1st VIRTUAL NATIONAL CME

IAPMR | MIDTERM

CME 2020

31st October & 1st November 2020

Theme

Rehabilitation Redefined

SOUVENIR

Rehab Surgery

Neuropathies

Sports Injuries

Lifestyle Disorder

NALANDA MEDICAL COLLEGE PATNA-26

Pain & Arthritis

PRP & Regenerative Therapies

Neuromuscular & Joint Injection

AIIMS - PATNA

IGIMS, PATNA

Musculoskeletal Ultrasound

Botulinum Toxin Injection

Neuro Rehab (Brain and Spinal Cord Injuries)

Organised by : Bihar Association of Physical Medicine and Rehabilitation (BAPMR)

फागू चौहान
PHAGU CHAUHAN

राज भवन
पटना–800022
RAJ BHAVAN
PATNA-800022

GOVERNOR OF BIHAR

22nd October, 2020

MESSAGE

It gives me pleasure to learn that the Bihar Association of Physical Medicine and Rehabilitation (BAPMR) and Department of PMR, All India Institute of Medical Sciences, Patna are organising the "National IAPMR Medterm CME - 2020 (Online) on the theme "Rehabilitation-Redefined" from 31st October to November 01st, 2020 at All India Institute of Medical Sciences, Patna.

I hope that conference will be very fruitful for the medical practitioners and students of Physical medicines.

I extend my best wishes for the grand success of the conference.

(Phagu Chauhan)

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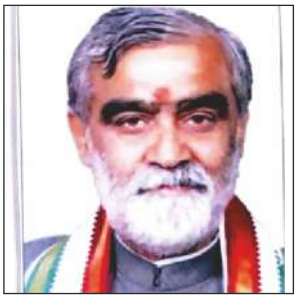

अश्विनी कुमार चौबे
Ashwini Kumar Choubey

सत्यमेव जयते
सर्वेसन्तु निरामया

स्वास्थ्य एवं परिवार कल्याण राज्य मंत्री
भारत सरकार
MINISTER OF STATE FOR
HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA

संदेश

मुझे यह जानकर अत्यन्त प्रसन्नता हो रही है कि IAPMR MIDTERM CME 2020 का ऑनलाइन आयोजन 31 अक्टूबर – 01 नवम्बर, 2020 को एम्स, पटना के भौतिक चिकित्सा एवं पुनर्वास (PMR) विभाग और BAPMR द्वारा आयोजित किया जा रहा है । इस ऑनलाइन सम्मेलन (वेबिनार) का विषय "पुनःपरिभाषित पुनर्वास" (*Rehabilitation Redefined*) है।

भौतिक चिकित्सा एवं पुनर्वास विशेषज्ञ दिव्यांग व्यक्तियों के कल्याण एवं पुनर्वास के लिए लगातार काम कर रहे हैं। इस सम्मेलन में राष्ट्रीय एवं अंतर्राष्ट्रीय विशेषज्ञ दिव्यांगता के कारणों पर चर्चा करेंगे एवं उसके प्रबंधन हेतु नए सुझावों पर कार्य करेंगे । दिव्यांगता और पुनर्वास के प्रबंधन में अब तक की प्रगति एवं वर्तमान परिदृश्य पर चर्चा प्रस्तावित है, जो इस विषय पर जागरुकता फैलाने का कार्य करेगी।

मुझे विश्वास है कि यह कार्यक्रम भौतिक चिकित्सा एवं पुनर्वास पर नए सिरे से विचार करने के लिए एक महत्वपूर्ण अवसर रहेगा। विशेषज्ञों में विचार-विमर्श से ज्ञान एवं अनुभव का आदान-प्रदान होगा, जो पुनर्वास के विषय में एक मील का पत्थर साबित होगा। मुझे जानकारी मिली है कि इस ऑनलाइन सम्मेलन में देश-विदेश से लगभग 500 प्रतिनिधि भाग ले रहे हैं। मैं इस आयोजन के लिए IAPMR MIDTERM CME 2020 की टीम को अपने तरफ से हार्दिक बधाई देता हूँ एवं इस कार्यक्रम की सफलता के लिए ईश्वर से कामना करता हूँ।

(अश्विनी कुमार चौबे)

दिनांक: 22.10.2020

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Mangal Pandey
Minister
Department of Health
Govt. of Bihar.

बिहार सरकार

Letter No. 364(R)

Date. 15.10.2020

"MESSAGE"

I am immensely happy to know that the "BIHAR ASSOCIATION OF PHYSICAL MEDICINE AND REHABILITATION (BAPMR) " is Organizing "IAPMR MIDTERM CME (Online) 2020" with the theme of "Rehabilitation – Redefined", on 31st Oct to 01st November-2020 at AIIMS, Patna. A Souvenir will be published on this Occasion.

I hope this conference of PMR Specialists will be discussing latest research work and sharing their scientific observations & updating their knowledge about vital topics such as "Issues on Rehabilitation on quality of life in persons with Disabilities" which will ultimately help patients & Society.

I convey my felicitations to organizers and faculties and wish the conference and souvenir a grand success.

(Mangal Pandey)

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कार्यालय राज्य आयुक्त निःशक्तता (दिव्यांगजन)
OFFICE OF STATE COMMISSIONER FOR PERSONS WITH DISABILITIES
समाज कल्याण विभाग/Social Welfare Department
बिहार सरकार/Government of Bihar

Dr. Shivajee Kumar
State Commissioner Disabilities
Bihar

Message form the "State Commissioner Disabilities"

It gives me immense pleasure to note that BIHAR ASSOCIATION OF PHYSICAL MEDICINE AND REHABILITATION (BAPMR) and Department of Physical Medicine & Rehabilitation, AIIMS, Patna is Organizing the National IAPMR MIDTERM CME 2020 (Online) of the Indian Association of PMR Specialists on the theme "Rehabilitation -Redefined" during October 31st& November 01st, 2020 at ALL INDIA INSTITUTE OF MEDICAL SCIENCES (AIIMS), Patna.

The theme of the conference **"Rehabilitation-Redefined"** is very noble. I have also been informed that large number of International and National PMR experts will be participating in it.

I am sure, this platform will provide an excellent opportunity for the PHYSICAL MEDICINE AND REHABILITATION (PMR) experts for discussions among themselves, exchange of their views which will be a milestone in the development of Physical Medicine & Rehabilitation Speciality. As I know PMR Speciality is one amongst all medical Speciality which is dedicated for the medical welfare of Persons with Disabilities (Divyangjan) and this COVID -19 pandemic has severely affected Persons with Disabilities in more than one front.

I congratulate BAPMR and Organizing Secretary Dr. Sanjay Kumar Pandey and wish the occasion a grand success and participants the bright future ahead

Dr. Shivajee Kumar
State Commissioner Disabilities
Bihar

अखिल भारतीय आयुर्विज्ञान संस्थान पटना
ALL INDIA INSTITUTE OF MEDICAL SCIENCES PATNA

Prof. (Dr.) Prabhat kr. Singh
Director
AIIMS Patna

Message from the "Hon'ble Director AIIMS Patna"

It gives me immense pleasure to note that BIHAR ASSOCIATION OF PHYSICAL MEDICINE AND REHABILITATION (BAPMR) and Department of Physical Medicine & Rehabilitation, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, Patna is organizing the national IAPMR MIDTERM CME 2020 (Online) of the Indian Association of PMR Specialists on the theme **"Rehabilitation – Redefined"** To be held on October 31st & November 01st, 2020 at ALL INDIA INSTITUTE OF MEDICAL SCIENCES, Patna.

The theme of the conference is very noble. I am sure, this platform will provide great opportunity for the PMR experts for discussing among themselves, exchange of their experience and knowledge, which will be a milestone in the development of Rehabilitation Medicine Speciality. I was told that approximately 400-500 delegates are attending the CME from all around nation and globe. I hope this CME will provide an excellent opportunity for the participants, dignitaries and delegates to update their knowledge with latest advances in field of Rehabilitation Medicine.

I would like to convey my heartiest congratulations to the organizing secretary Dr. Sanjay Kr Pandey and his team. I wish the occasion a grand success and participants the bright future.

Prof. (Dr.) Prabhat kr. Singh
DIRECTOR
AIIMS Patna

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES

(An Autonomous Institute of Govt of Bihar)
Statuary University Created by act of State legislature

Prof. (Dr.) N. R. Biswas
MD.D.M.DNB.DSc(Honoris Causa)
Director & Vice-Chancellor

Message

It gives me immense pleasure to welcome you all as Vice Chancellor & Director of Indira Gandhi Institute of Medical Sciences, Patna & Patron of the Annual National Midterm CME 2020(Online) of Indian Association of Physical Medicine and Rehabilitant (IAPMR) organized by Bihar Association of Physical Medicine and Rehabilitation (BAPMR).

I was told that approximately 400-500 delegates attend the CME from all around nation and globe. I hope all the participants, Dignitaries and delegates will find an excellent academic and educational milieu for providing a platform for development of quality medical and rehab services in the nation. Theme of CME **"Rehabilitation-Redefined"** aims to enhance and restore functional ability and quality of life of patients with physical impairments or disabilities arising from Chronic Pain, Arthritis, Sports, Brain and Spinal injuries.

I am sure this CME will provide an excellent opportunity for all participants to update their knowledge with latest advances in field of Rehabilitation medicine and a souvenir will be published.

I would like to convey my heartiest congratulations to the oraganizing secretary Dr. Sanjay Kr. Pandey, Dr. Raj Kumar and all his all team and for grand success of the CME.

Prof (Dr.) N. R. Biswas

आष्ट्रीय गतिशील दिव्यांगजन संस्थान
(दिव्यांगजन सशक्तिकरणविभाग, सामाजिकन्याय एवं अधिकारितामंत्रालय, भारत सरकार)
National Institute for Locomotor Disabilities (Divyangjan)
Department of Empowerment of PwDs (Divyangjan),
Ministry of Social Justice and Empowerment, Govt. of India

Dr. A. Equebal
Director

Message

It gives me immense pleasure to note that BIHAR ASSOCIATION OF PHYSICAL MEDICINE AND REHABILITATION (BAPMR) and Department of Physical Medicine & Rehabilitation, ALL INDIA INSTITUTE OF MEDICAL SCIENCES Patna is Organising the National IAPMR MIDTERM CME 2020 (Online) of the Indian Association of PMR Specialists on the theme **"Rehabilitation - Redefined"** to be held on October 31 & November 01, 2020 at ALL INDIA INSTITUTE OF MEDICAL SCIENCES Patna.

The theme of the conference is the need of the hour as a large number of young physiatrists are joining the speciality every year. I am sure, this platform will provide great opportunity for the experts and students alike for discussions, exchange of ideas and knowledge. I hope this CME will provide an excellent opportunity for the delegates to update their knowledge with latest advances in field of Rehabilitation medicine.

I would like to convey my heartiest congratulations to the organizing Secretary Dr. Sanjay Kr Pandey, and his team. I wish the occasion a grand success and young participants a bright future ahead.

Dr. A. Equebal
Director

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अखिल भारतीय आयुर्विज्ञान संस्थान पटना
ALL INDIA INSTITUTE OF MEDICAL SCIENCES PATNA

Dr. Neeraj Agarwal
DEAN
AIIMS Patna

Message from the "DEAN"AIIMS Patna

I am immensely happy to learn that the IAPMR MIDTERM CME (online) 2020 on the theme **"Rehabilitation – Redefined"** is organizing by Bihar Association of Physical Medicine and Rehabilitation (BAPMR) scheduled on 31st Oct 2020 & 01st Nov 2020 at AIIMS Patna. It is of great significance that this august body is going to deliberate upon several important topics exploring new areas of practice, enhancing quality of professional services and in the field of Physical Medicine and Rehabilitation.

I am sure that this CME will contribute effectively in order to achieve the ultimate goal.

