

2199th Conference

Cellular Therapies & Pain Medicine 2018



Annual Congress on

Cellular Therapies, Cancer, Stem Cells and Bio Medical Engineering
&

5th International Conference on **Pain Medicine and Pain Management**

October 17-18, 2018 | New York, USA

Scientific Tracks & Abstracts

Day 1

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Examine the effect of intra- articular injection of Bone Marrow Mesenchymal Stem Cells (BM-MSCs) and Chondrogenic Differentiated Mesenchymal Stem Cells (CD- MSCs) on the repair of articular cartilage defects in rabbits

Heba Arakeep

Tanta University, Egypt

The present study was performed to examine the effect of intraarticular injection of bone Marrow Mesenchymal Stem Cells (BM-MSCs) and Chondrogenic Differentiated Mesenchymal Stem Cells (CD- MSCs) on the repair of articular cartilage defects in rabbits. Twenty-five adult female Baladi rabbits were used in this work. 5 rabbits were used for the preparation of Bone Marrow Mesenchymal Stem Cells (BM-MSCs) and their left knees were not subjected to the surgical procedure and used as normal control group. The remaining twenty rabbits were subjected for surgically induced cartilage defects in their left knees through a small medial para-patellar incision using bone curette. In the next day, the rabbits were divided into four groups: group I who were not injected intra-articularly, group II injected intra-articularly by a single dose of saline, group III injected intra-articularly by a single dose of BM-MSCs and group IV injected intra-articularly by a single dose of CD-MSCs. After 8 weeks from the time of intra-articular injection. On time the rabbits were sacrificed and the entire knee joints were excised and examined. Groups I and II showed marked degenerative changes in their articular cartilage. The articular surface healed by fibrocartilage in group III, while in group IV the articular surface healed by hyaline cartilage. Treatment by CD-MSCs promotes a better healing effect on the articular cartilage defects of injured knee joints in rabbit's model and has a remarkable superiority of repair than BM-MSCs. This can prevent the progress of cartilage defect into osteoarthritis which was a harmful disease.

Biography

Heba Arakeep is an Assistant Professor of anatomy and embryology, faculty of medicine, Tanta University, Egypt. She has a rich experience in different research methods (light microscope, electron microscope, histological stains, immunohistochemical stains, morphometric study by image analyzer). She has accredited certification in stem cell researches and techniques & more.

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Potential of Thai silk fibroin-based hydrogel in bone regeneration

Sorada Kanokpanont, Jirun Apinun and Somsak Kuptniratsaikul
Chulalongkorn University, Thailand

Thai Silk Fibroin (SF), a natural beta-sheet structure protein, were extracted using a sterile condition using local silkworm strain in Thailand. Physico-chemical properties of the solution were well studied from the previous works. SF protein is biocompatible and has exceptional mechanical properties and delayed biodegradability compared to other proteins. Gelation of the SF solution can be induced physically or chemically in a controllable manner. Example of a potential application of the Thai SF hydrogel demonstrated from the *in vitro* biocompatibility and osteogenic potential of encapsulated rat bone marrow-derived Mesenchymal Stem Cells (rat MSCs) will be discussed. The injectable Thai SF/collagen hydrogel was induced using medical surfactants, oleic acid-poloxamer 188 mixture. Three groups of hydrogels 1) 4 %wt silk fibroin(SF), 2) 4 %wt silk fibroin with 0.05% collagen (SF/0.05C), and 3) 4% wt silk fibroin with 0.1% collagen (SF/0.1C), were tested. *In vitro* growth, kinetic kinetics parameters and differentiation were evaluated at 6 weeks of cell culture in the hydrogels. The results showed cellular viability and proliferation in all types of hydrogels. Although SF/0.1C hydrogel exhibited the lowest availability at initial seeding it had the highest cell's specific growth rate. During osteogenic stimulation, cellular proliferation and differentiation in Thai silk fibroin hydrogel were evaluated. The results confirmed the positive effect of collagen combined in the hydrogel on proliferation and matrix formation, however, benefits on osteogenic differentiation and biomineralization were unclear. Some early results in animals will be presented.

Biography

Sorada Kanokpanont received a PhD, in Chemical Engineering (specialized in Biochemical Engineering) from Drexel University, USA. She is currently a faculty member at the Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University. She is also a chair of Nano-bioengineering program at the International School of Engineering and a board committee of the Thai Biomedical Engineering Research Society, Thailand. She has more than 15 year-experiences in Biomaterial research and application in Tissue engineering and drug delivery systems. She received numerous research awards in Thailand and two silver medals in Geneva Invention awards in Tissue engineering products. She granted a membership of Newton fund – Leader in Innovation Fellows, The Royal Academy of Engineering, UK, a scholarship from the MIT enterprise forum, and a start-up TED funding for an innovative product from 2017-2018. Her international grants from 2008 – 2020 were the Thailand-Japan technology transfer project (TJTTP), the EU sponsored Erasmus Mundus, Erasmus Plus, and the Marie Skłodowska-Curie Actions, Research and Innovation Staff Exchanges 2017. She published more than 55 international research articles in biomaterials and held 9 Thailand's patents (some are pending).

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Validity and reliability of the Arabic version of the ID pain screening questionnaire in the assessment of neuropathic pain

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Introduction: Diagnosis of Neuropathic Pain (NP) can be challenging. The ID Pain (ID-P) questionnaire, a screening tool for NP, has been translated into several languages and is widely used. However, ID-P validation process has not been done in the Arab population. The ID-P tool appears to accurately indicate the presence of a neuropathic component of pain. This simple tool, which can be self-administered, could be of immense use in primary care settings. Thus, the aim of this study was to develop an Arabic version of ID-P and assess its validity and reliability in detecting neuropathic pain.

