

Dr Ramesh Bhonde Ph.D. Director (Research), DPU

Stem Cells in Drug Development: A New Frontier

Stem cells are revolutionizing drug development, with <u>India already offering seven stem</u> <u>cell-based drug products</u>. Beyond this, stem cells play key roles in drug discovery and drug delivery.

1. Stem Cells in Drug Discovery

Stem cells can be cultured into organoids—miniature organs like micro-livers or kidneys providing a more accurate model for drug testing, reducing the need for animal testing. Using a patient's own induced pluripotent stem cells (iPSCs) to create personalized organoids enables more tailored treatments, improving drug efficacy and safety.

2. Stem Cells for Drug Delivery

Stem cells naturally "home" to specific tissues, making them ideal carriers for targeted drug delivery. This property is particularly useful in cancer therapy, where stem cells can deliver drugs directly to tumors, minimizing harm to healthy tissue.

3. Stem Cells as Therapeutics

Stem cells themselves are being used as treatments, with seven stem cell-based drugs available in India, reflecting major advancements in regenerative medicine.

The Role of Dr. Ramesh Bhonde

Dr. Ramesh Bhonde, a leading figure in stem cell research, has driven much of this progress, training many researchers and contributing to both basic and clinical science. His work has been crucial in the development and availability of stem cell therapies in India, pushing the boundaries of regenerative medicine.

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Mr Manohar м.е. CEO, Stempeutics

Stempeutics: Pioneering Stem Cell Therapy in India

Under the leadership of CEO Mr. Manohar, Stempeutics has developed six stem cell-based products for treating patients with conditions such as osteoarthritis, diabetic ulcers, and Buerger's disease. These ready-to-use stem cell injections are available in bottles or bags and are also used for hair and skin regeneration in aesthetic treatments.

With two decades of research, Stempeutics has built a largescale manufacturing facility capable of producing billions of stem cells, supplying orthopedic, vascular, plastic, and diabetic specialists across India. The company is expanding into Asian markets, including the Philippines, Vietnam, and Japan, following MoUs. Additionally, clinical trials for three more diseases are underway at AIIMS Delhi and other centers. Stempeutics, through Mr. Manohar's leadership, positions India at the forefront of stem cell therapy.













Dr Secunda Anand MD

Asst. Prof., Dept. of Regen. Medicine Govt. Stanely Medical College

Pioneering Stem Cell Therapy for Liver Disease at Stanley Medical College

Dr. Secunda, one of the foremost experts in stem cell therapy and a pioneering researcher, has been appointed as the inaugural Head of the Department of Regenerative Medicine at the prestigious Stanley Medical College, Tamil Nadu. Her appointment marks a significant step forward for stem cell research in India, particularly in the development of treatments for liver diseases. With over two decades of experience in the field, Dr. Secunda's work focuses on introducing a disease-modifying treatment for acute and chronic liver conditions through stem cell therapy, a groundbreaking approach that could change the landscape of liver disease management.

Currently, liver transplantation is the only definitive treatment for patients with end-stage chronic liver diseases. However, the scarcity of liver donors results in a long waiting list, and many patients succumb to the disease while awaiting transplantation. To address this critical issue, Stanley Medical College has developed a state-of-the-art stem cell research facility, fully equipped with the necessary regulatory approvals for conducting stem cell-based therapies. The lab is dedicated to advancing alternative treatments for chronic liver disease, potentially reducing the need for liver transplants.

The research team at Stanley has already achieved success in preclinical studies, including in vitro experiments and animal trials, demonstrating the potential of stem cell therapy for liver regeneration. Following these promising results, the team has received approval from India's Drug Controller General to conduct human clinical trials aimed at using stem cells to treat both acute and chronic liver diseases. If successful, this therapy could offer patients a new, less invasive treatment option with the potential to regenerate damaged liver tissue and slow the progression of liver disease.

In addition to the focus on liver regeneration, the Department of Surgical Gastroenterology, under which the stem cell lab is housed, is also conducting research on improving the gut microbiome. This research involves using fermented rice, a traditional dietary practice, to enhance gut health—a complementary approach that may offer additional benefits in patients with liver disease and other gastrointestinal disorders.

Dr. Secunda's efforts in establishing and leading this program place Stanley Medical College at the forefront of regenerative medicine in India. Her team's innovative work holds the promise of reducing the reliance on liver transplants and introducing a new era of stem cell-based therapies for chronic conditions.