I wish the organizers of the CME and the participants a grand success.

N. Agarwal

Dr. Neeraj Agarwal
DEAN
AIIMS Patna

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES

(An Autonomous Institute of Govt of Bihar)

Statuary University Created by act of State legislature

Dr. Vijoy Kumar
Dean (Academic) and Head of Dept
Urology

Message

I am indeed happy to know that Bihar Association of Physical Medicine and Rehabilitation (BAPMR) is going to organize Annual National Midterm CME 2020(Online) of Indian Associaton of Physical Medicine and Rehabilitaon(IAPMR) on 31st Oct - 1Nov 2020 and is also bringing out a souvenir on this occasion.

Rehabilitation medicine is progressing at fast pace and has become a upcoming field in Bihar and India. So It is essential for Physiatrist (PMR experts) to remain updated with latest developments.

I Know Dr Sanjay Kr Pandey and Dr Raj Kumar are hard working and they are trying their best to facilitate the overall aspects of Rehabiltation medicine and surgery via this Ist of its kind of Online CME. I extend my best wishes for the success.

Vijoy Kumar

Dr. Vijoy Kumar
Dean (Academic) and Head of Dept,
Urology

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES

Prof. (Dr.) Ranjit Guha
Principal, Medical College

(An Autonomous Institute of Government of Bihar)
Statutory University Created by an Act of State Legislature

Prof. (Dr.) Ranjit Guha

Principal, Medical College

Message

It is my boundless pleasure to write this message for souvenir of Annual National Midterm CME 2020 (Online) of Indian Association of Physical Medicine and Rehabilitation (IAPMR) organized by Bihar Association of Physical Medicine and Rehabilitation (BAPMR) on 31st Oct – 1 Nov 2020.

The specialty that came to be known as Physical Medicine and Rehabilitation in the United States was officially established in 1947, when an independent Board of Physical Medicine was established under the authority of the American Board of Medical Specialties. In 1949, at the insistence of Dr. Rusk and others, the specialty incorporated rehabilitation medicine and changed its name to Physical Medicine and Rehabilitation.

Physical Medicine and Rehabilitation, also known as Physiatry, is a branch of medicine that aims to enhance and restore functional ability and quality of life to people with physical impairments or disabilities. This can include conditions such as spinal cord injuries, brain injuries, strokes, amputation and other debilitating injuries or conditions as well as pain or disability due to muscle, ligament or nerve damage, both in hospital and outpatient settings. Hence, Physical Medicine and Rehabilitation encompasses a variety of clinical settings and patient populations.

CME is the forum for exchange of views, ideas, skill and also platform to discuss recent development and advances. Lively deliberations will take place by eminent International and National Experts.

The highlights of the CME shall include invited lectures and oral presentations. Along with these there will be various scientific sessions too on different facets of Physical Medicine and Rehabilitation including recent advances.

Theme of CME "Rehabilitation-Redefined" adds new dimension in the speciality and its various subspecialties like Rheumatological rehab, Sports, Musculoskeletal, Neurological and Pain Medicine.

From the aforesaid exhaustive list, it is evident that this CME is bound to enrich both the context and content and the contours of PMR as a specialty which will ultimately benefit society in large suffering from short and long term disabilities.

It is hoped that this CME will add new dimensions to the concepts and applications of various facets of PMR through intense academic activities and scholastic discussions. I am sure that all participants will carry back home long- lasting sweet memory of the experience of attending this Annual National Midterm CME 2020 (Online) with its scientific extravaganza.

Once again, I wish the participants a very fruitful and productive CME. I congratulate Dr. Sanjay Kr. Pandey, Dr. Raj Kumar and BAPMR members for organizing the CME. I wish the CME all success.

Ranjit Guha

Prof. (Dr.) Ranjit Guha

अखिल भारतीय आयुर्विज्ञान संस्थान पटना
ALL INDIA INSTITUTE OF MEDICAL SCIENCES PATNA

Prof. (Dr.) C. M. Singh
Medical Superintendent

Message from the "MEDICAL SUPERINTENDENT"AIIMS Patna

It gives me immense pleasure to note that BIHAR ASSOCIATION OF PHYSICAL MEDICINE AND REHABILITATION (BAPMR) and Department of Physical Medicine & Rehabilitation, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, Patna is organizing the national IAPMR MIDTERM CME 2020(online) of the Indian Association of PMR Specialists on the theme **"Rehabilitation – Redefined"** Being held on October 31st & November 01st, 2020 at All India Institute of Medical Sciences, Patna.

It is heartening to note that large number of International and National Experts are going to participate in the above CME. Apart from presentation of scientific papers, it may ultimately benefit the society at large and in particular for persons with locomotor disabilities, Divyangjan, amputees and patients with chronic pain.

I would like to convey my heartiest congratulations to the organizing secretary Dr. Sanjay Kr Pandey and his team. I wish the occasion a grand success.

Prof. (Dr.) C. M. Singh
Medical Superintendent

INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES

(An Autonomous Institute of Govt of Bihar)

Statuary University Created by act of State legislature

Dr. Manish Mandal
Medical Superintendent

Message

It's a matter of great pleasure that thatBihar Association of Physical Medicine and Rehabilitation (BAPMR) is going to organize Annual National Midterm CME 2020(Online) of Indian Association of Physical Medicine and Rehabilitation(IAPMR) on 31st Oct - 1Nov 2020 and is also bringing out a souvenir on this occasion.

As I know that IAPMR & BAPMR which is scientific body of eminent doctors specialized in the field of PM&R with objective of providing medical rehabilitation of Divyangjans.

The organizing committee is making all efforts to make this Online CME to update the latest development in the field of PMR. As a Head of hospital administration, IGIMS, I have full faith in Dr Sanjay Kumar Pandey and his all team. They will leave no stone unturned to make this event a memorable one. Dr Raj Kumar Co organizing secretary has a vast experience in organizing the academic feast and I am hopeful that he will put his best efforts to throw light on all aspects of the CME.

I am also sure that experts in this CME will deliberate on basic as well as newer aspects of Rehabilitation medicine and surgery as well as various technologies for evolving new means for speedier rehabilitation of patients with physical Pain, Arthritis, Sports injuries and set standard for excellence.

Long Live IAPMR & BAPMR.

Dr. Manish Mandal
Medical Superintendent

अखिल भारतीय आयुर्विज्ञान संस्थान पटना
ALL INDIA INSTITUTE OF MEDICAL SCIENCES PATNA

Parimal Sinha
Deputy Director (Administration)
All India Institute of Medical Sciences Patna

Message from the "DEPUTY DIRECTOR (Administration)

It gives me immense pleasure to note that Bihar Association of Physical Medicine and Rehabilitation (BAPMR) and Department of Physical Medicine & Rehabilitation, All India Institute of Medical Sciences, Patna is organising the National IAPMR MIDTERM CME 2020 from 31st Oct – 1st Nov, 2020.

It is heartening to know that around 500 Rehabilitation Specialists Doctors (Physiatrists) from India and around the world are participating in this academic event.

The theme of the CME "Rehabilitation – Redefined" is very relevant for present COVID time. The development of Physical and Rehabilitation Medicine is an important and an integral part for healthcare service in the developing countries so as to improve the functional status and quality of life of the disabled persons and patients with chronic illnesses. The knowledge and skills in Rehabilitation Medicine is improving by leaps and bounds in recent years, aided by infusion of cutting edge technology.

I hope it would enable the specialists to discuss various facets of Rehabilitation medicine, Interventional Physiatry and Rehab Surgery.

In times of COVID- 19, it is heartening to know that Association has taken all pain to contribute to the society, and in spite of all impediments, has decided to go online in conduct of CME.

I heartily congratulate Organising Secretary of CME Dr. Sanjay Kumar Pandey, his team and BAPMR & wish National IAPMR MIDTERM CME 2020 (Online) and the Souvenir a grand success.

Parimal Sinha

Deputy Director (Administration)
All India Institute of Medical Sciences Patna

Dr. Sanjay Wadhwa
PRESIDENT
Indian Association of Physical Medicine and Rehabilitation
Professor, Dept. of Physical Medicine & Rehabilitation,
AIIMS, New Delhi - 110029
E-mail : iapmrpresident@gmail.com & wadhwadr@gmail.com

14th October 2020

MESSAGE

I am very glad to know that the Bihar Association of Physical Medicine and Rehabilitation and AIIMS, Patna are jointly organizing the IAPMR Mid-Term CME Programme 2020 on 31 October and 1 November, 2020. The theme of this CME is very important – *Rehabilitation Redefined*!

This academic event spread over 2 days will provide a varied and rich feast of scientific knowledge related to Physical Medicine and Rehabilitation. A number of important topics will be covered by the experienced Faculty during this period, and this Mid-Term CME Programme will be very useful to all the participants.

This year, the Mid-Term CME Programme is very unique! Owing to large scale unprecedented disruption all around as a result of Covid-19 Pandemic, marked restrictions in international and domestic travel, and gathering of people, this CME Programme is going to be Online! For the Organizers and Participants, it is going to be a challenge as well as a new opportunity and useful experience.

I am very glad to notice the enthusiasm of the Organizing Secretary, and the amount of hard work being put in by the whole Organizing Team, under the Patronage of Prof PK Singh, Hon'ble Director of AIIMS, Patna and Prof NR Biswas, Hon'ble Director & Vice-Chancellor of IGIMS, Patna, despite several odds, to ensure success of this CME Programme. I have no doubt that it will pave the path for online academic activities in future at the national level.

I look forward to joining this Mid-Term CME as the President of IAPMR, and convey my best wishes for its grand success.

Long live IAPMR! Jai Hind!!

SANJAY WADHWA

Dr. Navita Vyas
Secretary
Indian Association of Physical Medicine and Rehabilitation

Message

Greetings from Indian Association of Physical Medicine and Rehabilitation

It gives me immense pleasure and joy that IAPMR Mid Term CME for 2020 is being held in Patna, Bihar on 31st Oct and 1st Nov.

On behalf of IAPM, I extend a very warm welcome to all the participants for this unique event. It's unique in its own kind as it is the first virtual CME of IAPMR. I congratulate Prof Ajit Verma and Dr Sanjay Pandey and the team for taking up this challenge and coming forward with Virtual Midterm CME.

The Theme of the CME is," Rehabilitation Redefined", which is very apt keeping in mind the current scenario and also the need of the hour. It has wonderful topics including recent advances in rehab and COVID rehabilitation.

We all are going through a tough time during this pandemic and I am sure everyone has had their own experiences, but nevertheless, sharing of knowledge cannot be stopped by this Virus and we are back the New Normal i.e. the Virtual Midterm CME. Staying safe and healthy is the prime motto and also to be updated in knowledge.

I am very sure that under able guidance of Professor Ajit Verma and scientific committee team, we will learn many new things along with the basics and Dr Sanjay Pandey and organising team will make sure that these 2 days make a huge impact in our lives.

We are ready with the dynamic website of IAPMR with individual member log in and online polls. I urge each and every member to kindly register. We have also realized the social media plays important role in dissipation of any information; we have been successful in creating our own faceook page https://www.facebook.com/Indian Association of Physical-Medicine-Rehabilitation-IAPMR; Twitter handle https://twitter.com/IAPMR1; and You Tube Channel https://www.youtube.com/channel. If you want to share any news or achievements on these platforms, please s send the content to the respective Nodal Officer of your zone.

I would invite everyone for the mega and unique event to join in large numbers for making this a successful event.

Wishing the best for successful event to the organizers.