Methods: The original ID-P was translated in Arabic language and administered to the study population. The adaptation procedure was monitored by a seven-member expert panel including two specialists in pain management, an expert in methodology, an expert in clinical research, and an expert in linguistics. Patients were divided into two groups. The first group included patients diagnosed with NP by a pain specialist in pain clinics as per the guidelines established by the IASP, whereas the second study group included patients with Nociceptive Pain (NocP). The Arabic version of the ID-Pain was administered twice to the study population, by the same investigator. Reliability of the Arabic version was evaluated by percentage observed agreement, and Cohen's Kappa; and validity by sensitivity, specificity, correctly classified, and Receiver Operating Characteristic (ROC) curve. Physician diagnosis was considered as the gold standard for comparing the diagnostic accuracy.

Results: The study included 375 adult patients (153 [40.8%] with NP; 222 [59.2%] with nociceptive pain). Overall observed percentage agreement and Cohen's kappas were >90% and >0.80, respectively. Median (range) score of the ID-P scale was 3 (2±4) and 1 (0±2) in the NP group and NocP group, respectively ($p < 0.001$). The area under the ROC curve was 0.808 (95% CI, 0.764±0.851). For the cut-off value of ≥ 2 , sensitivity was 84.3%, specificity was 66.7%, and correct classification was 73.9%. Thus, the Arabic version of ID-P showed moderate reliability and validity as a pain assessment tool.

Conclusions: This article presents the psychometric properties of the Arabic version of ID Pain questionnaire. This Arabic version may serve as a simple yet important screening tool, and help in appropriate management of neuropathic pain, specifically in primary care centers.

Biography

Amani Abu-Shaheen is a senior clinical researcher with extensive experience in the healthcare sector. She earned her Master's in Public Health/Epidemiology in 2007 from the Jordan University of Science & Technology. Since 2009 she joined King Fahad Medical City Research Center where she worked with researchers on writing and editing of different manuscripts and proposals, reviewing journals, abstracts, and scientific literature. Her research interest focuses on pain management and clinical trials as well.

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Nature the best cure: Analgesic activity of bioactive fractions of *Eryngium caeruleum* M.Bieb

Najjad Ali Khan

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Problem Statement: Chronic pain is affecting more than diabetes, cancer and cardiac complications combined. Available analgesics are iatrogenic and have numerous adverse effects. Current prime options available for eradicating pain include addictive Opiates and toxic NSAIDs. Moreover, depending on conditions and age, the range of prescribing analgesics is further narrowed. Over the decades the new mechanistic of developing analgesics is less focused. This strategy for alternative analgesics will overcome the limitations found in analgesics. The development of harmless, effective and novel analgesics is a tough and highly desired task.

Aim and Objective: To evaluate analgesic potential and mechanistic of analgesia of bioactive fractions of *Eryngium caeruleum* in animal models.

Methodology: The analgesic potential and the Opioid antagonism of the bioactive fraction of *Eryngium caeruleum* were determined in animal models using chemical and thermal nociception.

Results: The crude extract and various bioactive fractions of *Eryngium caeruleum* exhibited significant analgesic activity and nonselective opioid antagonism ($p < 0.05-0.001$) at a dose level of 5, 25 and 50mg/kg body weight in mice.

Conclusion: Remarkable analgesic activity is been possessed by various biofraction of *Eryngium caeruleum* both centrally and peripherally. The bioactive fractions were found to have more remarked activity than the marketed drugs like aspirin and gold standard morphine. An urgent effort is needed to further explore and conserve the precious species of plants which are becoming extinct due to lack of measures.

Biography

Najjad Ali Khan is an MPhil scholar and has his expertise in doing research in collaboration with other scientists for the discovery of safe and effective drugs in natural sources. He has discovered an analgesic far better than marketed drugs. His work is needed to be showcased for promoting scientist and locals of the country. He is recently contributing with locals of hilly areas of Khyber Pukhtoonthwa Pakistan for visualizing the pharmacological effects of medicinal plants and providing scientific foundations for the claims made. This goal is purely organized for seeking the interest of community like other developed countries and pharmaceutical developers to incorporate the use of herbs for better health outcomes.

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A call for understanding and greater access to balanced

Teneshia Spencer

Pinnacle Medical Center, USA

Multimodal analgesia offers a patient-specific, balanced approach to treating acute pain, such as that caused by broken bones, surgery, and childbirth. The approach combines two or more pain-relieving treatments or techniques – acting through different mechanisms – to provide better pain relief using fewer opioids. With multimodal analgesia, a patient may receive some combination of IV acetaminophen (in hospital settings), antidepressants, steroids, nerve blocks, epidurals or prescription-strength forms of anti-inflammatory drugs. The approach can also include local injections of analgesia.

Integrated Care for Chronic Pain: Similarly, patients who experience chronic pain – such as low back pain, migraine headache or fibromyalgia – can also benefit from a comprehensive approach to pain management. According to studies “Opioids can be effective,” “but they are hardly the only treatment strategy that should be considered.” Physical therapy and rehabilitation, as well as psychosocial treatments to address the emotional and social effects of pain, can complement the use of medication – including over-the-counter, prescription non-opioid and opioid treatments.

Access Barriers & Policy Solutions: Balanced pain management can help clinicians move away from a one-size-fits-all approach to pain management, which sometimes favors an opioid-only approach despite patients’ unique needs. One driver behind that approach may be health insurance and hospital formularies that favor low-cost treatments such as generic opioids. Another cause, the paper argues, is health coverage that steers patients toward the lowest-cost treatment through techniques such as step therapy. Despite the upfront expense, a balanced approach can lower care costs over the long term by better managing pain and reducing opioid-related adverse events. With updated formularies, improved insurance coverage and more education, patients and their healthcare providers can achieve better pain management. The approach can also aid national efforts to curb the opioid abuse epidemic.

