

**Method :** The study was conducted in the Department of Physiology at S.N.M.C. Agra with the help of computerized microlab spirometer (Model Spirolab/Spirolab – II). The study population were bronchial asthma patients of 20-45 years age group. 80 cases of bronchial asthma practicing pranayama was study population and 20 bronchial asthma patients not practicing pranayama were the control group. The cases were instructed by trained yoga instructor to perform Anuloma-viloma and kapalbharti pranayama regularly for 3 months and then dynamic lung function parameter FEV1, FVC, FEV1/FVC, PEFr was recorded before and after pranayama and observation were studied by applying student t test and evaluated statistically

**Results :** 1. FEV1, FVC, FEV1/FVC, PEFr is similarly improved in both study and control group, on comparing study and control group after 1 month of pranayama. 2. FEV1, FVC, FEV1/FVC, PEFr is improved in study group, not in control group, on comparing study and control group after 2 & 3 month of pranayama.

**Conclusion :** Pranayama has additive beneficial effect along with medication in bronchial asthma patients.

**Abs.CM.01**

### **The Role of Ion Channels in the Maintenance of Bovine Chondrocyte Resting Membrane Potential**

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**Objective :** Studies analyzing the electrophysiological properties of the chondrocyte membrane have implicated  $K^+$ ,  $Cl^-$  as well as non specific cation channels as primary contributors to the chondrocyte resting membrane potential. This study was conducted to identify the specific ionic conductances responsible for the chondrocyte resting membrane potential (RMP).

**Method :** Freshly isolated bovine chondrocytes, from both the metatarsophalangeal joints and metacarpophalangeal joints of legs obtained from the slaughter house were used. Patch clamp experiments were performed in the whole cell patch clamp configuration. The cell was clamped at voltages ranging from  $-80$  mV to  $+70$  mV in  $10$  mV steps. The currents across the membrane were recorded. The Resting Membrane Potential was recorded in the current clamp mode. Tetraethylammonium (TEA)  $10$  mM and Barium chloride  $5$  mM, (both known to block delayed rectifier potassium channels) as well as DIDS  $100$   $\mu$ M (a  $Cl^-$ -channel blocker) were used to identify the currents recorded. The effect of TEA, DIDS and  $Ba^{++}$  on the RMP was also assessed.

**Results :** A high density of voltage gated potassium channels, was seen in bovine chondrocytes. These currents were inhibited by  $10$  mM TEA and completely by  $5$  mM  $Ba^{++}$ . There was no effect seen with DIDS. The resting membrane potential was also depolarized by TEA and by  $Ba^{++}$ .

**Conclusion :** Bovine chondrocytes show a high density of voltage gated potassium channels, the current profile of which is suggestive of delayed rectifiers. The

depolarization caused by blockade of these channels by TEA as well as Ba<sup>++</sup> suggests that this potassium conductance has as significant contribution to the resting membrane potential.

**Abs.CM.02**

### **Voltage Gated Proton Currents In Native Human Monocytes**

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*Objective* : To study the voltage gated proton currents in native human monocytes.

*Method* : Peripheral blood mononuclear cells were separated by density gradient centrifugation using Ficoll-histopaque. Monocytes were separated from the PBMC's using anti CD14 coated magnetic beads by MACS (magnetic activated cell sorting) technique. The monocytes were patched on the day of isolation. Voltage gated proton currents were recorded by whole cell patch clamp technique using a depolarizing protocol. pH of the bath solution was 7.5 and that of the pipette solution was 6.0.

*Results* : Slowly activating outward currents were recorded when the depolarizing pulses were applied to the cell. The currents activated at -20 mV. The mean proton current density in native human monocytes recorded at +60 mV was found to be 113.56±37.6 pA/pF (n=21) which is 6 to 7 fold larger than what has been earlier reported in THP-1 monocytes. The currents reversed at -70 mV which is

close to the calculated  $V_{rev}$  for protons and they were inhibited by 0.5 mM zinc in the bath solution.

*Conclusion* : Voltage gated proton currents were found to be present at a higher density in the native human monocytes when compared to THP-1 monocytes reported earlier.

**Abs.CM.03**

### **Gene Expression Profiling of Autologous Eutopic and Ectopic Endometrium of Fertile Women with Moderate-to-severe Endometriosis**

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*Objective* : Endometriosis affects the reproduction and quality of life in large number of women in their reproductive ages, and medical and surgical intervention often fail to alleviate the symptoms and recurrence. The etiology of endometriosis is multifactorial in nature, and the disease is associated with different levels of lesion severity, and pelvic pain. Although ectopic endometrial tissue differs significantly from that of its eutopic counterpart. Despite extensive hypothesis driven research attempts over the last decade, the etiology and pathogenesis of endometriosis is still unsettled. Genome-wide transcriptomics of autologous eutopic and ectopic endometrium from women with endometriosis bears

promise for novel understanding about the pathophysiology of endometriosis. To explore genome-wide differential expression between autologous eutopic and ectopic endometrium with the effect of severity stages of disease.