Long Live IAPMR

Navita

Dr. Navita Vyas
Secretary IAPMR

Patna Medical College, Patna
Physical Medicine & Rehab. (PMR) Department

Dr. Ajit K. Varma (Physiatrist)
M.S. Ortho, DNB (PMR)
Professor
Bihar Association of Physical Medicine Specialist
Mob. : 9430247511
email : ajitvarma592@yahoo.com

From the Desk of President "BAPMR"

Patna, Dated 18th Oct. 2020

On behalf of the Bihar Association of Physical Medicine Specialists, I take this opportunity to send my best wishes and appreciate to see the wonderful team coordination and joint efforts by AIIMS, Patna, to organise this National mega event on Oct.31st & Nov. 1st, 2020 at Patna.

Under the present scenario of Global pandemic Covid Crisis, It has been but extremely difficult endeavour to bring, International and National experts, on a common platform and providing them a wonderful opportunity for future interactions in improving quality of life (QoL) among the persons with disability.

I am confident and sending warm wishes for the overall success of this upcoming event.

01.11.2020

(Dr. Ajit Varma)
President
Bihar Association of Physical Medicine Specialists

IAPMR MidTerm CME 2020

Organised by - Bihar Association of Physical Medicine & Rehabilitation (BAPMR)
Registered under Societies Registration Act 1860, Registration No. S18681

Dr. Arun Kumar
Associate Prof.
HOD, PMR
PMCH, Patna

Message from the Desk of Organising Chairman

Dear colleagues,

It is our pleasure to conduct the midterm CME on 31st October 2020 to 1st November 2020 in Patna AIIMS. The whole world has now changed its academic feast module through online virtual learning and discussion due to Covid -19. Midterm online CME intended to cover various aspects of Rehabilitation medicine so as to make it more and more fruitful, practical exchange of knowledge. We believe in sharing knowledge with senior faculty and upcoming PGT and senior residents to participate in this platform.

We look forward to welcome you all in much awaited Midterm CME conducted by BAPMR, Bihar in association with IAPMR.

I think the CME will be great success under team of young Physiatrist.

With regards

Arun Kumar

Yours sincerely
Dr. Arun Kumar
Organising Chairman
IAPMR MIDTERM CME 2020

Dr. Raj Kumar
MD(PMR), PGDGM,FiPM, PGP
Associate Professor & Head
Department of Physical Medicine & Rehabilitation
Cum Dy MS, IGIMS, Patna-800014.
Chairman Souvenir Committee
IAPMR Mid Term CME 2020
Email: pmr@igims.org; drkrraj@gmail.com
MB:7368064155

MESSAGE

It's my limitless pleasure and pride to pen down the message for, and present the souvenir on the occasion of 1st Virtual Annual National Midterm CME 2020 (Online) of Indian Association of Physical Medicine and Rehabilitaon (IAPMR) organized by Bihar Association of Physical Medicine and Rehabilitation (BAPMR) on 31st Oct - 1st Nov 2020.

Theme of CME **"Rehabilitation-Redefined"** rejuvenates the Physiatry by incorporating new dimensions on top of the basics in the PMR and its subspecialites like Rheumatological rehab, Neurorehab, Sports, Post COVID Pulmonary, neurological and musculoskeletal rehab.

Souvenir content include messages from the Eminent persons, Invited guest lectures, Articles from distinguished physiatrist, Award & Free papers from imagination and research of young PMR post graduates & physicians , gratitude to the sponsor, Glory and monuments of Patna, Bihar. So, It will help readers to go through the work exposure of Physiatry from Pain Medicine to Rehabiltation of Paediatric to Geriatric age group incorporationg Interventions to Telemedicne.

The souvenir committee is thankful to all those who have contributed toward the Souvenir content, Senior Physiatrists, Our Scientific Committee who tirelessly worked hard and all BAPMR colleagues who helped me to compile the souvenir in comprehensive and presentable form.

I hope this souvenir would fulfill its purpose.

Wishing you all a pleasurable and memorable 1st Virtual IAPMR CME.

Jai PMR, Jai Hind.

DR RAJ KUMAR
Chairman Souvenir Committee
IAPMR Mid Term CME 2020

IAPMR MidTerm CME 2020

Organised by - Bihar Association of Physical Medicine & Rehabilitation (BAPMR)
Registered under Societies Registration Act 1860, Registration No. S18681

Dr. Sanjay Kumar Pandey
Organising secretary
IAPMR MIDTERM CME 2020
Mobile: 8102922824

Message from the Desk of Organising Secretary

I am indeed privileged and also delighted to host the IAPMR MIDTERM CME

2020 (Online) at the at ALL INDIA INSTITUTE OF MEDICAL SCIENCES Patna, Bihar under the aegis of INDIAN ASSOCIATION OF PHYSICAL MEDICINE AND REHABILITATION.

I must admit it was quite a hectic and challenging task to arrange in present situation amidst ongoing COVID 19 pandemic. But due to never wavering enormous support from the well-wishers the dream come true.

I express my sincere gratitude to the IAPMR for giving this opportunity and office bearers of BAPMR for agreeing upon to organize this most challenging event. Such an exceptional task would not have been possible without the voyage travelled together by the members of organizing committee, National and International faculty for their participation and of course the respected delegates.

I would like to express my sincere thanks to IAPMR President Prof. (Dr.) Sanjay Wadhwa, Secretary IAPMR, President BAPMR Prof. (Dr.) Ajit Kr.Varma and Organising Chairman Dr. Arun Kumar for all the support extended towards organising this event.

We are honored to have Prof. (Dr.) Prabhat Kumar Singh, Director, AIIMS Patna and Prof. (Dr.) N.R.Biswas Director, AIIMS Patna as the Patron to the most awaited conference and release the conference souvenir,

The conference program has been planned to deliver the most recent advancement in the field of Physical Medicine and Rehabilitation for the benefit of the mankind and society at large.

Conference theme is “Rehabilitation Redefined” has an overwhelming response.

Eight session in two days of faculty lecture covered latest update of Medical and Surgical Rehabilitation, Interventional Physiatry, Pain, Palliation, Disability and Rehabilitation related issues. We will also explore exciting challenges in the territory of Regenerative medicine and Interventional Physiatry and Prosthetics.

Our younger Physiatrist friends contributed a lot in two session of free paper and award session

I hope that each one of you will enjoy the academic feast and wish you all a great future

Long live IAPMR, Jai Hind.

Dr. Sanjay Kumar Pandey
Organising secretary
IAPMR MIDTERM CME 2020
Mobile: 8102922824

IAPMR OFFICE BEARERS

Indian Association of Physical Medicine and Rehabilitation that is IAPMR, is an apex body of medical doctors having a specialization in Physical Medicine and Rehabilitation (PMR). It was formed way back on 14th April 1972 in New Delhi. The association was founded as a professional Society of physicians and surgeons to diagnose treat and rehabilitate patients with illness and physical disabilities.

Dr. Miss Mary Verghese
First President and Founder Member, IAPMR

Dr. W G Rama Rao
Second President, IAPMR

Dr. Prof. Sanjay Wadhwa
Present President

Dr. P Thirunavukkarasu
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Patron: Dr. (Prof) N.R.Biswas

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Dr. Sumant Kr Singh

Dr. Ravi narayan Sinha

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Bihar association of Physical Medicine and Rehabilitation (BAPMR)

Registered under Societies Registration Act 1860, Registration No. S18681

OFFICE BEARERS

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Dr. Manoj Kumar

Dr. Ashish Srivastava

A Glimpse into the History of IAPMR - Lest We Forget!

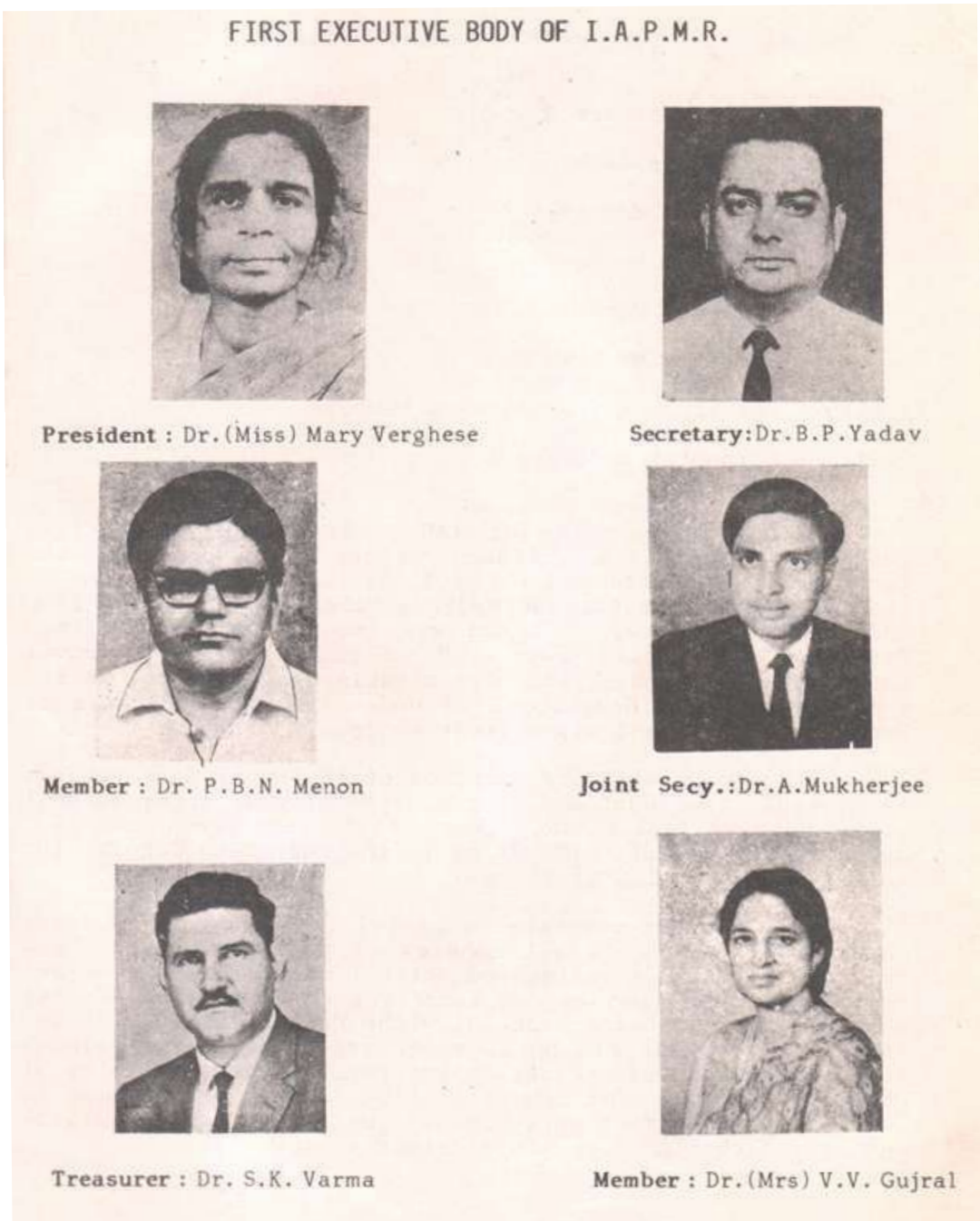
Dr. Sanjay Wadhwa
President, IAPMR & Professor
Dept. of Physical Medicine and Rehabilitation
AIIMS, New Delhi
E-mail: iapmrpresident@gmail.com & wadhwadr@gmail.com

Fifty years ago, in 1970, a handful of Medical Specialists, working in different Institutions, mainly in Delhi, but some in Calcutta, Bombay, and Vellore etc. based on their experiences in India and abroad, strongly felt the need for creation of an Association of Doctors practicing Physical Medicine and Rehabilitation in India. Discussions were held among them, resulting in creation of a nucleus during a Meeting at AIIMS, New Delhi on 14 April 1972! It was named Indian Association of Physical Medicine and Rehabilitation (IAPMR). It was registered on 6 July 1972 under the Society's Registration Act 1860.