Safe Use & Disposal: Finally, no conversation about pain management is complete without discussing the safe use and disposal of pain medications. This white oral report acknowledges the importance of safe prescribing, comprehensive labeling, and safeguards such as medicine cabinet inventories, safe storage and responsible disposal of unused drugs.

Biography

Teneshia Spencer is a serial entrepreneur and currently serves as the Chief Executive Officer, Owner, and founder for the following businesses: Pinnacle Primary Care & Wellness Center dba Pinnacle Medical Center, We Care Restorative Foundation, Eastern Urgent Care & Infusion Center & Hot Box Dispensary. He has completed her second master’s at the age of 26 years from the University of Denver and currently working towards her JD/MPH in Law & Medicine at Boston University School of Law. He currently owns and operates as the director of her private practice medical facility Pinnacle Primary Care & Wellness, a premier primary care & wellness center. This will be her first speaking engagement as well as serving as an editorial board member of repute.

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Certain aspects of yoga practices in the management of chronic pain

A Pallavi and N Vijay Mohan
Andhra University, India

Over the years the chronic pain has found a steady place in the famed category of chronic diseases worldwide. Chronic pain is multi-dimensional: At the physical level itself, beyond the nociceptive pathway, there is hyperarousal state of the components of the nervous system, which negatively influences tension component of the muscles, patterns of breathing, energy levels and mindset, all of which exacerbate the distress and affect the quality of life of the individual and family. Beginning with the physical body, Yoga eventually influences all aspects of the person: Vital, mental, emotional, intellectual and spiritual. It offers various levels and approaches to relax, energize, remodel and strengthen body and psyche. The asanas and pranayama harmonize the physiological system and initiate a “relaxation response” in the neuroendocrinal system. This consists of decreased metabolism, quieter breathing, stable blood pressure, reduced muscle tension, lower heart rate, and slow brain wave pattern. As the neural discharge pattern gets modulated, hyperarousal of the nervous system and the static load on postural muscle come down. The function of viscera improves with the sense of relaxation and sleep gets deeper and sustained; fatigue diminishes. Several subtle level notional corrections can happen in case the subject meditates and that changes the context of the disease, pain and the meaning of life. Meditation and pranayama, along with relaxing asanas, can help individuals deal with the emotional aspects of chronic pain, reduce anxiety and depression effectively and improve the quality of life perceived.

Biography

A Pallavi, is working as Asst. Prof. in Physical; Education in Department of Physical Education and Sports Sciences, Andhra University, India. She did her M.Phil. from Annamalai University and Ph.D in Physical Education from Andhra University. She also holds MBA Sports Management, M.Sc. Yoga and M.Sc. Yoga Therapy from Tamilnadu Sports University. She participated and presented research papers in various National and International Seminars and Conferences. Her research papers related to Yoga and Physical Education were published in various journals. She was the recipient of several national awards like Bharat Jyothi Award, Mother Teresa Excellence Award and The Best Citizens of India Award.

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Pain treatment therapy

Raja Tounsi

Gravity G-Tunis, Tunisia

Objective: This study was to evaluate a new theory of the human body relativity specifically on human body wellness which is the extension of Einstein's hypothesis. The aim of my research is to lead us to an efficient resolution for pain treatment, where the transaction between the three body energies 'flow is affected; I will specify the main cause of the effects and the therapy resolution.

Methods: Therapy applicable with a bioproduct based on the body relativity. The human body encompasses three functional energies: 1) Energy A: it's the body's belt protection the tissues composing this protective veil are manipulated by the blood velocity which proceeds to the digital functioning of the respiratory rhythm. 2) Energy B: this energy is the passage to the level of the lymphatic system; it promotes the creation and the multiplication of the different agents composing the lymph which is the main element of the body magnetism and 3) Energy C: it allows the multiplication of the cells main element of the nutrition of the bones, it also causes a pressure that allows the creation of the law of gravity of the body. It is an energy self-defense of the body against the negative radiation of the atmosphere.

Results: From 1990, I started improving the therapy and I had very good results with patients suffering from severe pain.

Conclusion: Summarizing, relativity leads us to study in an innovative way the human body Energetic circuit. I found that Gravity G-therapy based on relativity efficient.

Biography

Raja Tounsi, born on the first of February 1962, grown up in a Military Family. She made her career in aeronautics as a Cabin crew with Saudi Arabian Airlines Based in Paris. She is author of "Syndrome de Gravit " and innovator of "Gravity Gel" and basically a trainer in Massage therapy in the field of the "Thalassotherapie".

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Pectoral nerve block1 versus modified pectoral nerve block2 for postoperative pain relief in patients undergoing modified radical mastectomy: A randomized clinical trial

Shreya Goswami, P Kundra, and J Bhattacharyya
Vivekananda Institute of Medical Sciences, India

Background: Pectoral nerve block1 (PEC1) given between pectoralis major and minor, and modified pectoral nerve block2 (mPEC2) performed between pectoralis minor and serratus anterior, can provide continuous analgesia after Modified Radical Mastectomy (MRM) when catheters are placed before skin closure. This study was designed to compare PEC1 and mPEC2 block for providing postoperative pain relief after MRM.

Methods: Sixty-two physically fit patients undergoing MRM were assigned into two groups (Group PEC1, n¼31 and Group mPEC2, n¼31). Before wound closure, the epidural catheter was placed in the group designated muscle plane and 30ml of 0.25% bupivacaine was injected through the catheter after wound closure. Bupivacaine 15ml of 0.25% top up was given on patient's demand or whenever visual analog scale (VAS) score was >4. Time for the First Analgesia (TFA), number of top-ups and VAS was recorded at 0.5, 6, 12, 18, 24h after surgery. Sensory blockade was assessed 30min after extubation.