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Prof. Dr M Rajkumar MCh Rtd. HOD, Vascular Surgery Madras Medical College, Chennai

Advancing Stem Cell Therapy for **Critical Limb Ischemia**

Prof. Dr Rajkumar, a senior vascular surgeon and former Head of the Department of Vascular Surgery at Madras Medical College, Chennai, Tamil Nadu, has made significant contributions to the field of stem cell therapy, particularly for patients with critical limb ischemia (CLI) who face the threat of limb amputation due to diabetes and other ischemia-related conditions. His pioneering work in both autologous and allogenic stem cell therapy has provided new hope for patients with no other treatment options.

Dr. Rajkumar has extensively researched and clinically applied autologous stem cell therapy, where stem cells are harvested from a patient's own bone marrow. The stem cells are then processed using specialized sterile equipment, to isolate the stem cells, which are subsequently injected into the ischemic limb. This procedure promotes the regeneration of blood vessels and healing of ulcers, effectively preventing amputation. Over the course of his career, Dr. Rajkumar has performed over 100 successful autologous stem cell therapies in government hospitals, saving hundreds of patients from amputation.

In addition to his work with autologous stem cells, Dr. Rajkumar played a key role in advancing allogenic stem cell therapy for critical limb ischemia. He served as the principal investigator for a clinical trial on allogenic bone marrow-derived stem cells, conducted in collaboration with Stempeutics, a leading biotech company. This trial focused on the use of allogenic stem cells, sourced from donors, to treat diabetic ulcers and Buerger's disease. The trial ultimately led to Indian government Drug Controller approval for allogenic stem cell therapy, offering a second treatment option for patients at risk of amputation.

Today, due to Dr. Rajkumar's groundbreaking research and clinical work, patients in India with diabetic ulcers and critical limb ischemia have access to both autologous and allogenic stem cell therapies. His contributions have not only provided life-saving alternatives for patients facing amputation but have also established India as a leader in stem cell-based treatments for vascular diseases.

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Dr Gurumoorthy MD GV Speciality Hospital, Trichy

Palliative Care Management in Pain Medicine

Dr. Gurumoorthy focuses on interventional pain management and palliative care, employing advanced techniques such as Platelet-Rich Plasma (PRP) therapy for various pain conditions. His expertise includes:

- Low Back Pain: Using PRP to treat degenerative disc disease and facet joint syndrome.
- Trigeminal Neuralgia: PRP as part of a minimally invasive approach to manage facial nerve pain.
- Chronic Pancreatitis: Alleviating the persistent pain associated with this condition through interventional methods.
- Neck and Back Pain: PRP injections to address musculoskeletal pain, often combined with other interventional techniques.
- Arthritis: Treating joint inflammation and degeneration with PRP to promote healing and pain relief.
- Cancer Pain: Providing palliative care for terminal cancer patients, focusing on reducing pain and improving quality of life.

His center integrates minimally invasive interventional pain procedures with a regenerative medical approach, focusing on natural healing processes and improving patient outcomes.















18-19th Sep 2024 Prof. Dr Deen Muhammad Ismail MS President, TNOA

Advances in Orthobiologics and Regenerative Medicine: A Focus

Professor Dr Deen Muhammad Ismail, the president of the Tamil Nadu Orthopaedic Association and former Head of the Department at Madras Medical College, has been instrumental in advancing the field of orthopedics, particularly in the realm of regenerative medicine and orthobiologics. Throughout his illustrious career, Dr. Ismail has not only treated thousands of patients with acute and chronic musculoskeletal conditions but has also played a pivotal role in training the next generation of orthopedic specialists.

Dr. Ismail's research is particularly focused on exploring new treatment modalities for incurable conditions such as spinal cord injuries. Despite the lack of a definitive regenerative treatment for spinal cord injuries in humans, Dr. Ismail's work has contributed significantly to ongoing research and clinical trials aimed at finding solutions. His leadership in conducting workshops and lectures on orthobiologics—biological substances that promote healing—has positioned him as a key figure in this evolving field.

The success of stem cell therapy in animal models, such as the work conducted by the Chennai Madras University Veterinary College, which demonstrated the regeneration of spinal cord injuries in animals, provides hope for future human applications. Similarly, the University of California, Davis, has achieved promising results in treating spina bifida in children, preventing neurological deficits through early intervention with regenerative treatments. These advancements underscore the potential of regenerative medicine to alter the landscape of previously untreatable conditions.