The First Executive Body of IAPMR comprised of Dr (Miss) Mary Verghese (President) from Vellore, Dr BP Yadav (Secretary) from Delhi, Dr SK Varma (Treasurer) from Delhi, Dr AK Mukherjee (Joint Secretary) from Delhi, Dr PBM Menon (Member) from Trivandrum, and Dr (Mrs) VV Gujral (Member) from Delhi. Please see the image below.

During the past almost five decades, IAPMR has expanded and grown in quantitative and qualitative terms. It has been organising Conferences in different parts of the country every year, and also conducting Continuing Medical education (CME) Programmes. It has its own Constitution and its Membership has grown gradually. Some of its Members have contributed significantly at National and International levels, and have been recognised by the Govt. of India, President of India, Medical Council of India as well as various International Bodies like WHO, UNICEF. Three of its Life Members, namely Dr AK Mukherjee, Dr RK Srivastava, and Dr BD Athani occupied the coveted Chair of DGHS, Govt. of India, and two of its Life Members, namely Dr HC Goyal and Dr SY Kothari reached the position of Special DGHS! One of its Life Member, namely Dr WG Rama Rao occupied the Chair of President of IAPMR, as well as Indian Orthopaedic Association, and Indian Rheumatology Association! Two of its Founder Members, namely Dr SK Varma and Dr BP Yadav occupied the Chairs of Chairman, Rehabilitation Council of India. Dr SK Varma also served as Chairman, ALIMCO! One of the past President of IAPMR, namely Dr IS Shanmugham served as the Chairman, Tamil Nadu Public Service Commission. There are a few other notable examples as well.

The IAPMR Presidents have been eminent specialists of PMR, spread across various States in India. They are as follows (in sequence): Dr (Miss) Mary Verghese, Dr WG Rama Rao, Dr SK Banerjee, Dr SK Varma, Dr PBM Menon, Dr IS Shanmugham, Dr BP Yadav, Dr KK Singh, Dr K Janardhanam, Dr MHR Rizvi, Dr RK Srivastava, Dr G Ramadas, Dr KK Menon, Dr S Hariharan, Dr SK Jain, Dr SY Kothari, Dr BK Choudhury, Dr Ajit Kumar Varma, Dr N George Joseph, Dr KB Wangjam, Dr SL Yadav, Dr RN Haldar, and Dr Sanjay Wadhwa at present.



Source: The First Official Directory of IAPMR prepared by Dr Sanjay Wadhwa, June 1990

This is my remembrance of and humble tribute to the men and women of IAPMR who had vision and courage. I feel honoured and humbled following their footsteps.

Long Live IAPMR!

Dr Sanjay Wadhwa, President, IAPMR (April 2019 - March 2021).

Glory and Heritage of Bihar

The history of Patliputra (Patna) and Bihar may not be locked entirely in the pages of history. In the time of Virtual CME, Delegates and Dignitaries outside of the state are not getting oppurtunity to explore bihar. Here is some glorious glimpses of this ancient, religious, cultural, educational and republic Bihar.

Patna (Patliputra): Here is some places of Interest in the state capital....

Sanjay Gandhi Jaivik Udyan (Patna Zoo)

Sahid Smarak

Patna Planetarium

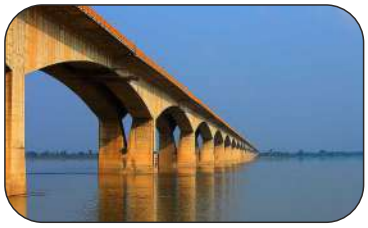
PATNA MEUSEUM Bihar

Museum(New)

Golghar

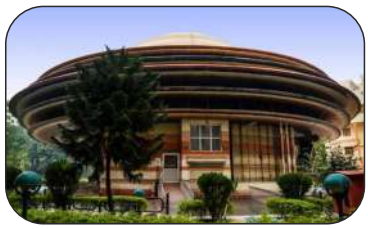
ManerSharif Dargah

Mahvir Mandir



Mahatma-Gandhi-Setu-

Khuda Baksh Library



Indira Gandhi Planetarium

Gurudwara Patna Sahib

Gandhi Maidan

Bodhgaya is one of the best historical sites in India and is sanctified in the Jain, Hindu, and Buddhist religions. It's a place for pindaan rituals (Rama, with Sita and Lakshmana, offered pind-daan for his father Dasratha) . Its main attractions are Mahabodhi Temple Complex. Bodhi Tree, Vishnupada Temple, Great Buddha Statue (80ft), Thai Monastery, Royal Bhutan Monastery, Metta Buddharam Temple, Indosan Nippon Japanese Temple, Muchalinda lake, Sujata temple, Dungeswari Hills etc.

Nalanda is a notable tourist destination with ruins of Nalanda University (Word famous highly formalised methods of vedic studies) and and as a part of the Jainisn and Buddhist tourism.

Rajgir (in Nalanda district) was the first capital of the kingdom of Magadha. Main attractions are Ghora Katora Lake, Brahmakund (hot water springs), Makhdoom Kund , peace pagoda, Vishwa Shanti Stupa,. Sri Ramakrishna Math, Rajgir Heritage Museum, Pandu pokhar ,. Son Bhandar Caves.

Vaishali is the birthplace of Lord Mahavira and Lord Buddha's enlightenment, believed to be world's 1st republic and an archeological site in India. Ashoka Pillar, Buddha Stupa, Kundalpur, Raj Vishal ka Garh, Coronation Tank, Buddhi Mai, Ramchaura, Vaishali Museum, World Peace Pagoda etc are tourist place. It's also famous for full of bananas, litchis, mango groves and rice fields. The remarkable Madhubani paintings, stone sculptures and local handicrafts are readily available here.

Valmiki National Park, Tiger Reserve and Wildlife Sanctuary is located at the India-Nepal border in the **West Champaran district** of Bihar, India on the bank of river Gandak.

Scientific Program

Day 1: Saturday, 31st October, 2020

Faculty Session

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TIME	TOPIC	SPEAKER	CHAIRPERSONS
2.45 PM	**WELCOME ADDRESS**		
3.00 - 3.45 PM	**SESSION 1: REVIEW IN PAEDIATRIC REHABILITATION** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
3.00 - 3.15 PM	Physiatrist's Management Of Hand Function In Child With Cerebral Palsy.	Dr. Feroz Khan	Dr. (Prof.) R. K Srivastava New Delhi Dr. Prem Anand Chennai
3.15 - 3.30 PM	Early Intervention In Developmental Disorders	Dr. (Prof.) Ritu Mazumdar	
3.30 - 3.45 PM	Early Intervention In A Newborn Child-Basis Of Actions	Dr. (Prof.) S Y Kothari	
3.45 - 4.30 PM	**SESSION 2: NEED OF COMMUNITY & TELEREHABILITATION** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
3.45 - 4.00 PM	Tele-Tools In Community Rehabilitation-Reaching The Unreached	Dr. Amit Ranjan	Dr. (Prof.) Diganta Borah Delhi Dr. Amit Chaitanya Ranchi
4.00 - 4.15 PM	The Experience Of Tele-Rehabilitation In COVID-19 Pandemic: Inputs From A Neurorehabilitation Desk From Bengal	Dr. Madhusree Sengupta	
4.15 - 4.30 PM	Setting Up And Execution Of Telemedicine Based Pulmonary Rehabilitation Program For Patients With COVID 19 Pneumonitis	Dr. Harshanand Popalwar	
4.30 - 5.45 PM	**SESSION 3: AN UPDATE ON NEUROREHABILITATION** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
4.30 - 4.45 PM	Recent Advances In Neurorehab In Acute Brain Injury	Dr. Abhishek Srivastava	Moderator: Dr. (Prof.) Henry Prakash CMC Vellore. Chairperson: Dr. Maheswarappa B. M Bengaluru Dr. (Prof.) George Tharion CMC Vellore
4.45 - 5.00 PM	Pharmacotherapy In TBI Rehabilitation	Dr. (Prof.) Anupam Gupta	
5.00 - 5.15 PM	Medical Issues In TBI Rehabilitation	Dr. Navin B P	
5.15 - 5.30 PM	Disorders Of Consciousness	Dr. Kurian Zacharia	
5.30 - 5.45 PM	Visual Perception and attention in Brain injury	Dr. Judy Ann John	
5.45 - 6.30 PM	**SESSION 4: SPECIAL INVITEE** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
5.45 - 6.00 PM	Obscurity to Enlightenment	Dr. (Prof.) U Singh	Dr. (Prof.) Ajit Kr Varma Patna Dr. (Prof.) Rajeshwari Jindal Jaipur
6.00 - 6.15 PM	Disability Etiquette	Dr. (Prof.) AK Joy Singh	
6.15 - 6.30 PM	Disability certification Procedure: Arbitrariness and solutions	Dr. (Prof.) S L Yadav	
6.30 - 7.30 PM	**SESSION 5: CURRENT CONCEPT OF MUSCULOSKELETAL & RHEUMATOLOGY REHAB** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
6.30 - 6.45 PM	Spasticity Revisited	Dr. (Prof.) Mrinal Joshi	Dr. (Prof.) Dilip Khatua Bankura Dr. T S Chellakumarasamy Erode
6.45 - 7.00 PM	Current Concepts In The Rehabilitation Of Osteoporosis	Dr. Anand Varma	
7.00 - 7.15 PM	Pragmatic Clinical Decision-Making Approaches For Assessment And Management Of Rotator Cuff Disorders	Dr. Nimish Mittal	
7.15 - 7.30 PM	Interventional Neurorehab: Beyond Comfort Zone	Dr. (Prof.) Rajesh Pramanik	
7.30 PM ONWARD	**CLOSING**		

Day 1: Saturday, 31st October, 2020

Award and Paper Session

www.streamtech.in/IAPMR-awards-and-Paper-Session

TIME	TOPIC	SPEAKER	CHAIRPERSONS
3.45 - 4.55 PM	**AWARD SESSION** (8 Min. Talk + 2 Min. Discussion, Question & Answer)		
3.45 - 3.55 PM	Impact of Spinal Cord Injury on Menstruation	Dr. Anit Catherine Charls 3rd Year PGT, St. John's Medical College, Bengaluru	Dr. P C Muralidharan Kozhikode Dr. Pabitra Sahoo Cuttack
3.55 - 4.05 PM	Study Of Efficacy Of Platelet Rich Plasma And Ultrasonographic Changes In Cartilage Thickness In Degenerative Osteoarthritis Knee	Dr. Deepthi S Johnson 3rd Year PGT VMMC, New Delhi	
4.05 - 4.15 PM	Recovery Following Rehabilitation In Post Covid-19 Associated Demyelination	Dr. M. Antony Judy 2nd Year PGT, St. John's Medical College, Bengaluru	
4.15 - 4.25 PM	A Hospital Based Comparative Study Of Axillary Nerve Conduction In Hemiplegic And Normal Shoulder	Dr. Mithlesh Goswami 3rd Year PGT SMS, Jaipur	
4.25 - 4.35 PM	Comparison Between Ultrasound Guided Autologous Bone marrow Aspirate Injection And Extracorporeal Shockwave Therapy In resistant Cases Of Lateral Epicondylitis : A Randomised Controlled Trial	Dr. Sreejith C 3rd Year PGT RIMS, Imphal	
4.35 - 4.45 PM	Challenges Faced In Rehabilitation Of A Person With Quadruple Amputation Following Electrocution	Dr. Jaya Das SR, JIPMER	
4.45 - 4.55 PM	Single Event Multi-Level Surgery In Cerebral Palsy	Dr. Divya Roy 3rd Year PGT PMCH, Patna	
4.55 - 5.10 PM	Comparison Between Fluoroscopy Guided Radiofrequency Ablation of Genicular Nerves and Intra Articular Injection of Methylprednisolone Acetate in Relieving Pain and Improving Function in Grade 3 and 4 Osteoarthritis of Knee: A Randomised Controlled Trial	Dr. Moirangthem Janet PGT, RIMS, Imphal	