Results: Analgesia was significantly prolonged in group mPEC2 [mean(SD)] 313.45(43.05) vs 258.87(34.71)min in group PEC1, P<0.001. Total pain experienced over 24h was significantly less in group mPEC2 [mean(SD)] 9.77(6.93) than in group PEC1 24.19(10.81), P<0.0001. Consequently, top up requirements were significantly reduced in group mPEC2 than in group PEC1 [median(range)] 3(2-4) vs 4(3-5) respectively, P<0.001. Lateral pectoral (77.42% and 35.48%) and thoracodorsal nerves (93.55% and 48.39%) had a higher incidence of sensory block in group mPEC2 than group PEC1, P<0.001.

Conclusions: mPEC2 provides better postoperative analgesia than PEC1 when catheters are placed under direct vision after MRM.

Biography

Shreya Goswami completed her Medical School from Institute of Post Graduate Medical Education & Research in 2010. She completed her Residency in Anesthesia and Critical Care from Vivekananda Institute of Medical Sciences in the year 2017. During her tenure as a resident, she received a Gold medal for best paper from the state of West Bengal in Sarojini Devi Memorial Paper Presentation, ISAJAC, 2015. She also represented her state at the national level in the prestigious Dr TN Jha Memorial Paper Presentation and received Dr KP Chansoria travel grant in ISACON, Jaipur, India, 2015. As a resident, her work on PECs block was published in the British Journal of Anesthesia. A part of the study was presented in the World Congress of Anesthesia in Hong Kong 2016 and the abstract was published in Anesthesia & Analgesia. She is currently a Senior Resident in Vivekananda Institute of Medical Sciences, Kolkata, India..

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ABC transporters mediated multidrug resistance in prostate cancer cells

Toluleke Famuyiwa, Joubin Jebelli, Elizabeth Ramirez, Allen Reilly, Christopher Pecille and Kumi-Diaka
Florida Atlantic University, USA

Background: Prostate cancer is the second most diagnosed cancer. This study focuses on overcoming ATP Binding Cassette (ABC)-mediated drug resistance in prostate cancer treatment.

The objective of study: This study aims to (i) investigate the interaction between 3-BPA and SC-514, (ii) reduce treatment-induced ABC-mediated Multidrug Resistance (MDR), and (iii) investigate the signaling pathways involved in ABC transporter-mediated MDR.

Method: We utilized Poly Lactic-co-Glycolic Acid (PLGA) nanoparticles as a co-delivery system for SC-514 and 3-Bromopyruvate (3-BPA) in LNCaP cells. The impact of varying concentrations of these drugs on LNCaP cells was studied. Bioassays used included Trypan Blue, MTT, and NBT. Fluorescence microscopy was performed.

Results: A One-way ANOVA was conducted to compare 3-BPA, SC-514, and the combination of 3-BPA and SC-514 after 24 hours of treatment. The result shows that the p-value = 0.00023. Regression analysis of the results from the time-dependent experiments was performed. The regression analysis showed the following p-values: 24hrs (0.00023), 48hrs (0.00003), 72hrs (0.00000152), 96hrs (0.00000049). ROS levels of LNCaP cells treated with 3-BPA ($r = -0.5$), SC-514 ($r = -0.72$) and 3-BPA + SC-514 ($r = -0.58$) were compared using one-way ANOVA. The result showed no significant difference in ROS modulation ($p = 0.54$).

Conclusion: There is a weak to moderate correlation between ROS levels and cell death. Additionally, there was a positive correlation between the drug concentrations and cell death.

Biography

Toluleke Famuyiwa is the CEO of Solution Illuminators LLC and a John Maxwell Certified Coach, Trainer, and Speaker. He is certified as a competent communicator by Toastmasters International. He is mentoring undergraduate students in the USA and Nigeria. He does mastermind workshops, seminars, keynote speaking, and coaching. He holds a Master of Science Degree in Biology. He is currently a PhD student in Integrative Biology at Florida Atlantic University. He is an Adjunct Instructor at Broward College. He is a member of the following professional association: American Association for the Advancement of Science (AAAS); Health, Wellness & Society Research Network; American Society for Biochemistry and Molecular Biology (ASMB); Society for Integrative and Comparative Biology (SCIB); American Society of Clinical Oncology (ASCO); American Society for Pharmacology and Experimental Therapeutics (ASPET). He held numerous leadership positions; President of National Animal Science Students Association (NASSA) as an Undergraduate in Nigeria; C-BAC chairperson at Broward House of Representative, FAU; Assistant Director of Graduate and Professional Students' Association (GPSA). He is a recipient of outstanding student volunteer of the year; M- DOT award; Idiculla John Broward Student Employee Impact Award; numerous fellowships at FAU.

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Multicellular sphere model for hematopoietic stem cells microenvironment study

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Background: Hematopoietic Stem Cells (HSC) proliferation, differentiation, self-renewal, and survival are regulated by specific characteristics of their microenvironment. Bone Marrow (BM), HSC's niche, is composed of different cell populations that by their signaling and interactions regulate HSC. Attempts to recreate this complex microenvironment have been devised in various studies using diverse co-culture models with different types of cell populations. Nevertheless, it has never been reported a co-culture system that uses simultaneously three BM cell populations in vitro that allows the study of the regulation of HSC in a closer way to it is *in vivo* microenvironment. The objective of this study is to propose a 3D magnetic levitation culture, free of exogenous structures and substances, in which HSC are co-cultured with Mesenchymal Stem Cells (MSC) and Endothelial Cells (EC), where a Multicellular Spheroid (MS) is formed, providing an organoid model to be analyzed.

Methods: For the confirmation of the MS, MSC were isolated from human BM, HSC from human umbilical cord blood and EC line Lonza CC.2811 was used. System standardization was accomplished by size and shape spheres evaluation, the percentage of cell aggregation, viability assay, and HSC CFU-assay, followed by immunohistochemical and immunofluorescent analysis of histological sections.