In recognition of his contributions, Dr. Ismail is set to present a Lifetime Achievement Award to Mr. Manohar, CEO of Stempeutics, for pioneering India's first allogeneic bone marrow-derived mesenchymal stromal stem cells for the treatment of osteoarthritis. This development represents a significant breakthrough in regenerative treatments for musculoskeletal diseases, particularly osteoarthritis, which remains a debilitating condition for many.

Dr. Ismail's enduring commitment to the field of regenerative medicine continues to inspire innovation, driving research and clinical trials that may one day unlock new possibilities for patients suffering from otherwise untreatable conditions.















18-19th Sep 2024 Dr V Muthukrishnan MS Aravind Eye Hospital, Madurai

Platelet Rich Plasma in Retinal Diseases

Dr. V. Muthu Krishnan's research explores innovative approaches in the treatment of large macular holes, focusing on the use of Platelet-Rich Plasma (PRP) compared to the more traditional inverted internal limiting membrane (ILM) flap technique. Large macular holes are challenging to manage and may result in significant visual impairment if not treated effectively. In this comparison:

- PRP offers a regenerative, biologically active solution by using concentrated platelets from the patient's blood, which contain growth factors that facilitate tissue repair.
- The inverted ILM flap involves folding a layer of the internal limiting membrane over the macular hole to promote healing.
- **Key Findings:**
 - Efficacy: PRP is found to be as safe and effective as the inverted ILM flap in promoting the closure of large macular holes.
 - Safety: None of the patients treated with PRP experienced postoperative exaggerated inflammatory reactions, highlighting its safety as a treatment option.
 - Visual Outcomes: Both techniques demonstrate positive visual recovery, although PRP offers the advantage of using the body's natural healing mechanisms.

Role of PRP in Retinal Diseases:

PRP has emerged as a promising treatment in various retinal diseases due to its ability to promote cellular repair and reduce inflammation. Some key applications include:

- 1. Macular Holes: PRP aids in closing large macular holes by promoting tissue regeneration.
- 2. Diabetic Retinopathy: PRP is explored for its potential to repair damaged retinal blood vessels and reduce inflammation.
- 3. Retinal Detachment: It may be used as an adjunct in complex retinal detachment surgeries to enhance healing.
- 4. Age-Related Macular Degeneration (AMD): Though still under research, PRP could play a role in regenerating damaged retinal tissues in AMD.

Dr. Krishnan's work underscores the potential of PRP as a minimally invasive, biologically favorable treatment option for large macular holes and other retinal diseases, offering a new avenue in vitreoretinal surgery.

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Still REGENERATIL











18-19th Sep 2024 **Prof. Dr Bishnu Prasad Patro MS** AIIMS, Bhubaneswar, Orissa

ORTHOBIOLOGICS in Chronic Orthopedics like AVN

Dr. Bishnu Prasad Patro's research largely focuses on the therapeutic potential of stem cells, particularly in regenerative medicine and orthopedics. He has extensively explored the use of mesenchymal stromal stem cells (MSCs) derived from bone marrow, which have significant applications in healing musculoskeletal injuries, including conditions like osteoarthritis. His work on stem cell-based therapies, such as MSC transplants, has contributed to advancements in clinical treatments for chronic orthopedic conditions that otherwise have limited treatment options.

His contributions include clinical evaluations of autologous MSCs in treating advanced osteoarthritis and degenerative diseases, examining their role in modulating inflammation, promoting tissue regeneration, and enhancing repair processes in damaged tissues. Additionally, his research addresses the challenges of applying stem cell therapies, including optimizing cell culturing techniques and ensuring the long-term viability of stem cells for clinical use.

Dr. Patro has also participated in preclinical studies exploring the molecular and cellular mechanisms of stem cell function, investigating their potential not just in orthopedics but also in treating neurological conditions such as spinal cord injuries.

A recent retrospective study evaluated the efficacy of combining core decompression with AALCO implantation (using OSSGROW®) with idiopathic AVN of the femoral head (grades I to III), who had failed conservative treatments. A two-stage procedure was performed under spinal anesthesia, aiming to promote osteogenesis in necrotic bone tissue.The study showed statistically significant improvements in both pain levels and hip function. He has also demonstrated that the growing potential of orthobiologic therapies in treating AVN and supports continued exploration of regenerative medicine in orthopedic applications.