Day 2: Sunday, 1st November, 2020

Faculty Session

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TIME	TOPIC	SPEAKER	CHAIRPERSONS
10.00 - 11.00 AM	**SESSION 1: NOTION IN PROSTHETIC–ORTHOTIC, ELECTROPHYSIOLOGY & DISABILITY** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
10.00 - 10.15 AM	Correlation of Pathophysiology of Motor units with EMG findings	Dr. (Prof.) Sreejith K	Dr. (Prof.) Gita Handa New Delhi Dr. Sumant K Singh Patna
10.15 - 10.30 AM	3D Printing In PMR	Dr. Rajkumar Yadav	
10.30 - 10.45 AM	Digital Therapeutics EMG Biofeedback - A Case Study Of Right Hand Focal Dystonia	Dr. S Sundar	
10.45 - 11.00 AM	A Review Of Physical Activity Guidelines And Their Importance In Able Bodied And Physically Impaired Individuals	Dr. Rohit Bhide	
11.00 AM-12.15 PM	**SESSION 2: CONCEPTUALIZATION IN SURGICAL REHABILITATION & INTERVENTION IN PHYSIATRY** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
11.00 - 11.15 AM	Ultrasound Guided Spine Interventions	Dr. Navita Vyas	Dr. (Prof.) A K Agarwal Lucknow Dr. (Prof.) Thirunavukkarasu P. Chennai
11.15 - 11.30 AM	Rehabilitation Management – Surgical Or Non-Surgical	Dr. (Prof.) Anil K Guar	
11.30 - 11.45 AM	Rehabilitation Surgery - A Need Of Time For Holistic Approach	Dr. Jagannath Sahoo	
11.45 AM - 12.00 PM	Foot Drop Basic Skill to Learn for Surgery	Dr. Arun Kumar	
12.00 - 12.15 PM	Need Of Revision Of Lower Limb Amputations In A North Indian Tertiary Care Centre	Dr. Dileep Kumar	
12.15 - 1.15 PM	**SESSION 3: PMR PERSPECTIVE ON COVID-19 PANDEMIC** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
12.15 - 12.30 PM	Covid 19 Physical Activity & Exercise - PMR Perspective	Dr. (Prof.) Sanjay Wadhwa	Dr. (Prof.) George Joseph N Kochi Dr. (Prof.) Nilachandra Longjam Manipur
12.30 - 12.45 PM	Role Of Pulmonary Rehabilitation During COVID-19 Pandemic: An Indian Perspective	Dr. Harleen Uppal	
12.45 - 1.00 PM	Challenges To COVID Rehabilitation In A Private Hospital	Dr. Koustubh Chakraborty	
1.00 - 1.15 PM	Effect Of Covid-19 Pandemic On Health Care Professionals Due To Lack Of General Physical Exercises	Dr. Tuffail Mujaffar	
1.15 - 2.00 PM	**SESSION 4: PMR POINT OF VIEW** (13 Min. Talk + 2 Min. Discussion, Question & Answer)		
1.15 - 1.30 PM	Hyper Mobility: An Adjuvant Assessment In Management Of Joint Pain	Dr. Ravi Gaur	Dr. (Prof.) Anil Kumar Gupta Lucknow Dr. Ratnesh Kumar Patna
1.30 - 1.45 PM	Ophthalmoscopy As An Additional Skill Set In Neurological, Geriatric And Rheumatological Rehabilitation	Dr. Jaydeep Nandi	
1.45 - 2.00 PM	Artificial Intelligence in Disability Certification: Need of the Hour	Dr. Abhimanyu Vasudeva	
2.00 PM ONWARD	**CLOSING CEREMONY**		

Day 2: Sunday, 1st November, 2020

Award and Paper Session

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TIME	TOPIC	SPEAKER	CHAIRPERSONS
11.45 AM-12.27 PM	**SESSION 1: FREE PAPER** (6 Min. Talk + 1 Min. Discussion, Question & Answer)		
11.45 - 11.52 AM	A Randomized Case Control Study Of Autologous Platelet Rich Plasma And Normal Saline Dressing In The Management Of Pressure Sore In Spinal Cord Injury Patients.	Dr. Rajesh Kumar Meena 3rd year PGT SMS, Jaipur	Dr. (Prof.) S L Yadav New Delhi Dr. Ameed Equebal Kolkata
11.52 - 11.59 AM	A Randomized Control Study Of Subcutaneous Administration Of Teriparatide And Denosumab In Postmenopausal Osteoporosis	Dr. Prasenjit Das 3rd Year PGT SMS, Jaipur	
11.59 AM - 12.06 PM	Suprascapular Nerve Block An "Invincible Weapon" For Adhesive Capsulitis Shoulder	Dr. Rajeev Ranjan Sinha 2nd Year PGT PMCH, Patna	
12.06 - 12.13 PM	Retrospective Study Of Post-Hansen Hand Deformity. Reconstructive Surgery And Its Rehabilitation	Dr. Santosh Kumar 2nd Year PGT PMCH, Patna	
12.13 - 12.20 PM	A Study Of Cardiac Autonomic Dysfunction In Patients With Acquired Brain Injury	Dr. Ijaz N Pillai 3rd Year PGT, St. John's Medical College, Bengaluru	
12.20 - 12.27 PM	Deep Vein Thrombosis A Rare Complication In Haemophilia A Disease	Dr. Jainy John 2nd Year PGT, St. John's Medical College, Bengaluru	

Day 2: Sunday, 1st November, 2020

Award and Paper Session

www.streamtech.in/IAPMR-awards-and-Paper-Session

TIME	TOPIC	SPEAKER	CHAIRPERSONS
12.34 - 1.16 PM	**SESSION 2: FREE PAPER** (6 Min. Talk + 1 Min. Discussion, Question & Answer)		
12.34 - 12.41 PM	Comparison Between Thumb Abduction Orthosis Versus Methylprednisolone Injection In Relieving Pain And Improvement Of Function In De Quervain's Disease	Dr. Shanavas Anoth Meethal 2nd Year PGT RIMS, Imphal	Dr. Navin Kumar Puducherry Dr. Ravi Narayan Sinha Patna
12.41 - 12.48 PM	A Study Of Correlation Of Lower Limb Spasticity With Anthropometrics And Bone Mineral Density In Chronic Motor Complete Spinal Cord Injury Individuals	Dr. Amit Batra SR, SMS, Jaipur	
12.48 - 12.55 PM	A Preliminary Report Of An Observational Study To Find Out Independent Predictors Of Low Testosterone Level Among Male Patients With Chronic Spinal Cord Injury	Dr. Anil Kumar Sharma 2nd Year PGT SMS, Jaipur	
12.55 - 1.02 PM	Caudal Epidural Steroid Injection (CESI) in Backache Sciatica Syndrome	Dr. Anima Verma PGT PMCH, Patna	
1.02 - 1.09 PM	Unusual Presentation Of COVID-19 Sequelae with multiple rounded brain lesions with neurological deficits and its rehabilitation	Dr. Anindya Devnath 1st Year PGT, St. John's Medical College, Bengaluru	
1.09 - 1.16 PM	To compare the efficacy of Ultrasound guided pulse radiofrequency ablation and Bupivacaine block of Suprascapular nerve in reduction of pain and disability in hemiplegic shoulder pain	Dr. Chandrakant Pilania SR, AIIMS, Raipur	

Click here to register

https://www.iapmrmidterm2020.com/registration/

Last Date of Registration : 28th October 2020

For inadequate response in NeP

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Dr. U Singh
Prof. and Head
PMR, AIIMS
New Delhi

Obscurity to Enlightenment

While sitting in the out-patients, quite a number of patients come where the diagnosis is mostly glaring at you. Most of us come across patients having problems in the knee joints, weakness of one part of the body, difficulty in walking or pain in a particular region. It is the duty of the attending physician to appropriately diagnose and manage the patients. At times, the usual treatment does not give relief and the patients keep on lingering with the issues. A few such case studies are presented where the patients appeared to be suffering from a disorder commonly seen in out OPDs but were found out to be suffering from something less obvious. The purpose of this talk is to emphasize that the doctor attending the OPD should continue to do a thorough history and physical examination and also exercise in his/her mind the differential diagnosis before arriving at conclusions. In a busy OPD at times it may not be possible but is warranted.

Dr. U Singh
Prof. and Head, PMR, AIIMS,
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Disability Certification Procedure: Arbitrariness and Solutions

Yadav SL[1],Vasudeva A[2], Sahu S[3], Sheikh NA[4], Yadav A[5], Gupta S[6]

This narrative reviewis intended to address common problems faced by Persons with Disability. Disability Certificates are issued by Doctors, most of whom are not well-versed with the legal implications of issuing such certificates. The Persons with Disability (PWD's) get issued certificates that get entangled in the legal system due to arbitrariness in the compensation received which is being discussed in the paper. Persons with Disability need to approach Claims Tribunals' to seek compensation. The courts assess functional disability to arrive at a just sum to compensate the disabled person. This process has many shortcomings, that have been discussed in detail. Solutions for a fairer process is being proposed. Functional Disability assessment at the level of courts is more in line with the Bolitho system. Changes discussed in the paper are in consonance with the right mix of Bolam and Bolitho.

Keywords: Disability Certificate, Legal, Bolam and Bolitho

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Dr. S. Y. Kothari
M.B.B.S., M.S.(Ortho.), D.N.B.(PMR)
Professor, Dept. of PMR
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Basic Concepts of Early Intervention

I will be presenting what is normal child at birth, how to evaluate, what to plan and why.

What interventions are needed and why "Early".

How the interventions act and bring about improvement in functional status, what are the mechanisms in brain and what are the mechanisms behind this activity.

How to decide proper expectations post intervention and remedial actions.

Dr. S. Y. Kothari
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Professor of PMR at AIIMS Bhopal

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Management of Hand Functions in Cerebral Palsy - Physiatrist's perspective

Hands perform variety of function because of wide neuronal mapping in motor areas. Cerebral Palsy (CP) children present with thumb in palm, flexion in fingers and wrist, pronated forearm and one handedness before twelve months. Assessment includes passive and active ROM, movement types, contractures, tone abnormalities, functional potential and the overall examination of trunk and lower limbs. It is difficult to use standard evaluation test for functional activities due to associated cognitive issues. Useful observations are grasp, reach, placement and release, ability to manipulate cubes for single hand and holding a jar for bimanual activities. Stable trunk will complement better hand functions and strong hand will help a weak trunk. General principles include increasing as much sensory input to generate motor functions, encouraging motor activities, minimal splinting, encouraging bimanual activities crossing midline and cognitive inputs, and teaching simple new skill as early intervention. Specifically Diplegics need strong upper limbs to use mobility aids, quadriplegics need training to crawl and self help skills, athetoid and ataxic children need good visual input and relaxation techniques for ADL. Hemiplegics need good trunk rotation skills, bimanual activities like swimming and hypotonic and variable type need splinting and stability exercises. Intervention with Botox should be reserved for older children with GMFC 2 and 3 but improvement in fine motor skills are doubtful. Surgery will improve alignment and function and cosmetic appearance with skilled approach. Parental consent and prolonged team work are needed for good functional outcomes.

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Early intervention in developmental disorders

Early intervention defined as child oriented training activities & parent oriented guidance activities which are implemented after identification of the developmental condition. It involves interaction of child, parents, family, society & environment.

Early intervention should be provided to all children who are subjected to developmental risk or developmental disability when delay is found in one or more of the following fields: Gross motor development, fine motor development, sensory perception, cognition, communication & adaptive behavior (social & self care skills)

It starts from the period of earliest possible identification & detection upto the moment of training & guidance (generally till 3 years of life or below the age of starting formal education).

As a specialist in Physical Medicine & Rehabilitation, it is important to know about different causes of developmental delay, timely identification & basics of early intervention in these cases.