*Methodology* : In the present study, autologous samples obtained during proliferative (n=13) and secretory (n=5) phases from proven-fertile women suffering from stages 3 (n=8) and 4 (n=14) ovarian endometrioma were subjected to genome-wide expression arrays.

*Results* : Clustering distance among samples based on expression arrays was seen to be minimum (0.1) between paired samples, while clinical stages of severity (0.5) and phases of menstrual cycle (0.6) had moderate influence. Dysfunctional immuno-neuro-endocrine behaviour in endometrium appeared to be associated with the pathogenesis of endometriosis, and stage 4 eutopic endometrium showed a high degree of pathognomoncity.

*Conclusion* : Though no overt oncogenic potential in the expressional profiles in endometriotic tissue was apparent, several genes associated with gynecological cancers were observed to be highly expressed in eutopic and ectopic tissues.

#### **Abs.CM.04**

### **Dose Dependent Response of Human Chorionic Gonadotropin on Trans-Criptomics of Human Endometrium Cells Three Dimensionally Cultured on Collagen Bio-matrix for 24 Hours : A Systems Biology Approach**

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*Objective* : Blastocyst implantation is a finely regulated process. In eutherian mammals, dialogue between a growing embryo and receptive stage endometrium is important for successful blastocyst implantation. Studies in the rhesus monkey showed that the embryo-derived factors influence endometrial receptivity and implantation in primates. Chorionic gonadotropin (CG) appears to be one of the earliest embryo derived signals secreted could alter the uterine physiology during the window of implantation by its paracrine action. However, there is no consensus about the effector function of CG on implantation stage endometrial cells towards endometrial receptivity and blastocyst implantation. In present study we have first time examined the doses dependent response of human chorionic gonadotropin on the transcriptomics of the three dimensionally cultured endometrial cells.

*Methodology* : Human mid-luteal stage endometrial cells were three-dimensionally cultured on collagen bio-matrix in serum containing medium. At confluence, cells were subjected to serum-free culture with and without recombinant bhCG (rh-bCG). For 24h. Total RNA was extracted from each group and analysed for RNA Integrity Number (RIN), global expressional analysis using 44k human gene chip and Agilent microarray platform were done, data was analysed by GeneSpring 11.5 and Metacore and validated by quantitative real time RT-PCR..

**Results :** In the present study we observed a cohort of genes displayed differential expression in epithelial and stromal cells in the function of different dosages of recombinant rh-bCG treatment.

**Conclusion :** human chorionic gonadotropin can modulate the uterine receptivity during widow of implantation.

#### Abs.CM.05

### Probiotic Effect on Endotoxin Induced Portal Hypertension

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**Objective :** To investigate the efficacy of Probiotic (VSL#3) on Portal Hemodynamics and the Probiotic-induced TLR4 modulation and cytokine response in a previously described rabbit model of Endotoxemia induced portal hypertension (EIPHT).

**Method :** Sixty one rabbits (1.5–2 Kg) were divided into 3 groups of sham and experimental – EIPHT, EIPHT + VSL#3 and EIPHT+norflox. To induce PHT, Lipopolysaccharide (LPS) were injected through an indwelling cannula into the gastrosplenic vein. Endotoxin receptor molecule TLR4/CD14/MD2 and proinflammatory cytokines mRNA expression were detected by RealTime-PCR.

**Results :** Mean portal pressure in the EIPHT experimental group was significantly higher as compared to sham group at 1 month (16.9±1.37 vs 9.6±1.096 mmHg, P<0.05) and

6 month (18.38±1.05 vs 9.79±2.33 mm Hg, P<0.05). There was a significant (P<0.05) reduction in mean portal pressure of EIPHT+VSL#3 group (12.04±1.16 vs. 9.18±1.20 mmHg) as compared to EIPHT group (16.9±1.37 vs. 9.6±1.096 mmHg) at 1 month and same pattern in 6 month. Similarly, the mean PHT in EIPHT+norflox was significantly reduced as compared to EIPHT group. Expressions of TLR4 (0.605±0.41 vs 0.041±0.04) and CD14 (1.148±0.55 vs. 0.004±0.003) in EIPHT experimental was higher than sham group (P<0.05). Significantly (P<0.05) low expressions of TLR4 (0.002±0.003 vs. 0.816±0.122) and CD14 (0.030±0.04 vs. 0.097±0.03) in EIPHT+VSL#3 were seen as compared to EIPHT. But expressions of TLR4 and CD14 in EIPHT+norflox group were not significant. In EIPHT+VSL#3 the expressions of TNF- $\alpha$  and TGF- $\beta$  decreases as compared to EIPHT but not significant.

**Conclusion :** The expression of TLR4/CD14 and proinflammatory cytokine in EIPHT was significantly increased; this may be due to raised portal pressure. Reduced portal pressure by Probiotic could possibly be regulating the TLR4/CD14 pathway and consequently lowering the level of cytokine expression.

#### Abs.CV.01

### Relationship Between Blood Pressure and Arterial Stiffness in Patients Undergoing Antihypertensive Treatment

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**Objective :** The aim of this pilot study was to