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18-19th Sep 2024 **Prof. Dr Sandeep Shrivastava MS Executive Director . DMIHER, Wardha**

Advancing Regenerative Medicine: The STARS PROTOCOL

Professor Dr. Sandeep Shrivastavais a pioneering orthopedic surgeon and an esteemed administrator at Datta Maghe Medical University. He is renowned for developing the innovative 'STARS PROTOCOL,' a patented approach that leverages Platelet-Rich Plasma (PRP) therapy for the treatment of large, non-healing ulcers. The protocol is designed to deliver PRP at specific time intervals and precisely target areas of the wound, enhancing tissue regeneration and promoting faster healing.

With over a decade of research into orthobiologics, Dr. Shrivastava has explored the therapeutic applications of PRP not only in musculoskeletal disorders but also in dermatological conditions. His contributions have made significant advancements in regenerative medicine. He has mentored numerous postgraduate and PhD students, fostering a new generation of researchers and clinicians who continue his legacy in diverse specialties.

His research team has also achieved a breakthrough by creating PRP in a lyophilized (freeze-dried) form, which enhances its storage and utility, making it more accessible for clinical use. Under Dr. Shrivastava's leadership, Datta Maghe Medical University has formed strategic partnerships with prestigious institutions such as the Mayo Clinic, paving the way for cutting-edge research collaborations.

Driven by a vision to equip his students for the evolving medical landscape, Dr. Shrivastava emphasizes the integration of artificial intelligence, tissue engineering, and other advanced technologies in healthcare education. His efforts are set to elevate the global reputation of Datta Maghe Medical University, making it a hub for innovative medical education and research.















18-19th Sep 2024 Dr. Nayana Patel MD Director of Akanksha Hospital and Research Institute

Innovative Approaches in Reproductive Health

Dr. Nayana Patel's work in regenerative medicine focuses on applying stem cell therapy to infertility treatments. At Akanksha Hospital, she has integrated innovative approaches like autologous stem cells to enhance fertility outcomes, particularly for those with conditions resistant to traditional IVF methods. Her research explores the role of regenerative medicine in improving reproductive health, showing promise for conditions like uterine scarring or poor ovarian reserve. Dr. Patel's work continues to pioneer the intersection of stem cell technology and reproductive medicine.

Akanksha Hospital and Research Institute is a leading infertility clinic in India, known for its state-of-the-art facilities and experienced team. The hospital offers a wide range of infertility treatments, including IVF, ICSI, surrogacy, and stem cell therapy. Dr. Nayans's research and clinical practice have focused on innovative approaches to infertility treatment, including stem cell therapy. Stem cells are undifferentiated cells that have the potential to develop into various cell types.

They have shown promising results in treating infertility by:

- Improving ovarian function: Stem cell therapy can help rejuvenate aging ovaries and improve their ability to produce eggs.
- Treating uterine factor infertility: Stem cells can help repair the uterine lining and improve its receptivity to embryos.
- Treating male infertility: Stem cell therapy can help improve sperm quality and quantity in men with infertility.

Dr. Patel and her team have conducted extensive research on stem cell therapy for infertility and have published their findings in peer-reviewed journals. They have also presented their work at national and international conferences.

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Dr. Madhan Jeyaraman MS, PhD Dr MGR Educational and Research Institute Additional Director, ACS - Advanced Medical Research Institute, Chennai

Stromal Vascular Fraction in OA Knee (SAHAJ Protocol)

Dr. Madhan Jeyaraman, has made significant strides in the field of regenerative medicine and orthobiologics. His extensive expertise in this domain spans both research and clinical applications, particularly focusing on regenerative therapies such as stem cell treatments and platelet-rich plasma (PRP) therapies. Dr. Jeyaraman's interest in orthobiologics began during his postgraduate training, and he has since dedicated his career to advancing this field. He is an active member of several regenerative medicine associations both in India and internationally. His role as a contributor and editor in prestigious journals highlights his influence and thought leadership in the field. His research and clinical work have made a notable impact, with his publications being cited by leading experts in regenerative medicine worldwide.

Expertise and Contributions

- Stem Cell Therapy: Dr. Jeyaraman uses adipose-derived stem cells, prepared with FDAapproved kits, for various orthopedic conditions. His methods ensure safe and effective clinical applications.
- Platelet-Rich Plasma (PRP): He explores different PRP formulations to enhance healing and pain relief in musculoskeletal issues.
- Scaffolds: His research also includes the use of scaffolds to support tissue repair and regeneration alongside stem cells and PRP.

Dr. Jeyaraman's contributions to regenerative medicine and orthobiologics have the potential to transform orthopedic practice. His work supports the development of more effective and less invasive treatments, which could improve patient outcomes and accelerate recovery times. As the field of regenerative medicine continues to evolve, Dr. Jeyaraman's research will likely play a critical role in shaping future therapeutic strategies.