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Recent Advances in Neurorehab in Acute Traumatic Brain Injury

Traumatic brain injury (TBI) is a major cause of mortality and disability worldwide. Loss of consciousness is the most devastating consequence of brain damage. With the significant improvement in critical care we are able to save many lives in the initial stage but leads to large number of patients still in vegetative state. This is huge burden on the health care system. Physician supervised, comprehensive, multidisciplinary neurorehabilitation interventions if started early, can significantly alter the disease course and lead to significantly improved neurological and functional outcome. The principle for neurological recovery and rehabilitation interventions is neuroplasticity i.e. the ability to of the brain to reorganize in response to the new challenge. The Management consists of multimodality sensory stimulation program, pharmacotherapy for arousal, cognitive and linguistic functions, non invasive brain stimulation, hyperbaric oxygen therapy for reducing edema and improving arousal, robotic assisted gait training to initiate early stepping, cognitive stimulation, swallow therapy with timely decanulation, and neurodevelopmental therapy..

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Pharmacotherapy in Rehabilitation of Patients with Traumatic Brain Injury

The consequences of Traumatic Brain Injury (TBI) can be severe & permanently change a person's life, resulting in considerable disability & handicap of the patient, loss of income, family disruption, earning potential, & considerable expense over a life time. The incidence of TBI peaks in the age group of 15-35 years & is much more common in males (M:F ratio, 3-4:1). Brain injuries are extremely common in these patients of road traffic accidents. Fortunately majority of the patients acquire mild head injury (70-80%) with no/ mild long term consequences. 20-30% patients acquire moderate & 5-10% acquire severe head injury with severe physical, cognitive & behavioral consequences.

Pharmacotherapy plays an important role in recovery and rehabilitation of TBI patients irrespective of severity of injury. Up to 40% of the patients with moderate to severe TBI have long term disability with some of them permanent in nature. Pharmacotherapy helps in preventing secondary complications, resuscitation, rehabilitation and recovery of the patients and, is common and almost integral part of customized multi-disciplinary rehabilitation of these patients. As most of patients have more than one domain affected as a result of TBI, polypharmacy may be required to treat/ rehabilitate them. The common domains where the medications are required could be cognitive domain like memory disturbances, attention impairments and other executive dysfunction. Psychiatric & behavioral disturbances like mood disorders, agitation & organic psychosis. Motor issues like weakness, spasticity, rigidity, dystonia and incoordination are also treated with.

The goal is to help the personachieve maximum degree of return to their previouslevel of functioning. Pharmacotherapyis provided since the very beginning when the patient is in ICU with close monitoring. Despite multi-disciplinary rehabilitation, the long term prognosis in moderate & severe head injury patients is unpredictable and varies according to age, gender, type & severity of injury, treatment given (or delay) in the immediate post injury period.

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Medical issues in rehabilitation of traumatic brain injury

The severity of traumatic brain injury (TBI) is assessed commonly with the Glasgow Coma Scale. The Rachos Levels of Cognitive Functioning Scale, is used widely to describe the cognitive recovery from coma to consciousness. Nutritional needs following TBI has to assessed for each individual and a plan to meet these requirements has to be made. The prophylaxis for seizures following TBI has been recommended for a period of 7 days. In individuals who require long term use of anti-epileptic medication, the side-effects of these drugs which includes their effect on cognitive recovery must be monitored during subsequent visits for rehabilitation. A computed tomography scan of brain is recommended for initial evaluation of normal pressure hydrocephalus, as it is a treatable complication following TBI, early identification is necessary. Spasticity occurs commonly following TBI, both pharmacological and non pharmacological methods are used for optimal management of spasticity. It is important to identify contractures at an early stage. Heterotopic ossification can occur following TBI, a bone scan can aid in early identification. Deep venous thrombosis can occur following TBI and it can lead to mortality or severe morbidity. The duration of prophylaxis for deep venous thrombosis is not well defined in TBI. Neuroendocrine disorders occur in a significant number of people with TBI, evaluation and management can be done in consultation with endocrinologist. Neuropsychiatric disturbances following TBI include cognitive dysfunction, neuro-behavioural changes, sensory disruptions, somatic symptoms and substance dependence. Cognitive rehabilitation following TBI can be divided into remidiative or compensatory methods. A multidisciplinary team approach is ideal to achieve the goal of improving functional independence following TBI.

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Disorders of Consciousness…our present understanding

Disorders of consciousness (DOC) are altered states of pathological consciousness. Initially the stages included only coma, vegetative state & minimally conscious state. Over the decades as our understanding increased, these states were further subdivided based on behavioural assessment scales, imagining and EEG studies.The differentiation of the states became important becausethe prognosis for each state was different. These subdivisions are now clearly defined and tell when a person has moved from one to the next stage. The quintessential pathology in DOC is severe bilateral degeneration of the thalamus and grade 2 & 3 diffuse axonal injury. The JFK Coma Recovery Scale-Revised(2004) is a standardized rating scale that is currently the recommended scale because of its sensitivity and validity. In a randomized, placebo controlled study, Amantadine improved functional recovery in patients with DOC. Other treatmentsincludes both pharmacologic and non-pharmacologic interventions. Non-pharmacologic treatment strategies include sensory stimulation and neuro-modulation(trans-cranial direct current stimulation and trans-cranial magnetic stimulation).In the midst of all these advances in rehabilitation, taking time to carefully and with sensitivity explain the prognosis to the family members still is the centre-stage of managing patients with DOC.Over the years as our ability to tenaciously hold onto life increases, disturbing ethical issues crop up more and more often. Lastly, bearing in mind all the above-mentioned complexities, a framework for a rational approach to managing a patient within a DOC state is presented.

Regards
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Visual Perception and Attention in Brain Injury

Introduction

Diffuse axonal injury (DAI) results from the sheer forces in traumatic brain injury (1 to 6hours post trauma) and due to the secondary damage of the axons from the biochemical cascade that takes place subsequently. This presents clinically as decreased level of consciousness from impairment of the reticular activating system in the acute phase of the injury and as cognitive impairments during the chronic phase of recovery.

An understanding of the neurocognitive pathway of perception and attention forms the building blocks for the assessment and management of cognitive sequelae in DAI. Mesulam in 1990 paved the way for this by enunciating, Core brain networksareanatomically distinct, large scale brain systems with definite cognitive function.

Visual attention and recognition network

Vision remains the central system for the integration of information processing mechanism for selective and voluntary aspects of attention.Orientation in the visual system takes place with the coordinated activity of the Superior Colliculus, Pulvinar nucleus, Frontal eye field and the Posterior Parietal cortex. The primary connecting pathway between the two hemispheres is the corpus callosum which often bears the brunt of damage in DAI. The posterior third of the corpus callosum transfers almost all the visual information processed in the occipital, parietal and temporal cortices to the opposite hemisphere. The Dorsal (Occipitoparietal) pathway processes information related to the spatial aspects of vision (the 'where'or the 'how' stream), the Ventral(Occipitotemporal) pathway processes information for colour, object, face and word recognition (the 'what'stream).

Clinical significance

The right side of the brainis dominant in directing attention to motivationally and relevant parts of the extrapersonal space. Hence, left sided neglect is commonly seen with injury to right inferior parietal lobule and its connections to the frontal and temporal lobes through the arcuate fasciculus and superior longitudinal fasciculus. Patients with lesions of the precuneus and superior parietal lobe and its connections to occipital lobepresent with impaired coordination of limbs (optic ataxia)due to loss of visually guided action and navigation resulting in incoordinationof the hand when reaching for an object or writing and ataxic gait.

Disorders of the ventral stream present with achromatopsia, prosopagnosia, visual object agnosia, alexia. Hyperfunctioning of these can result in facial hallucinations and illusions. Understanding the clinico-anatomical correlation of neurocognitive functional pathways will facilitate the development of treatment modalities in reducing the long-term cognitive sequelae in brain injury.

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Rehabilitation Management – Surgical or Non-surgical

Physical Medicine and Rehabilitation is a non-surgical speciality in many countries. Why surgery is not included in PMR in those countries, is a topic of debate. All PMR specialists find in their practice that there are many patients for whom the conservative rehabilitation process is either minimally effective or gets stuck at a level from where no further functional recovery can be achieved. Proponents of non-surgical PMR say that they have enough to do when it comes to rehabilitation management of a patient. In some departments of PMR, non-surgical interventions are considered replacement of surgeries when it comes to improving or creating image of PMR specialists and differentiating it from the lot of professionals that participate in the rehabilitation process more actively than the PMR specialists. The patients always give credit to anybody who makes the improvement to happen and not the leader that has, in his view, made little contribution due to minimal direct involvement in the improvement process. If PMR specialists want to show the best outcome of rehabilitation management, it is required to use appropriate management methods, that may be conservative, non-surgical interventional, surgical or a combination of these. The presentation focuses on a few cases, that if had been managed by inappropriate or inadequate methods the results might have been very different and perhaps not satisfactory for both the physiatrists and the patients. It also focuses on the importance of decision making in rehabilitation management of a person emphasising the importance of surgeries in the rehabilitation processes.

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Rehabilitation Surgery- A need of time for holistic approach

Physical medicine and rehabilitation is a Branch of medicine emphasising preventiondiagnosis, and treatment of disorders – particularly related to nerves, muscles, and bones – that may produce temporary or permanent impairment. The Rehabilitative medicine is an integral part of health system like preventive medicine and curative medicine. This branch deals with disability by multidisciplinary approach irrespective of aetiology. The basic structure of the branch is to develop and adopt the functional ability to lead a normal life.

All sections like pharmacotherapy, occupational therapy, physiotherapy, speech therapy and prosthetic-orthotics etc. are integrated for rehabilitation. The disable person needs some intervention for their complete rehabilitation along with the above mentioned activity.

As per need of the time , every system of management and discipline are growing with addition of advanced methodology. Keeping in view of the above fact ,the growth of the PMR should be an essential part along with basic facility. Intervention from basic level to advanced level should be practiced to brought back the holistic rehabilitation . As per the need of society and Indian health system surgical intervention is absolutely necessary for complete holistic rehabilitation. Here some are the basic surgical exposures will be demonstrated for managing the disability .

We should take care following few lines to start with surgical rehabilitation.

The infrastructures are Operation Theatre room (OT), Scrub room adjacent to OT, OT table, Anaesthesia work station , OT light and basic instrument sets etc. Manpower like OT technicians, OT nurses & attendants along with anaesthetists are required for functioning of an Operation theatre.

Cases like Equines foot, Spastic CP, PPRP, CTEV, SCI with deformity ,Bed sores, revision amputation etc require surgical intervention for complete rehabilitation. The rehabilitation remains as an incomplete process without correction of these problems.

Surgical intervention is the need of time when we plan for holistic rehabilitation and it should reintegrated with the rehabilitation process like other sections.

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Tibialis Posterior Tendon Transfer towards rehabilitating foot drop patients

Deformities and disabilities are typically seen in leprosy patients affecting both upper and lower limbs. Foot drop is a clinical manifestation characterized by loss of ankle dorsirlexion and inversion. Foot drop is characterized by high stoppage gait and toe drag. Besides the physical modalities that are given like therapeutic exercises, massage and Orthotic devices to the patient, dynamic surgical procedures like transfer of suitable muscles to achieve the desired dorsiflexion is also indicated. Tibialis posterior muscles is active in foot drop and suitable for transfer. However, strengthening of the tibialis posterior is a primary step for the success of the operative procedure. However what is more important is to emphasize that a vigorous preoperative and post operative exercise therapy is essential step in the tendon transfer program. Places where suitable rehab services are not available, they should not undertake the procedure other were it will prove disastrous. Thus the physiatrist has to ensure that the aim to achieve, "Heel to Toe Gait" pattern is attained.