Results: Nanoparticles density was established at 1uL /10.000 cells. The optimum ratio for the culture of the three cell populations was 1 MSC: 2 HSC: 2 EC. MS was completely formed at day 10 on culture, accomplishing a sphericity >0.8 and an aggregation percentage of 70-90% on day 5. The HSC isolated from the MS preserve their multipotent function.

Discussion: The MS obtained with this methodology are very suitable in evaluating proliferation, differentiation, clonogenic potential and other aspects of HSC when in contact with other BM cell populations, thus allowing for further studies to evaluate how HSC and its niche respond to different treatments, drugs and stress caused by infections, myelosuppression, neoplasms and aging, among other factors, so that future therapies for hematological diseases can be developed.

Biography

Emilia Barreto-Duran is a last year M.Sc. student, with passion and interest for regenerative medicine research. She is actually working with stem cells, with the special interest in mesenchymal and hematopoietic stem cells. She has focused her research on the effect of the microenvironment (bone marrow cell populations and oxygenation) on the proliferation, self-renewal, and differentiation of hematopoietic stem cells.

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Chronic inflammation and mucus hyper secretion are the factors responsible for various respiratory diseases including throat and lung cancers: Prevention and management through exercise interventions

Manikonda Prakash Rao
Osmania University, India

Background: The objective of the paper is to create awareness among people about alternative and complementary methods to protect themselves from various respiratory diseases including Throat and Lung cancers. The diseases cause the following changes in Airways.

Inflammation: Acute inflammation is a defense process whereas chronic inflammation is a disease process.

Hypersecretion of mucus: Is the result of goblet cell hyperplasia in respiratory mucosa and is a prominent feature of inflammation. They go together. Chronic mucus hypersecretion is a potential risk factor for an accelerated loss of lung function. The thick viscous mucus in the lungs will be conducive to pathogens. Currently, available medicines and methods are not able to meet the needs of the sufferers. Continued inflammation and mucus hypersecretion may significantly contribute to a transformation of normal cells into cancer cells i.e. the scope for series of mutations on Genes may get increased.

Bronchospasm: Is an additional factor in asthma patients.

Methods: Exercise is a potent medication in history. It can be used as a tool to manage various respiratory diseases including throat and lung cancers.

Cleaning Upper airway: Passages, mouth, nose, and pharynx, the primary sites of colonization of pathogens and the sinuses, the way stations to the brain. These exercises should be practiced with hypertonic solution i.e., a solution having greater osmotic pressure than that of cells or body fluids and draws water out of cells thus inducing plasmolysis.

Physical, aerobic and yogic exercises: Help in strengthening the Inspiratory and Expiratory muscles.

Conclusions: Any mucus related respiratory health problem commences from upper airway passages and spread to the tracheobronchial tree as they constitute only one pathway. The mucociliary clearance mechanism becomes defunct when excess and sticky mucus forms. Once the upper airway passages are cleaned off it, the defunct cilia become active and ciliate mucus towards the mouth and it can be pushed out easily. The upper airway passages and the bronchial airways get cleaned from excess and sticky mucus. The diseases originating from its pathway come under control. The exercises are based on the concept "Once the offending factor, excess mucus is removed, the origin of it, Inflammation gets resolved" as a result of management of the above two factors, the gene-damaging effect may get reduced i.e., the scope for series of mutations on genes may get reduced.

Biography

Manikonda Prakash Rao, a self-made Healthcare specialist, excellence in Mucus related respiratory Health, Hyderabad, Telangana has completed his Master's Degree, International Law, and Legal Studies, and was a Gold Medalist in International law and Constitutional law. He presented papers at various international Medical conferences. So far he participated in about 20 conferences including All India Institute of Medical Sciences, New Delhi for Geriatric conferences, WAO of US for conferences in immunology and allergy etc. He was also made the Chairperson at Multidisciplinary healthcare conferences organized by All India Institute of Medical Sciences, New Delhi in the year 2014 and 2016. Recently he presented papers at Indo global health summit and expo at Hyderabad and other summits on Throat and Lung cancers – prevention and Management through exercise interventions.

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Ozone Therapy: A powerful cancer treating protocol

Nilay Pankaj Shah

Positive Medical Services, India

Ozone Therapy is a revolution in modern medicine where most of the diseases including cases like Cancer, Hepatitis, HIV are managed and patients are satisfied with normal and disease free life. Ozone therapy refers to the process of administering ozone gas into your body to treat a disease or wound. Ozone is a colorless gas made up of three atoms of oxygen (O₃). It can be used to treat medical conditions by stimulating the immune system. It can also be used to disinfect and treat disease.

Mechanism of Action: It has been suggested that perceived therapeutic effects of Ozone therapy works by 'controlled and moderate' oxidative stress produced by ozone reacting with several biological components. In severe oxidative stress nuclear transcriptional factor kappa B is activated which causes an inflammatory response and tissue injury, while in moderate stress another factor, nuclear factor-erythroid 2-related factor 2, is activated which induces the transcription of antioxidant response elements. These cause the production of numerous antioxidative enzymes which together with free antioxidants protect cells from oxidation and inflammation and may also reverse the chronic oxidative stress. As cancer cells thrive in anerobic environment. Supposed mechanism of action of ozone therapy is based on idea that increasing the oxygen levels in the vicinity of cancer cells, will adversely affect them and potentially cause apoptosis.

Treatment Protocol: Various modes of administration of this therapy are by Ear, Rectum, Vagina and Blood. Depending on type of disease and severity, the mode of administration is decided. The method of administration that has been specifically related to cancer is ozone autohaemotherapy. This technique involves blood being withdrawn from the patient's vein and treated with ozone before reinfusion or injection into a vein or muscle. Guidelines on the use of ozone in medicine recommend that concentrations of 80 µg ozone per ml whole blood and above are not used as there is an increased risk of haemolysis. These guidelines suggest concentrations between 10 and 40 µg, in exceptional cases up to 60 µg ozone per ml whole blood are used. Total doses are given as 500 µg – 1000 µg 2 x per week for 10 treatments, possibly repeated several times per year.