Dr Muralidharan MS, MCh **Urologist, Bright Hospital Madurai**

Regenerative Approaches in UROLOGY

Dr. Muralidharan, a prominent urologist based in Madurai, specializes in integrating regenerative medicine with traditional urological treatments. His work focuses on utilizing advanced regenerative techniques to enhance the management of various urological conditions. He employs regenerative medicine approaches such as Platelet-Rich Plasma (PRP) therapy and stem cell treatments to address urological issues. These techniques aim to promote tissue repair and regeneration, potentially improving outcomes for patients with chronic urological conditions.

His work involves treating conditions like erectile dysfunction, urinary incontinence, and chronic prostatitis using regenerative medicine. By leveraging the healing properties of PRP and stem cells, he seeks to restore function and alleviate symptoms more effectively than traditional methods alone.

Dr. Muralidharan is involved in research to refine and optimize regenerative treatments for urological applications. His studies often focus on the effectiveness of these therapies in improving patient outcomes and minimizing side effects compared to conventional treatments.

Emphasizing personalized treatment plans, Dr. Muralidharan tailors regenerative approaches based on individual patient needs and conditions. This approach aims to maximize therapeutic benefits and enhance overall patient satisfaction. Dr. Muralidharan's work represents a progressive approach in urology, combining cutting-edge regenerative techniques with traditional practices to offer improved treatment options for patients.















Dr Manoj Bansode BHMS, MS

VP. Cellular Biologics and Regulatory Affairs

Regulatory aspects of Regenerative Medicine

Dr. Manoj Bansode, is a scientist, clinician, and regulatory expert in regenerative medicine. A graduate of the MSc Regenerative Medicine program at Manipal Institute, he trained under leading scientists and furthered his expertise at the Calcutta Tropical Research Institute. His work focuses on stem cell culture, differentiation, and therapy, particularly for degenerative and neurological diseases where conventional treatments are less effective.

Specializing in translating lab research into clinical applications, Dr. Bansode ensures compliance with national and international regulatory standards. He has extensive knowledge of ethics, clinical trials, Good Laboratory Practices (GLP), and Good Manufacturing Practices (GMP), ensuring the safe and ethical use of stem cells. As a consultant, he advises on setting up stem cell labs and ensures regulatory adherence across India.

Dr. Bansode is also an educator, speaking on the ethics and regulatory aspects of stem cell therapy. His leadership drives the responsible implementation of cutting-edge stem cell treatments, improving patient outcomes and advancing the field of regenerative medicine.

Through his contributions, Dr. Manoj Bansode continues to pave the way for the safe and effective integration of stem cell therapies into mainstream medicine. His expertise in cellular biologics and regulatory affairs positions him as a leader in the field of regenerative medicine, ensuring that cutting-edge therapies are translated into realworld clinical solutions. His ongoing work promises to shape the future of stem cell therapy and its application in treating diseases that were once deemed untreatable.















Dr. Archana Devi MD Ramakrishna Hospital, Trichy

Advancing Infertility Treatment through Regenerative Medicine

Dr. Archana Devi, MD, is an experienced consultant in Obstetrics and Gynecology, recognized for her pioneering work in infertility and regenerative medicine. Based at Ramakrishna Hospital and Janani Fertility Centre in Trichy, India, she specializes in treating fertility challenges using advanced regenerative therapies.

Focus on Regenerative Medicine in Infertility

Dr. Archana's expertise lies in the application of stem cell therapy and Platelet-Rich Plasma (PRP) treatments, particularly for women with poor ovarian reserves or recurrent IVF failures. Through stem cell therapy, she enhances ovarian function and egg quality, offering patients a chance to conceive using their own genetic material, minimizing the need for donor eggs. This approach improves the fertility potential of women who face significant challenges in conception.

PRP therapy, another innovative technique used by Dr. Archana, involves injecting concentrated platelets into the uterine lining to improve its receptivity, thereby increasing the likelihood of implantation and pregnancy success. This therapy is particularly beneficial for patients who have undergone multiple unsuccessful IVF cycles.

Leadership in Regenerative Gynecology

Dr. Archana is a pioneer in the field of regenerative medicine for infertility in the Trichy region. She is the first local doctor to hold a Fellowship in Regenerative, Aesthetic, and Functional Gynecology. Her work has provided new hope for couples experiencing infertility, especially those with recurrent IVF failures.