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NEED OF REVISION OF LOWER LIMB AMPUTATIONS IN A NORTH INDIAN TERTIARY CARE CENTRE

D Kumar, S Singh, K Shantanu, R Goyal, N S Kushwaha, A K Gupta, VP Sharma, V Sharma

Amputation is defined as surgical removal or loss of extremity or part of extremity due some underlying disease or trauma. Lower extremity amputation is one of the oldest surgical procedures in the history of medical science. Bad stumps may delay prostheses fitting and rehabilitation or may confine patients to wheelchairs. Although prosthetic science advancement in last few years have made possible the prosthesis fitting even in sub- optimal stumps, still revisions of initially amputated limbs are needed very commonly which are carried out at a higher level than the initial amputation many of the times. The objective of this study was to establish the causes for revision amputations, identify preventable causes and to asses prosthetic rehabilitation. We concluded that Revision amputation increases morbidity. Poor stump formation at the time of initial amputation and infection are the most common indication for revision surgery. These are the preventable causes and every effort should be made to alleviate these as well as other preventable causes.

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Covid-19 : Physical Activity and Exercise - PMR Perspective

Although initially COVID-19 was thought to be primarily a respiratory illness, COVID-19 is now being considered a 'multisystem disease'. It can damage lungs and many other organs, adversely affect the body's blood-clotting mechanisms and cause lingering systemic inflammation and fatigue. As a new disease, the landscape around COVID-19 has been changing rapidly.

The illness severity pattern so far observed is as follows (1):

1. Asymptomatic infected patients.
2. Symptomatic patients isolating at home.
3. Symptomatic patients admitted to hospital.
4. Symptomatic patients requiring ventilatory support in critical care.

Everyone is unique and this disease affects everyone uniquely and can affect a part or the whole body in different ways, so there is no absolute algorithm for resuming activity.

In a study published in JAMA Cardiology (2), cardiac MRI testing on 100 adults who had recovered from COVID-19 revealed that about half of them had mild to moderate symptoms and 18 percent never had any symptoms. Though the testing was performed two to three months after their diagnosis and none of them had experienced heart symptoms related to the new coronavirus, 78 of them had structural changes to their hearts, and 60 had myocarditis.

When and how to safely resume physical activity and exercise after COVID-19? This is a common question in front of PMR specialists.

As such, it is generally recommended to avoid exercise training during active infection. (3-6)

People who have had COVID-19 should be followed closely, especially in the first three to six months as they return to regular physical activity and exercise programs.

Individuals who had respiratory symptoms like pneumonia - rest for at least a week after symptoms subside, gradually returning to physical activity with an emphasis on monitoring their breathing.

Individuals who had musculoskeletal symptoms like joint and muscle pain - a gradual return to exercise before they go back to their pre-COVID-19 workouts.

Individuals who have had cardiac, or heart, symptoms - rest for around 2 to 3 weeks after the symptoms stop.

Individuals who have myocarditis, or inflammation of the heart - wait as much as 3 to 6 months before returning to some form of an exercise regimen.

Individuals with the gastrointestinal effects of COVID-19 - keep tabs of their fluid and calorie intake while easing into their fitness patterns.

Individuals who have hematologic or blood symptoms - start with low-intensity exercises and less sedentary behaviour that will reduce blood clot risks.

What about those who had no known symptoms at all?

Experts recommend that they should still gradually return to exercise. If there are no known symptoms for a full week, they can return to physical activity at 50 percent of their usual intensity.

When resuming physical activities and exercises for fitness after some time away on account of Covid-19, one good rule to think about is to phase in fitness gradually on a week-to-week basis.

Even athletes who have recovered from COVID-19 are finding initial workouts to be challenging. Athletes are used to bouncing back from a cold or the flu, and the slow trajectory of COVID-19 recovery can be frustrating. (7) Sports medicine physicians at the Hospital for Special Surgery (HSS) Sports Medicine Institute in New York City have developed the first set of guidelines (8) for helping patients return to recreational activity safely after mild to moderate infection with COVID-19. The guidelines provide a framework of considerations and recommendations based on the latest evidence regarding how COVID-19 affects different body systems.

The guidelines recommend patients with COVID-19 should not resume exercise if they still have COVID-19 related symptoms. Those with an underlying cardiovascular or pulmonary condition should consult with their doctors before returning to any physical activity, even if COVID-19 symptoms have resolved.

Otherwise healthy patients who had mild or moderate COVID-19 and have not had symptoms for seven days may consider resuming physical activity by starting at 50 percent of their usual frequency and intensity. They should approach their return to exercise in a gradual, stepwise fashion, listen to their bodies, and speak with their healthcare providers if they develop chest pain, fever, palpitations or shortness of breath.

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Role of Pulmonary Rehabilitation during COVID-19 pandemic: An Indian Perspective

As more and more people are recovering from COVID-19, and virulence of Coronavirus is decreasing, the rehabilitation community is bracing up for a new pandemic of COVID-19 survivors. These survivors are expected to present with respiratory, physical as well as psychological sequelae. This article attempts to potray recommendations for pulmonary rehabilitation of COVID-19 patients, specifically for Indian setting and these might also be useful for other developing nations. These havebeen formulated after reviewing variousguidelines and clinical practice recommendations available for other countries. Pulmonary rehabilitation comprises of nutrition, exercise, airway clearance techniques, breathing retraining, psychological support, oxygen supplementation, posture care. In cases of acute COVID-19, pulmonary rehabilitation should be undertaken whenever it is safe and possible, through telerehabilitation. All patients in the phase of post acute hospitalization should undergo mandatory pulmonary rehabilitation either through telerehabilitation or outpatient rehabilitation.

Keywords: Pulmonary Rehabilitation, COVID-19, SARS-CoV-2, Respiratory Rehabilitation, Telerehabilitation.

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Challenges to COVID Rehabilitation in a private hospital.

Nearly all healthcare facilities have dedicated some inpatient & Critical Care beds for COVID patients. With incessant admissions occurring, the onus falls upon the Physiatrists to maximise the outcome at discharge, wean patients off oxygen-delivery modalities, and ensure a faster bed turnover. Rehabilitation for acutely-ill COVID inpatients can either be necessary for primarily Respiratory issues, Neuro-Musculoskeletal issues with incidental COVID positivity, or some COVID complications like Stroke or Transverse Myelitis. The Inpatient Rehabilitation in the COVID ward however, differs a lot from non-COVID wards, posing several challenges. Prime amongst them is the training of staff for proper donning-doffing of the PPE, and subsequent hand-washing. A lot of Research & Development in PPE design are necessary to make them ergonomically fit for prolonged wearing, or performing highly-preside medical procedures, by preventing the huge build-up of heat and sweat is inside, and the fogging of the face shield or visor. Not more than 3 patients can be attended by a therapist donning 1 PPE currently, and the arbitrary cap by the government on the maximum PPE chargeable per day has limited the number of physiotherapy sessions to once-daily. Also, with a limited time per patient encounter, documenting the patients condition as per any complex questionnaire cannot be done, leading us to design a simple, easily recallable outcome measure profile. No home-visits by a Physiotherapist can be done for at least a week after discharge, so self-exercise and activity regimen is stressed upon. Electrotherapy too cannot be done in patient rooms for want of clear manufacturer guidelines for sterilisation. Our approach within these limitations have achieved a fair success.

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Effect of Covid -19 pandemic on health care professionals due to lack of general physical exercises

BACKGROUND: Imbalance between individual resources and work demands can lead to musculoskeletal disorders and reduced work ability. The purpose of this study was to investigate the effect of lack of physical exercise during COVID crises on work ability among healthcare workers.

METHODS: A cross sectional study was conducted on 100 health workers from different departments of teretiary care institute. A questionnaire about the effect of covid 19 pandemic on their general health and work ability was sent via emails and whatsapp messages.

RESULT: significant decline in the working capacity and general health were noted by comparing different parameters like weight, BMI, general assessment score, work ability index and the worsening of co morbidities.

CONCLUSIONS: The lack of exercise due to isolation and general lockdown as well as stressful work schedule during the pandemic, the overall health of health workers has been affected significantly hence affecting their working capacity and general life

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Correlation of pathophysiology of motor units with EMG findings.

EMG is an important tool for Physiatrists in diagnosing and managing a neuromuscular condition. Characteristics of MUAPs are studied by doing an EMG. A thorough understanding of underlying pathophysiology enables the electromyographer to gather additional clinical information.

A motor unit consists of single anterior horn cell, ventral root, peripheral axon, terminal branches, myoneural junction and multiple muscle fibres. Muscle fibres innervated by a single axon are not contiguous, actually they are spread out and are interdigitated with muscle fibres of other motor units or a field that ranged from 5-10mm. In this lecture I am trying to explain the morphology and firing characteristics of motor units depending on the severity and duration of injury.

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3D Printing and Orthosis and Prosthesis

The conventional method of orthosis and prosthesis fabrication is quite labor intensive. The location and thickness of build-ups to modify the positive plaster or foam molds are based on the initial examination and experience of the technician, and thus there is high subjectivity. The process is also wasteful of material, as the plaster molds and excess fabrication materials are destroyed during fabrication. Should another mold be required due to the inevitable changes in the residual limb, the entire labor intensive process has to be repeated with wastage of materials.

Computer aided designing (CAD) and Computer aided manufacturing (CAM) are now widely used for limiting the shortcomings of the conventional method of fabrication. Scanning is used to create an image of the positive model. This image/data is rectified with computer software. This information is exported to the CAM unit, which carves different blocks to produce custom orthosis or prosthesis. This subtractive method produces a lot of noise and vibration during fabrication and generates a significant amount of waste material. Also, the precision of the machine is relatively poor.

Recently, additive manufacturinghas been used for fabricating orthosis and prosthesis.

Additive manufacturing, more commonly known as 3 D printing, was developed by Charles Hull in 1986. It involves printing successive layers on top of each othergenerating complex prototype parts of plastics and metals. It's being used in various industries like construction, prototyping and biomechanical for producing rapid and highly durable parts.

Methods of 3 D printing:

1. Fused deposition modeling
2. Inkjet printing and contour crafting
3. Stereolithography
4. Powder bed fusion
5. Direct energy deposition
6. Laminated object manufacturing

Materials used in 3 D printing:

1. Metal and alloys
2. Polymers and composites
3. Ceramics
4. Concrete

Worldwide many 3 D printers have been used for fabricating various foot orthosis, ankle foot orthosis and prosthetic sockets with good fit and adequate strength. For additive manufacturing of these, firstly the limb is digitized using a 3D Data Acquisition System, then the geometry is modified using a CAD software, and finally, the product is fabricated by Selective LASER Sintering(SLS) technology.

Further, the technology is also being used in producing models for medical teaching, producing biomedical tissues and implants to be used in difficult surgeries. Although this 3 D Printing is a very promising technology in the medical field, its high cost and requirement of high technical expertise hasled to limited applicability at present.

At the Department of Physical Medicine and Rehabilitation (PMR), AIIMS Rishikesh, Artec Eva Scanner is used for scanning the body parts. It is a professional 3D scanner that can capture medium-sized objects, such as arms, legs, and the human body by using safe-to-use structured light scanning technology. Its point accuracy is up to 0.1 mm. It is light, fast and can compensate for any small movements. It will create high-quality 3D models suitable for export to CAD and 3D printing.

Geomagic Freeform software is used to modify 3 D models by handling a touch haptic device. Touch Haptic device is a motorized device that gives force feedback on the users' hands. It allows users to feel the 3 D object virtually as they manipulate the object on a computer screen.

Digital data of the final product is then shared with ProX SLS 6100 printer. It has Material Quality Control Machine, Bleed Blaster, Compressors, Compressor Tanks, Dryer, Nitrogen Generator, and Tank as its subunits. The selective laser sintering (SLS) method is used to print the desired orthotic and prosthetic devices. The material used is Dura Form Pro x PA (Nylon 12), as it has the desired mechanical properties. It can build a size of 15x13x18 inches3 and has a high production speed of 2.7 L/hour.