Biography

Nilay Pankaj Shah has completed his BHMS in 2004 and MD in the year 2005 at the age of 24 years from Calcutta University. He has under went various courses in alternative therapy like Ozone Therpay, Chelation Therapy, Acupuncture etc. and has been attendee and speaker in medical conferences. He has got certified by Ozone Forum of India. He has also been member and certified by American Academy of Ozone Therapy. He is the propriter of Positive Medical Services, a primary Alternative Therapy Service organization. He has published more than 15 papers in reputed journals.

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Testing the validity and reliability of the Arabic version of the pain detect questionnaire in the assessment of neuropathic pain

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Introduction: Neuropathic Pain (NP) can cause substantial suffering and, therefore, it must be diagnosed and treated promptly. Diagnosis of NP can be difficult and if made by an expert pain physician is considered the gold standard, however, where expert help may not be easily available, screening tools for NP can be used. The painDETECT questionnaire (PD-Q) is a simple screening tool and has been widely used in several languages. We developed an Arabic version of PD-Q and tested its validity and reliability.

Methods: The original PD-Q was translated into the Arabic language by a team of experts. The translated version of the PD-Q was administered to the study population, which included patients having moderate to severe pain for at least three months. Reliability of the Arabic version was evaluated by an Intra-Class-Correlation Coefficient (ICC) between pre- and post-measures and Cronbach's α values. Validity was measured by Receiver Operating Characteristic (ROC) curve. Expert pain physician diagnosis was considered as the gold standard for comparing the diagnostic accuracy.

Results: A total of 375 patients were included in the study, of which 153 (40.8%) patients were diagnosed with NP and 222 [59.2%] patients had nociceptive pain (NocP). The ICC between pre and post-PD-Q scale total scores for the overall sample, NP group, and NocP group was 0.970 (95% CI, 0.964±0.976), 0.963 (95% CI, 0.949±0.973), and 0.962 (95% CI, 0.951±0.971), respectively. The Cronbach's α values for the post-assessment measures in the overall sample, NP group, and nociceptive pain group were 0.764, 0.684, and 0.746, respectively. The area under the ROC curve was 0.775 (95% CI, 0.725±0.825) for the PDQ

Conclusion: In summary, we developed the Arabic version of the PD-Q and tested its psychometric properties. The Arabic version of PD-Q demonstrated good reliability and validity. A large-scale study in the Arabic population is required to confirm the results of this study further and further affirm the validity and reliability of the Arabic version of the PD-Q.

Biography

Amani Abu-Shaheen is a senior clinical researcher with extensive experience in the healthcare sector. She earned her Master's in Public Health/Epidemiology in 2007 from the Jordan University of Science & Technology. Since 2009 she joined King Fahad Medical City Research Center where she worked with researchers on writing and editing of different manuscripts and proposals, reviewing journals, abstracts, and scientific literature. Her research interest focuses on pain management and clinical trials as well.

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Investigation of the anti-nociceptive potential of *Cassia fistula* in rodent animal models

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Background: Nature is highly enriched in therapeutic agents and scientist screens it continuously for better therapeutic agents. Plant isolated components, currently, used in broad spectrum therapeutics to treat a variety of diseases. Pain is one of the most common symptoms associated with many of illnesses and the treatments, at present time, available are opioids and NSAIDs. Medicines in the clinic are efficient, however, allied to severe complications and toxicities.

Objective: Need for more safe and potent analgesic motivates a scientist to work on the nociceptive targets. This study we have tested the effect of *Cassia fistula* in rodent for its analgesic potential.

Materials and Methods: Extraction was performed using a simple extraction method. The yielded methanolic extract was then subjected to various analgesic tests such as acetic acid-induced writhing, tail flick and tail immersion in mice or rats. Phytochemical analysis was performed for the presence of various chemical constituents in the MeCF. Phytochemical examination confirmed the presence of responsible components in the plant encourage us to hypothesize it as anti-nociceptive.

Results: Pain induced models based in vivo testing assured approximately 12% and 22% better responses than standard diclofenac and tramadol, respectively. In the acetic acid-induced writhing, tail flick and tail immersion tests MeCF at 125, 250 and 500mg/kg significantly exhibited analgesic activity. The results were comparable to standard analgesic drugs i.e. diclofenac sodium (10mg/kg) and tramadol (12.5mg/kg).

Conclusion: The present finding suggests that MeCF possess effective phytochemical that is mainly responsible for its analgesic action. Further evaluation of the mechanism of action is required to precisely explore its activity at molecular.

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Mandibular nerve block guided by CT in patients with trigeminal neuralgia

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Tanta University, Egypt

Background: Trigeminal Neuralgia (TN) is a well-known facial pain syndrome characterized by excruciating paroxysmal shock pain attacks located in the somatosensory distribution of the trigeminal nerve. Mandibular affection is a common presentation of TN.

Objectives: Injection of mandibular nerve with neurolytic solutions in trigeminal neuralgia that was unresponsive to pharmacotherapy.

Determination of patients and Method: This prospective study included 21 patients treated for mandibular neuralgia by percutaneous injection of absolute alcohol under the guidance of CT image. Their ages ranged from 18-60 years and male to female was 3:4; All patients suffered from moderate to severe TN and did not respond to medical treatment. Entry and trajectory of the needle were planned by CT and after local anesthesia. Alcohol was injected at the exit of mandibular nerve from foramen ovale.

Results: 85.7% of patients improved: 71.4% became pain-free, who became 61.9% after two years of follow up.

Conclusion: CT guided mandibular nerve block by the neurolytic agent as absolute alcohol and showing its effectiveness as the minimally invasive treatment option for intractable trigeminal neuralgia. CT guidance provided a clear view to secure the safety, accuracy, and selectivity of nerve block.