By combining compassionate care with cutting-edge regenerative treatments, Dr. Archana Devi continues to be a leading figure in advancing fertility care, offering innovative solutions and improving patient outcomes in the field of reproductive medicine.

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Dr. Natesh Prabhu MD President, IMPA Director, Andergen Clinic

Men's Health, Sexual Medicine and Regenerative Medicine

Dr. Natesh Prabhu is the Medical Director and Men's Health Consultant at Andregn Clinic in Trichy, Tamil Nadu, with a diverse background in Sexual Health, Fertility, Diabetes, and Regenerative Medicine. After completing his post-graduation at Manipal University, Dr. Prabhu specialized in various fields, receiving Diabetology training under Dr. Shunmugavelu, Sexual Medicine Fellowship under Dr. N. Narayana Reddy, and Medical Andrology training under Dr. SS Vasan.

Dr. Prabhu's research and clinical focus centers on men's sexual health, infertility, and the application of regenerative techniques to enhance patient outcomes. His leadership roles include serving as the President of the Indian Medical Pharmacologists Association and Regional Representative for the South Asian Society for Sexual Medicine (SASSM). He is also a bylaw committee member of the International Society for Sexual Medicine and was the past joint secretary of the Indian Stem Cell Study Group.

In addition to his work at Andregn Clinic, Dr. Prabhu consults for various corporate hospitals and serves as an independent pharma research and regulatory consultant. His extensive training and leadership in sexual medicine and regenerative health make him a leading figure in the field.















18-19th Sep 2024 Dr. V Rajesh Babu MS, MCh Chairman, IMA - AMS

Champion of Organ Donation and Stem Cell Advocacy

Dr. Rajesh Babu, a prominent neurosurgeon, is not only recognized for his medical expertise but also for his active involvement in advancing public health causes through the Indian Medical Association (IMA). His dedication to the medical community extends far beyond the operating room. As the former President of the Coimbatore IMA branch and the current Chairman of the Academy of Medical Specialists (AMS) wing of IMA, Dr. Babu plays a pivotal role in shaping healthcare policies and promoting awareness on critical health issues.

Dr. Babu's passion for organ donation has been instrumental in positioning Tamil Nadu as a top performer in organ transplant procedures across India. Under his leadership, the state has seen significant improvements in organ donation awareness and transplant success rates. He has spearheaded numerous social initiatives aimed at educating the public about the importance of organ donation, contributing to the widespread acceptance of this life-saving practice.

His efforts have focused on dispelling myths about organ donation, emphasizing the impact that donating organs can have on the lives of those suffering from terminal illnesses or organ failure. Through his work, Tamil Nadu has become a model state for other regions in India to follow, achieving remarkable success in increasing both the number of organ donors and the number of transplants performed.

Stem cell donation represents a promising area in regenerative medicine, and Dr. Babu is actively working to raise awareness about its importance. By educating the public and healthcare professionals about stem cell donation, he hopes to build a strong base of willing donors who can help save lives through their contributions. This form of donation is especially critical in treating diseases for which conventional therapies are often limited or ineffective.

In recognition of his outstanding contributions to promoting organ and stem cell donation, Dr. Rajesh Babu is being honored at this conference. His commitment to advancing healthcare in Tamil Nadu and his role as a champion of life-saving donation programs have earned him the distinction of being a key figure in the state's healthcare success.















18-19th Sep 2024 Dr Satish Kumar MS Stanely Medical College

Innovating Orthopedic Care STANLEY PROTOCOL

Dr. Satish Kumar, M.S. Ortho, is a young and dynamic orthopedic surgeon currently serving as an Associate Professor in the Department of Orthopedics at Stanley Medical College, Chennai. With a strong interest in regenerative medicine, Dr. Kumar is pioneering research and clinical applications in musculoskeletal diseases. Collaborating with the state-of-the-art stem cell lab at Stanley Medical College, he is exploring innovative treatments that combine traditional orthopedic care with regenerative approaches.

Through his research, Dr. Kumar has formulated a specialized healing approach known as the "Stanley Protocol." This protocol integrates PRP therapy into the treatment plan for ulcers caused by compound fractures, significantly reducing the healing time. By applying PRP to the ulcerated areas, the protocol stimulates faster tissue regeneration, allowing for quicker recovery while patients await further surgical interventions, such as skin grafts or flaps.

This innovative approach has shown promising results in improving outcomes for patients with complex fractures. It helps reduce pain, shorten the duration of treatment, and minimize medical expenses, offering patients a more efficient and cost-effective path to recovery.

