
13. Vickram Sundaram, Muthugadhalli Srinivas, Jayaraman Gurunathan, Kamini Rao, Ramesh Pathy Maniyan, Sridharan Balasundaram, (2013) Influence of Trace Elements and Their Correlation with Semen Quality in Fertile and Infertile Subjects. *Turk J Med Sci* Vol 43, No 6. pp 1000-1007.
14. Vickram A. S, Raja Das, Srinivas M. S, Kamini Rao, Jayaraman G, and T. B. Sridaran (2013). Prediction of Zn concentration in human seminal plasma of Normospermia samples by Artificial Neural Networks (ANN). *J Assist Reprod Genet* Vol. 30, pp. 453 – 459
15. AS. Vickram, V. Devi Rajeswari, M. Srinivas, G. Jayaraman, R. A. Kamini, M. Ramesh Pathy, S. Ventat Kumar and T. B. Sridharan, 2014. Correlation Studies on Human Seminal Plasma Proteins and Their Relation with Semen Freezability. *Asian Journal of Biochemistry*, Vol 9, pp 41-48.
16. Vohra A, Rao KA. Luteinizing Hormone in Controlled Ovarian Stimulation. *Int J Infertility Fetal Med* 2014; 5(3):75-86
17. Vickram A S, Kamini A Rao, Archana K, Jayaraman G, Venkat Kumar S and Sridharan T.B\* Effects Of Various Semen Extenders On Semen Parameters For The Purpose Of Human Male Fertility Preservation *CryoLetters* 36 (3), 182-186 (2015)
18. Narvekar S A, Vijaykumar P K, Shetty N, Gupta N, Ashwini G B, Rao Kamini A, Unruptured ovarian pregnancy following in-vitro fertilization: Missed diagnosis followed by successful laparoscopic management, *Journal Human Reproduction Sci*, Issue 1, Volume 1, Jan - June 2008
19. Snehal Dhobale, Revathi S Rajan, Kamini A Rao, Hemoperitoneum in Third Trimester of Pregnancy: Unusual Cause-Spontaneous Rupture of Uterine Varices, 10.5005/jp-journals-10016-1084

20. Divya Sardana, Amit Jitendra Upadhyay, K Deepika, Gautham T. Pranesh, Kamini A Rao, Correlation of subendometrial-endometrial blood flow assessment by two-dimensional power Doppler with pregnancy outcome in frozen-thawed embryo transfer cycles. *Journal of Human Reproductive Sciences*, Volume 7, Issue 2, Apr-June 2014
21. Harpreet Kaur, Deepika Krishna, Nivedita Shetty, Sandhya Krishnan, M S Srinivas, Kamini Arvind Rao, A Prospective study of GnRH long agonist versus flexible GnRH antagonist protocol in PCOS: Indian experience. *Journal of Human Reproductive Sciences*. Volume 5. Issue 2. May - Aug 2012.
22. Harpreet Kaur, T. Shashikala, Meednakshi Bharath, Nivedia Shetty, Kamini A. Rao, Ovarian Ectopic Pregnancy Following Assisted Reproductive Techniques: A Rare Entity. *International Journal of Infertility and Fetal Medicine*, Vol.2, No. 1
23. Sandhya Krishnan, Harpreet Kaur, Jyoti Bali, Kamini Rao, Ovarian torsion in infertility management - Missing the diagnosis means losing the ovary: A high price to pay. *Journal of Human Reproductive Sciences*. Volume 4. Issue 1. Jan - Apr 2011.
24. A S. Vickram, G. Jayaraman, M. Srinivas, T. B, Sridharan, Rao Kamini, Biochemical and Correlation studies of Fructose and a-Glucosidase in Human Seminal Plasma with allusion to Semen Quality; Submitted to *Turkish Journal of Biochemistry*
25. A S. Vickram, K. Archana, Rao Kamini, M. Ramesh Pathy, T. B Sridharan, Analysis of fructose and a-glucosidase form various human seminal plasma and their correlation with semen quality and human health; Submitted to *African Health Sciences*, in Galley Proof.