Biography

Heba Arakeep is an Assistant Professor of anatomy and embryology, faculty of medicine, Tanta University, Egypt. She has a rich experience in different research methods (light microscope, electron microscope, histological stains, immunehisto-chemical stains, morphometric study by image analyzer). She has accredited certification in stem cell researches and techniques & more.

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A quantitative study on usage and effect of the thrombolytic agent in myocardial infarction patients at the tertiary care hospital

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Purpose: The thrombolytic agent is one of the treatment ways of managing diseases such as acute myocardial infarction, stroke, and heart attack. While the acute Myocardial Infarction (MI) is a major cause of morbidity and mortality among the Indian population, this study is performed to (1) determine the possible factors associated with effect of thrombolytic drug on Myocardial Infarction (MI), (2) compare the practical pattern and effectiveness of thrombolytic agents in MI patients, (3) identify the ADR associated with the thrombolytic agent post-treatment, (4) determine the overall effectiveness of the thrombolytic treatment with respect to morbidity and mortality, and (5) evaluate the thrombolytic therapy with standard guideline.

Methods: It is a quantitative study conducted in Bangalore Baptist Hospital for six months among 200 inpatients diagnosed with MI and received thrombolytic agent. The admitted cases were selected for the study on the effect of the thrombolytic agent in MI patients. Moreover, the cases' charts were reviewed for potential drug interactions; the drugs involved in interactions (dose, route, frequency, therapy duration, and indication), the laboratory investigations, the followed up, the drug-related problems of the thrombolytic agent and the pharmacist's intervention were the source of study. Alternately, the prescription audit as an important component of clinical pharmacy was applied to evaluate the status of prescriptions in order to optimize the medication use, minimize the number of medication-related problems, and improve the medication therapy. Further, the literature reviews and the clinical pharmacist's intervention were applied in this study. The comparison between the treatment procedure and guideline was done for better understanding of the link between the ADRs, morbidity and mortality ratios. The severities of the drug interactions were assessed and categorized as major (can cause permanent damage or life risk), moderate (can cause harm, and treatment are required) or minor (can cause small or no clinical effect, with no treatment required). As an ethical consideration, the patients' records were stored confidentially, and for further analysis, the Excel was used. The findings were categorized based on the pharmacodynamics mechanism.

Results: The study showed the maximum number of the patient between ages 41 to 60 were receiving thrombolytic medication, with a diagnosis of AMI. 46% of cases had streptokinase injection, 75% of patients had dysrhythmia, and 25% had bleeding. Common dysrhythmia was 78.2% premature ventricular contraction. 46% of patients had slow ventricular tachycardia, 16% had a premature atrial contraction, and 4% had other arrhythmias. The means were CPK 604, LDH 565.4, CKMB 58.2, and CTNI 8.7. In auditing the prescription errors, 30.4% contains inappropriate abbreviation, 28.4% prescription contains drugs without generic name, 13.7% prescription not legible, 7.8% variation in dose, 6.9% frequency not mentioned, 5.9% rout not mentioned, 2.9% without signature or name of physician, 2% not in capital letter, and 2% mislabeling. There was no pharmacokinetic interaction in which synergism 81.75% and antagonism 18.6% type of interaction. During treatment, 25% of men died due to intracranial bleeding, and 34% female died due to GI bleeding. The patients with previous myocardial infarction had a higher long-term mortality rate with streptokinase (34.9 versus 21.5% with placebo, $p=0.03$). At six months, there were significantly more cases of reinfection in the streptokinase group (7.2 versus 4.5%, $p=0.02$).

Conclusions: The outcome showed that the majority of thrombolytic was prescribing to a male patient. It was concluded that Alteplase and Reteplase were highly prescribed the thrombolytic drug and the majority of a patient receiving thrombolytic have stayed more than eight days in the hospital. It was found that majority of prescription include no generic name with inappropriate abbreviations. On the other hand, there was a very high incidence of interaction between thrombolytic and other drugs and the most drugs interacting with thrombolytic were Aspirin, Heparin, and Enoxaparin. Also, the chance of morbidity during treatment was high while mortality was low.

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Femoral block in the management of pain after surgery of the lower extremity

Nuru Ahmed

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Statement of the Problem: Pain is considered a fifth vital sign and most patients don't get appropriate pain management. Pain can be managed through different mechanisms using WHO pain ladder postoperative patients need a combination of drugs to manage their pain. Patients in the immediate postoperative periods need appropriate management of their pain because the pain has an adverse effect on the outcome of the surgery. Pain can cause an increase in blood pressure makes patients tachycardic. It has also an effect on the ventilation of the patient that could result in atelectasis and chest infection it limits the patient's ability to ambulate leading to stasis and related complications like deep venous thrombosis using WHO pain ladder patients can be managed their pain using single analgesics depending on the type of surgery or patients perceived level of pain. If the single analgesics doesn't work, one can proceed to a combination of drugs using NSAIDs and opioid analgesics. Some patients have a low threshold of pain for the level of their surgery. one can use the objective pain scoring system to assess the level of pain a patient is experiencing and act accordingly. If the combination of NSAIDs and opioids doesn't work or insufficient to control the pain other types of drugs that can be given regionally either using spinal or epidural catheter can be used. The epidural can be continuous or patient monitored, where the patients by themselves administer the drug when they have the pain in some cancer patients who are terminally ill and have severe pain there are surgical and medical techniques that can be used as a palliative care. It ranges from chemical neurolysis to neurectomy where one can sever the nerves responsible for the patient's pain. In the immediate postoperative periods, pain management should be given adequate consideration as this is the critical time to decrease vomiting, high blood pressure, tachycardia, retention of urine, abdominal distention and decrease patients level of frustration thereby increasing patients satisfaction. There are different regional blocks that can be applied to avert pain in the immediate postop period. Cervical block for neck surgery particularly thyroid surgery femoral block for lower extremity surgery are a few examples. Here we will discuss our experience with femoral nerve block for the lower extremity surgeries.