At this conference, Dr. Satish Kumar will present his pioneering work, demonstrating how the "Stanley Protocol" has revolutionized the management of difficult ulcers in compound fractures. By significantly reducing healing times and the need for extended surgical procedures, his approach offers a new avenue for improving patient care in orthopedic trauma cases

His research highlights the growing importance of regenerative medicine in orthopedic surgery, showcasing its potential to enhance traditional treatment methods and improve patient outcomes. Dr. Kumar's work stands as a testament to the future of orthopedics, where innovative approaches like PRP and stem cell therapies are seamlessly integrated into routine clinical practice.

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Prof. Dr Namitha Bhuvaneswari MS Rtd. Director, Regional Eye Hospital, Egmore

Ophthalmic Regenerative Medicine: Corneal Pathologies

Corneal blindness is a significant cause of visual impairment worldwide, particularly affecting underserved populations. In India, renowned ophthalmologists like Professor Dr. Namitha Bhuvaneswari have been at the forefront of innovative treatments aimed at reversing blindness caused by corneal diseases. As a leading cornea specialist and former director of the prestigious Regional Institute of Ophthalmology, Egmore, Chennai, Dr. Namitha has made substantial contributions to ophthalmology, utilizing regenerative medicine, particularly stem cell therapy, to restore vision in patients suffering from severe corneal pathologies.

Limbal stem cell therapy has emerged as a revolutionary treatment for corneal blindness caused by limbal stem cell deficiency (LSCD), a condition that leads to a breakdown of the corneal surface. This therapy involves harvesting healthy limbal stem cells from the patient's unaffected eye or from a donor, and implanting them onto the damaged cornea to promote regeneration. Dr. Namitha's expertise in this technique has successfully restored vision for many patients with corneal blindness, offering hope where traditional treatments have failed.

In cases of recurrent and chronic corneal ulcers, autologous blood serum eye drops have shown remarkable healing potential. Derived from the patient's own blood, these drops contain vital growth factors and anti-inflammatory properties that help heal ulcers resistant to conventional therapies. Dr. Namitha has effectively used this approach to treat numerous patients who were unresponsive to other treatments.

Indian ophthalmologists have been quick to embrace emerging technologies like laser applications, live cell imaging, gene therapies, and stem cell-based treatments. Breakthroughs such as 3D-printed "Liquid Cornea" by Pandorum Technologies and Eyestem's clinical trials using pluripotent stem cells to create retinal pigment epithelial (RPE) cells for treating age-related macular degeneration (AMD) signal a promising future for ophthalmic regenerative medicine.

As the field of ophthalmology continues to evolve, regenerative medicine holds the potential to offer treatments for previously untreatable conditions. Dr. Namitha Bhuvaneswari's pioneering work in corneal pathology and stem cell therapy showcases the transformative potential of these therapies in restoring sight and improving patient outcomes. Her upcoming presentation on the applications of stem cell therapy in eye diseases will further underscore the advancements in this field, placing Indian ophthalmologists at the forefront of global eye care innovation.

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Dr. G. Ravichandran MD, M.Derm Cosmetic Dermatologist, Apollo Hospital, Chennai

Platelet Rich Plasma in Regenerative Dermatology

Dr. G. Ravichandran, MD, DD, M.Derm, is a highly respected dermatologist with over 23 years of experience in clinical dermatology, cosmetology, and dermatosurgery. With a strong foundation in medical dermatology, Dr. Ravichandran has become renowned for his expertise in diagnosing and treating a wide range of skin conditions, including acne, eczema, psoriasis, vitiligo, and autoimmune skin disorders. His distinguished career, marked by his academic achievements and clinical prowess, has positioned him as a trusted expert in the field.

Having earned his Doctor of Medicine (MD) degree and Diploma in Dermatology (DD) from the prestigious Madras Medical College, Dr. Ravichandran has further specialized through continuous education and hands-on clinical experience. His work spans both medical and aesthetic dermatology, making him proficient in offering comprehensive skin care solutions that address the medical and cosmetic needs of his patients.

Dr. Ravichandran's approach is deeply patient-centered, focusing on personalized treatment plans that combine traditional dermatological methods with cutting-edge aesthetic procedures. He regularly updates his expertise in advanced technologies such as laser therapies, chemical peels, microdermabrasion, and dermal fillers, offering treatments that enhance both the health and appearance of the skin. His skill in performing dermatological procedures ensures effective management of skin conditions while improving overall skin aesthetics.