26. Vickram A S, Kamini Rao, Ramesh Pathy M, Chanchal Thomas, Parameswari R and Sridharan T B\*, Effect of semen extender on protein concentration in each fraction of human semen after frozen and thaw, *CryoLetters* 36 (6), 405-412 (2015)
27. A. S. Vickram, A. Rao Kamini, Raja Das, M. Ramesh Pathy, R. Parameswari, K. Archana & T. B. Sridharan (2016) Validation of artificial neural network models for predicting biochemical markers associated with male infertility, *Systems Biology in Reproductive Medicine*, 62:4, 258-265, DOI: 10.1080/19396368.2016.1185654
28. Parmaeswari R, Kamini A Rao, Vickram AS, Sridharan T B. Smoking influence of Trace Elements on semen parameters and sperm DNA integrity in Human Male Infertile and Infertile Smokers. *International Journal of Impotence Research (Nature.com)* (In revision).
29. Revathi S Rajan, Pratibha Malik, Nupur Garg, Smitha Avula, Kamini A Rao Outcomes of Pregnancy in Women with TPO Positive Status after Appropriate Dose Adjustments of Thyroxin: A Prospective Cohort Study. *International Journal of Medical Health, Biomedical, Bioengineering and Pharmaceutical Engineering* Vol: 10, No: 3, 2016 Pages No: 114-117

30. Asifa Majeed, PS Divyashree, Kamini A Rao Clinical Outcomes of Tamoxifen and Clomiphene Citrate in Intrauterine Insemination Cycles. International Journal of Infertility and Fetal Medicine September - December 2015 Issue 3, Pages No: 118-121
31. Nupur Garg, Deepika Krishna, Suvarna Rathor, Kamini A Rao Ovarian Torsion: A Gynecological Emergency Insemination Cycles. International Journal of Infertility and Fetal Medicine September - December 2015 Issue 3, Pages No:136-140
32. Kamini A Rao, P Dahm-Kähler, Mats Brännström Uterus Transplantation: An Update and Preparations for Introduction in India. International Journal of Infertility and Fetal Medicine May - August 2016 Issue 3, Pages No: 61-67
33. Parameswari R, Kamini A Rao, Manigandan P, Vickram AS, Archana K and Sridharan TB: Tea Polyphenol-T. Arjuna Bark as Sperm Antioxidant Extender in Infertile smokers Cryoletters Mar/Apr 2017;38(2):95-99
34. Parameswari R, Kamini A. Rao, K. Mano, M. Aruna, AS Vickram, M. Rameshpathy & TB Sridharan Human sperm DNA damage inhibition and antioxidant activity of T. arjuna bark:an in vitro study 3 Biotech ISSN 2190-572X Volume 7, Number 3, Biotech (2017) 7:1-9 DOI 10.1007/s13205-017-0853 – 29<sup>th</sup> June 2017 Page 2 -9
35. Mir Jaffar, Mohammed Ashraf Does Weight Loss Improve Fertility with respect to Semen Parameters- Results from a Large Cohort Study. International Journal of Infertility and Fetal Medicine January - April 2017 Issue 1, Pages No: 12-17
36. Khushboo Priya, P S Divyashree Restoring Fertility in Cancer Survivors: Ovarian Tissue Cryopreservation or Assisted Reproduction Technique. International Journal of Infertility and Fetal Medicine January - April 2017 Issue 1, Pages No: 24-31
37. Sridharan Balasundaram<sup>1</sup>, Parameswari Ranganathan, Kamini A. Rao, Tea Poly Phenol - Zinc Oxide nano Particle effects on Infertile Smoker's Spermatozoa- A Short Report. Research Journal of Pharmacy and Technology (RJPT) ISSN - 0974-3618 (Print) 0974-360X (Online) – February 2018 Page 1 -4
38. Sridharan T B, Viswapriya V S, Moumita Basak, Parameswari R, Kamini A Rao, A Survey of Biochemical Parameters in Fertile Smokers- A Clinical Study. Research Journal of Pharmacy and Technology (RJPT) ISSN 0974-3618 (Print) 0974-360X (Online) – February 2018 Page 1 - 5

39. Vickram A Sundaram, Kamini A Rao, Archana K, Ramesh Pathy M and Sridharan T B, A Correlative Study of Antioxidants Present in Human Seminal Plasma with Sperm Count. *JSM In Vitro Fertilization* 3(1): 1024 (2018)–February 2018 Page 1 - 6
40. A.S. Vickram □ T. B. Sridharan □ Kamini A. Rao □ Evaluation of fructose and  $\alpha$ -glucosidase activity in human seminal plasma of various infertile and fertile categories for proper diagnosis - Case reports. *Biochemistry and Biophysics Reports* (2018) Page 1 – 4
41. A.S. Vickram, K. Anbarasu, Kamini A. Rao, S. Jayanthi and T.B. Sridharan Identification and in silico Characterization of Semenogelin II Protein in Semen- A Marker for Diagnosis of Male Infertility Bentham Science Publishers *Current Proteomics*, 2018, Vol. 15, No. 4 Page 1-7
42. Divyashree P S, Vyshnavi Rao, Karthigayeni R, Gautham T Pranesh, Mekhala D, S Mummadi, Kamini A Rao. Uterine natural killer cell density as a predictor for implantation success or failure in fertile surrogates and in women with implantation failure. *Fertility and Sterility*, P-47, Volume 110, Issue 4, Published on October 9, 2018.