Biography

Nuru Ahmed is a graduate of Jimma University. He graduated from Jimma in 2012 and work as a general practitioner in Bahirdar University. After one year of service, he started his general surgery residency programmed in the same university and became a general surgeon in 2017. He is now practicing general surgery in Dangila hospital which is an affiliate hospital of Bahirdar University..

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Interventions for treating Osteoarthritis in the temporomandibular joint Addis Ababa Ethiopia

Robera Chala Abeebe

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The Temporomandibular Joint (TMJ) or jaw joint is located in front of the ear on either side of the face. However, it is the only joint that the dentists and maxillofacial surgeons predominantly have to deal with. As with many of the other joints, the TMJ can be affected by Osteoarthritis (OA). This is characterized by progressive destruction of the internal surfaces of the joint which can result in debilitating pain and joint noises. Several disorders other than OA may affect the TMJ and the correct diagnosis is important such that it can be matched with appropriate therapy. A range of therapeutic options is available for TMJ OA, which include non-surgical modalities such as control of contributory factors, occlusal appliances, cold or warm packs applied to the joint, pharmacological interventions as well as physiotherapy. Surgical treatment options include intra-articular injections, arthrocentesis (lavage of the joint) as well as attempts at repair or replacement of portions of the TMJ. This review found weak evidence indicating that intra-articular injections of sodium hyaluronate (a natural constituent of cartilage) and betamethasone (an anti-inflammatory steroid) had equivalent effectiveness in reducing pain and discomfort. Occlusal appliances, when compared with diclofenac sodium (a non-steroid anti-inflammatory drug), showed a similar pain reduction, as did a comparison between the food supplement glucosamine and ibuprofen (a non-steroid anti-inflammatory). Future studies should aim to provide reliable information about which therapeutic modality is likely to be more effective for the reduction of pain and other symptoms (e.g. joint sounds) of TMJ OA. Moreover, because the limited evidence available only covers a restricted number of interventions, comparisons with other therapeutic modalities should be encouraged. One of the authors' concerns was the large number of trials which included mixed groups of participants diagnosed with TMJ OA, in addition to other disorders of the TMJ, which could not be considered in this review.

Biography

Robera Chala Abeebe had studied Doctor of Dental Medicine (DMD) at Jimma University from one of the best higher University and pioneer for Dental doctor Medicine in Ethiopia by passing very high competition to enter the Dental School. He was graduated in 2011 from Jimma University by DMD degree. He applied at Myung sung Christian medical center to one of the best Medical centers in Africa for my further training to upgrade myself in more skillful and advanced way. The first two years by regular and practical training, He has taken these training by Clinical General Dentistry which includes Endodontic & Operative, Prosthodontic, Periodontal therapy & Minor oral surgery given to me by south Korean Dentists from 2012 up to 2014. Soon he finished his first training there; he has started soon Orthodontic Specialty training for two years. He is also an instructor teaching dental and oral health for a medical student at Myung sung Medical College. He has received the assistance Professor rank at this college which seen by a special committee of the college. Currently, he was working at Royal Specialized dental center one of the best dental centers in Ethiopia.

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Intra-articular injection of adipose-derived stem cells in the treatment of knee Osteoarthritis: A prospective case series study

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Background: Osteoarthritis is a degenerative disease of synovial joints that causes progressive loss of articular cartilage presenting by pain, stiffness and greatly affected quality of life and activity of daily living. The definitive treatment modality is to regenerate damaged articular cartilage. The aim of this study is to evaluate the effect of intra-articular injection of Adipose-Derived Stem cells (ADSCs) on the functional status of the osteoarthritic knee joint in terms of diminishing pain, improving quality of life and returning to previous activities.

Subjects and Methods: 20 patients have recruited 8 males, 12 females, age range: 33-63 with a mean of 48.9y.

▷ **Inclusion Criteria:**

- Healthy patients with no major co-morbidities
- Kellgren and Lawrence grade I to III.
- VAS >3 for at least 4 months
- Limited or no response for conservative treatment

▷ **Exclusion Criteria:**

- Kellgren and Lawrence Grade: IV Late Stage Osteoarthritis
- Intra-articular injection for treatment within 2 months prior to this enrollment.
- Rheumatoid or inflammatory cartilage disease
- Crystalline disease (gout or pseudogout)
- Joint Infections

▷ **Patients assessment:**

- Full Knee examination
- AP Weight bearing X-ray K&L Grade
- WOMAC arthritis knee score
- VAS- Pain
- Knee ROM

Informed consent Intervention: Lipoaspiration was performed, Adipose-Derived Mesenchymal Stem Cells (ADSC) were isolated from the stromal vascular fraction. One intra-articular injection of ADSCs was injected in patients with mild to moderate knee osteoarthritis.

Results:

1. The VAS score showed improvement from an average of 4.80 (pre-injection) to 1.60 (post-injection) with 32% Improvement.
2. WOMAC Pain score showed improvement from an average of 61.9 (pre-injection) to 83.8 (post-injection) with avg. 22% improvement.
3. WOMAC symptoms: The symptoms showed improvement from an average of 66.06 (pre-injection) to 86.43 (post-injection) with an average of 20.37 %
4. WOMAC- activities of daily living showed improvement from an average of 76.16 (pre-injection) to 88.67 post-injection with avg. 18% improvement
5. Knee range of motion ROM was measured using a goniometer before and after the injection and showed improvement from an average of 137.5° (pre-injection) to 145.4° (post-injection) with average 7.9° improvement

Conclusions: This study reached its predetermined primary outcomes, intra-articular injection of ADMSCs into osteoarthritic knee was not associated with apparent adverse events, but an improved function of the knee measured with WOMAC over 6 months of follow-up

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