Beyond his clinical practice, Dr. Ravichandran is an active contributor to dermatological research and education. He is dedicated to developing new therapeutic protocols for chronic skin conditions and integrating regenerative medicine into dermatology. His contributions are widely recognized in the medical community, and he frequently speaks at national and international conferences, sharing insights on the latest advancements in dermatology and skincare.

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18-19th Sep 2024 Dr VR Ravi MS Dept. og Regen. Medicine, Maruti Hospital, Trichy

Innovative Approaches in Reproductive Health

Dr. V.R. Ravi, is a distinguished orthopedic surgeon with over two decades of experience, currently practicing at Maruthi Hospital in Trichy. In addition to his clinical practice, Dr. Ravi is the Director of Mothercell Regenerative Centre Pvt. Ltd., where he focuses on cutting-edge cell-based therapies. His drive to find more effective, long-term treatments for conditions like osteoarthritis, tendon injuries, and chronic soft tissue disorders led him to regenerative medicine. Over the last 15 years, Dr. Ravi and his team have been at the forefront of developing and applying various regenerative techniques, combining traditional orthopedic treatments with modern regenerative approaches.

Major highlight of Dr. Ravi's career has been his involvement in world-first FDAapproved allogenic stem cell therapies. He was part of the treatment team for Critical Limb Ischemia (using Regenacip) and Osteoarthritis (using STEMOne), marking a significant milestone in the application of allogenic stem cell therapies in orthopedic and vascular care. Critical Limb Ischemia, a severe obstruction of the arteries that significantly reduces blood flow to the extremities, often leads to amputation if untreated. The use of Regenacip stem cell therapy provided a groundbreaking nonsurgical solution, helping restore blood flow and saving limbs. Similarly, STEMOne was used to treat severe cases of osteoarthritis, offering hope for patients who had few options beyond invasive surgeries like joint replacements.

Dr. Ravi also pioneered the first-ever combination of 3D bioprinting with Bone Marrow Aspirate Concentrate (BMAC) for the treatment of a diabetic ulcer, in collaboration with Rokit, a leading technology firm in 3D bioprinting.

Committed to advancing regenerative medicine, Dr. Ravi has established an ISO 9001:2015 standard Good Laboratory Practice (GLP) facility in Trichy, Currently, Dr. Ravi is in the process of developing an off-the-shelf growth factor concentrate to treat various degenerative conditions. This product aims to provide readily available therapeutic solutions that could be easily administered to patients, offering more immediate relief from chronic conditions like osteoarthritis, tendon injuries, and cartilage degeneration.

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18-19th Sep 2024 Dr Avinash Gandi PhD

Clinical Scientist, Mothercell Regenerative Centre

Translational Stem Cell Research

Dr. Avinash Gandi's work in stem cell therapy is a testament to the growing focus on translating cutting-edge research into practical medical solutions. His role in developing low-cost GLP (Good Laboratory Practice) protocols for the isolation of stem cells from sources such as bone marrow, adipose tissue, and Wharton's jelly highlights his commitment to making regenerative medicine more accessible and affordable.

One of his key projects involves finding an alternative to fetal bovine serum (FBS), a commonly used but animal-derived supplement in stem cell culture media. FBS is widely used because it provides the necessary growth factors for cell proliferation. However, its animal origin raises ethical concerns and variability issues, which have driven researchers like Dr. Gandi to seek out viable, more standardized alternatives. His work in developing a medical device to address this challenge is both pioneering and essential, as it could significantly enhance the consistency and ethicality of stem cell culture, while also reducing costs.

Dr. Gandi's achievements include receiving the prestigious Biotech Ignition Grant, which is awarded to innovators bringing biotech concepts closer to commercialization. His pending patent for the medical device aimed at replacing FBS in cell culture demonstrates his forward-thinking approach. This patent could mark a significant shift in how stem cells are cultured, potentially leading to more sustainable, humane, and efficient processes in both research and clinical applications.

His qualifications as an internal auditor of Quality Management Systems (QMS) further underscore his focus on maintaining high standards in the development and application of these protocols. By ensuring adherence to rigorous quality guidelines, Dr. Gandi's work not only aims at innovation but also at creating reliable, reproducible methods that can be broadly implemented in both research and clinical settings.

In sum, Dr. Gandi is contributing to multiple facets of regenerative medicine: from the bench—where stem cells are isolated and cultured—to the bedside—where they are applied in clinical treatments. His research efforts, grant recognition, and pending patent reflect his deep commitment to advancing the field of stem cell therapy and regenerative medicine, with the goal of making these treatments more ethical, accessible, and effective.

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