43. Sridharan TB, Viswapriya V S, Moumita Basak, Parameswari R, Kamini A Rao, A Survey of Biochemical Parameters in Fertile Smokers- A Clinical Study : *Research J. Pharm. and Tech.* 11(2): February 2018
44. Archana Kumar, T.B. Sridharan, and Kamini A. Rao Role of Seminal Plasma Proteins in Effective Zygote Formation- A Success Road to Pregnancy: *Protein & Peptide Letters*, 2019, Vol. 26, No. 4, Page1-13
45. Sridharan Balasundaram<sup>1</sup>, Parameswari Ranganathan, Kamini A Rao Tea Poly Phenol -Zinc Oxide nano Particle effects on Infertile Smoker's Spermatozoa- A Short Report : *Research J. Pharm. and Tech.* 11(2): February 2018
46. Parameswari Ranganathana, Kamini A. Rao, Jesu Jaya Sudan, Sridharan Balasundaram Cadmium effects on sperm morphology and semenogelin with relates to increased ROS in infertile smokers: An in vitro and in silico approach: *Reproductive Biology* 18 (2018) 189–197
47. J. Mir, D. Franken, S.W. Andrabi, M. Ashraf, K. Rao; A Study on "Impact of weight loss on sperm DNA integrity in obese men" *Andrologia* 50 (4), e12957, 2018
48. Ranganathan P, Rao KA, Balasundaram ST. Deterioration of semen quality and sperm-DNA integrity as influenced by cigarette smoking in fertile and infertile human male smokers—A prospective study. *J Cell Biochem.* 2019;120:11784-11793. <https://doi.org/10.1002/jcb.28458>

49. Eswaran, N, Agaram Sundaram V, Rao KA et al. Simple isolation and characterization of seminal plasma extracellular vesicle and its total RNA in an academic lab. *3 Biotech* 8, 139 (2018). <https://doi.org/10.1007/s13205-018-1157-7>
50. Bhagyashree Mallinath Gadwal, Revathi S Rajan, Kamini A Rao Periconceptional association of the triad of hyper homocysteinemia, hypothyroidism and impaired carbohydrate metabolism with recurrent pregnancy loss: *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*; 2021 September;10(9):3549-3553
51. Revathi Soundararajan, Sunitha C Suresh, Ariel Mueller, Sarah Heimberger, Smitha Avula, Chaitra Sathyanarayana, Sunitha Mahesh, Sushma Madhuprakash, Sarosh Rana; 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
52. Khaparde Khurana, R; Nayak, C; Pranesh Tumkur, G; Rao, VA; Rao, KA 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](https://doi.org/10.1111/1471-0528.18_16715)
53. Ashraf C, Gautham Pranesh, Kamini A Rao; A Study on "Effects of pre-maturation 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
54. Vyshnavi A. Rao, Noble K Kurien, Kamini A Rao; "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>
55. Ashraf C, Gautham Pranesh, Kamini A Rao; Impact of pre- maturation culture on zygote morphology in In Vitro Maturation – An early clue to embryo competence. *International Journal of Infertility and Fetal Medicine*. 2022;13(1):5– 14