Till now, we have used it to fabricate many Ankle Foot Orthosis (AFO), Wrist Hand Orthosis (WHO), spinal brace, prosthetic socket and extension prosthesis. A recent feedback survey conducted on patients showed that they are mostly satisfied with their products in terms of size and weight, ease in donning and doffing, its effectiveness, durability and safety.

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DIGITAL THERAPEUTICS (DTX) EMG BIOFEEDBACK – A CASE STUDY OF RIGHT HAND FOCAL DYSTONIA

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Digital therapeutics (JOGO EMG BIOFEEDBACK) involving surface electromyographic biofeedback is an innovative treatment that uses sensory inputs to facilitate neuromuscular retraining.

Combining EMG BF sensors and a gamified visual representation of muscular activity with conventional therapy (CT), improves the motor abilities of a patient with focal dystonia through immediate feedback of muscular activity and neuroplasticity. The EMG BIOFEEDBACK device's engaging patient interface utilizes features such as mobile gamification to increase patient compliance relative to CT, amplifying clinical outcomes. The patient had involuntary movements in his right hand and received EMG BIOFEEDBACK once a weekand conventional integrated therapy sessions three times a week, over three months. It was observed thatEMG BIOFEEDBACK facilitated and improved muscle control in the patient's right wrist extensors.

Evaluations initial and 4weeks post: The patient's resting potential in his right wrist extensors decreased from over 40 mvs to 17 mvs. The patient's ability to hold a pen increased from 10 seconds to 70-100 seconds. EMG BIOFEEDBACK EMG BF helped improve grasp strength in the patient's right hand and decreased the frequency of involuntary movements. EMG BIOFEEDBACK 's proficiency in rewiring the patient's neuralcircuitry enabled him to adequately reduce involuntary movements in the right hand. In addition to portability and cost-effectiveness, EMG BIOFEEDBACK 's user-orientated interface optimizes rehabilitation by allowing the patient to experience visual control over their neuromuscular junctions. Further studies are in progress to evaluate the efficacy of EMG BF integrated rehabilitation.

Keywords: Dystonia, focal dystonia, biofeedback, EMG , wrist extensors, NDT

Themes: AN UPDATE ON NEUROREHABILITATION

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A Review of Physical Activity Guidelines and Their Importance In Able Bodied And Physically Impaired Individuals.

Ongoingadvances in technology and smart living have madethe modern lifestyle increasingly sofa-centric. Never has been the importance of physical activity in our daily life been more relevant than during the last few months of the Covid-19 pandemic and lockdown. This presentation will provide an overview of the existing literature on the importance of physical activity and its beneficial role in reducing morbidity and mortality from various causes. It will highlight the documented benefits, not only in able-bodied individuals, but also in people with various physical impairments. The presentation will also cover the impact of Covid-19 pandemic on the ability to engage in regular physical activities and how communities/individuals have navigated through this problem to ensure optimal health. Finally, the presentation will provide some useful resources/tools for delegates to introduce this concept to their patients during their consultations.

Keywords: Physical Activity, Exercise, Fitness, Impairment, Co-morbidities, Covid-19 (maximum 6 words)

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"Hypermobility: an adjuvant assessment in management of joint pain"

Joint hyper mobility is simply the ability of a person to extend his/ her joints easily and painlessly beyond the normal range of motion. Hypermobility of the joints occurs when the tissues holding a joint together, mainly ligaments and the joint capsule, are too loose. Often, weak muscles around the joint also contribute to hypermobility.

Sometimes while assessing such patients in routine OPD; we miss out on the reasons of their actual conditions. People with joint hyper mobility are often engaged in versatile sports like athlete, gymnast, some are good dancers, and many more playful activities as they can perform better than their normal competitors. At the same time while performing MRI their joints and Spine show poor presentations.

Adding a balanced life style and properly planning for the management of current condition is necessary to prevent recurrent injury and loss of career.

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Opthalmoscopy as an additional skill set in Neurological, Geriatric and Rheumatological Rehabilitation

Opthalmoscopy can be an useful additional skill set for the practising PMR Specialist. It can augment clinical diagnosis, prognostication capacity and clinical management of some common neurological, geriatric and rheumatological conditions encountered in day to day PMR practice.

Neuro-rehab: Increased intra-cranial pressure (ICP) can be a devastating but silent complication in a myriad of neurological conditions. A benign looking headache or even a solitary peripheral weakness or numbness may harbour a brain SOL associated with increased ICP. Intracranial hemorrhage and resultant raised ICP may complicate malignant hypertension, recurrent autonomic dysreflexias or an injured brain during any phase of rehabilitation. Ophthalmoscopic detection of papilledema can be an early sign to detect promptly and initiate speedy management in such scenario.

Multiple Sclerosis patients require PMR carein every sphere of their health and life. Diagnosing MS remains a challenge and autopsy findings (especially of the eye) suggests that a lot of cases remain undetected. Both in monitoring such cases and diagnosing a suspect MS patient, opthalmoscopy aided detection of optic neuritis serve valuable role.

Geriatric rehab: DM and HTN are two very common geriatric co-morbidities in the busy PMR OPD. Portable ophthalmoscopy can be a very handy tool in screening such patients as nowadays a timely referral can be sight saving in most cases. Also early detection of Diabetic Retinopathy changes can predict peripheral neuropathy changes as well as candidates prone for diabetic foot ulcer.

Rheumatological rehab: Giant Cell Arteritis (GCA) is a very common rheumatological condition, where prompt diagnosis of AION in an eye, can help in clinical diagnosis as well as save the vision in both eyes. To be honest, here the entire management including temporal artery biospy and pulsed Methyl Prednisolone treatment is possible in the PMR clinic itself as no further novel ophthalmic t/t is available in the short run.

Finger nail bed capillaroscopy is nowadays a must learn skill of the rheumatologist and the dermatologist. Though there are specialised equipments, but with the help of the ubiquitous opthalmoscope it can also be done and easily learnt by the practising Physiatrists. It will help in assessing those patients suffering from very common Raynaud's Phenemenon and clinch the diagnosis for Scleroderma, MCTD,DM, overlap syndromes etc.

Conclusion: The 21st century PMR specialist is constantly striving to learn newer skills or upgrading the existing skill base. Gradually he had made working competency in urodynamics, neurodiagnostics or musculoskeletal USG, to name only a few. With this presentation we hope that, Ophthalmoscopy will be gradually taken up by the Physiatrist as an indispensable skill set for his practise.

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Artificial Intelligence in Disability Certification: Need of the Hour

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Disability certificates (DC) state a percentage of physical impairment in relation to a limb/whole body. Persons with disability (PWD) need to produce such documents to avail of the benefits that the law of the land accords them. Procedure to obtain the certificates is complicated forcing the disabled person to go through lots of paper work and travel. Repeated verification of DC at different level breaches their privacy to say the very least. In this review, we considered the shortcomings of the present system of DC and reviewed the possible prowess of machine learning and deep learning to sort out such issues. Systematically coded International Classification of Functioning, Disability and Health (ICF) core data set is an existing and thorough resource to be leveraged to classify disabling conditions and produce DC complete with functional disability to be utilized in judicial proceedings. Initial establishment cost could be minimized with the careful use of Edge and Cloud computing at appropriate levels. Machine learning tools could be trained by Rehabilitation Professionals at the initial stage, while systems could be self trained by itself later. Level 1 AI can be put to use immediately. Level 2 AI may be tried in pilot projects. Utilization of technology may be a way to achieve standardized, objective, blinded and an accessible disability certification and verification system.

Keywords: Disability Certificate, Artificial Intelligence, Cloud computing, Machine Learning

Themes: NEED OF COMMUNITY & TELEREHABILITATION

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Spasticity Revisited

In physiatry spasticity is frequently seen. It is as one of the challenging and most disabling symptoms to treat during neurorehabilitation. Mechanisms underlying this motor dysfunction or spastic dystonia is still unclear. Furthermore, often we see a different pattern of spasticity in persons suffering from a similar neurological disease. Mainly release of the spinal reflex pathway, failure of reciprocal inhibition, involuntary contractions of muscles, the release of primitive reflexes and soft tissue changes, cause spastic hypertonia. Untreated spasticity can lead to pain, immobility, gait disturbances, contractures, pressure ulcers and difficulty in activities of daily living. Various pharmacological and non-pharmacological methods are used for managing spasticity. Phenol blocks remain an essential method of intervention for reducing spasticity. In developing countries where the cost of oral medicine and botulinum toxin is inhibiting, motor blocks with phenol blocks is an economical and effective option.

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CURRENT CONCEPTS IN REHABILITATION OF OSTEOPOROSIS

Osteoporosis is one of the most prevalent metabolic bone diseases in the world and is a major public health problem. Osteoporosis is a silent, asymptomatic disease until a fragility fracture is sustained. Fractures greatly affect the physical functioning and health-related quality of life and are associated with increased mortality and morbidity rates. Measures of musculoskeletal rehabilitation play an integral part in the management of patients with increased fracture risk because of osteoporosis or extra-skeletal risk factors. In prevention and management of osteoporosis, rehabilitation should focus on how to increase muscular and bone strength & prevent falls in addition to pharmacological management & nutritional supplements This presentation delineates current scientific evidence concerning nonpharmacologic approaches that are used in conjunction with pharmacotherapy for prevention and management of osteoporosis.

Theme: CURRENT CONCEPT OF MUSKULOSKELETAL & RHEUMATOLOGY REHAB

Dr. Nimish Mittal
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Division of Physical Medicine and Rehabilitation
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Pragmatic clinical decision-making approaches for assessment and management of rotator cuff disorders

Shoulder pain is one of the most common complaints seen in clinical practice. Delay in a timely, accurate diagnosis of shoulder pain can lead to significant disability. The most common causes of the painful shoulder, such as rotator cuff tendinopathy/tears, shoulder impingent, bursal pathologies, bicipital and labral pathologies, and frozen shoulder, result from disorders of periarticular soft tissues. Most of these diagnoses have overlapping clinical presentations, and available clinical tests used for diagnosis of these conditions have limited specificity and are often equivocal. Hence, it is difficult to make an accurate diagnosis in patients with shoulder pain. This session will focus on providing a practical clinical decision-making algorithm for diagnosis of rotator cuff disorders and the utility of point of care musculoskeletal ultrasound (US) as a valuable tool for the extension of the physical exam.

Learning Objectives:

1. Recognize biomechanics and important anatomical pain generators in shoulder
2. Describe a clinical algorithm for assessment of rotator cuff disorders
3. Explain the combined utility of clinical tests and musculoskeletal ultrasound to augment diagnostic clinical decision making

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INTERVENTIONAL NEUROREHAB:BEYOND THE COMFORT ZONE

Over the years botulinum toxin is gaining more and more popularity in interventional neurorehab. There are lot of centres in all over India who are using botulinum toxin in spasticity. We also started the same procedure blindly several years back in our institution. Slowly slowly we tried to expand the horizon of our practice in different field in last couple of years. We performed good number of cystoscopy guided botulinum toxin in hyperactive bladder, endoscopy guided botulinum toxin for swallowing disorder, USG guided sutural block for migraine and in different types of Dystonia etc. Not only that but also we started good number of USG guided botulinum toxin for different muscles which made a significant difference of our quality of practice. Recently we have exciting experience with the botulinum toxin injection in large ventral incisional hernia. The reduction of size of hernia was statistically significant. Eventually surgery became much easier without any risk of compartmental syndrome. This presentation is a humble attempt to share our learning experiences to push the boundaries of interventional neurorehab with botulinum toxin injection.

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Tele-tools In Community Rehabilitation - Reaching The Unreached

Technology has remarkably revolutionized the healthcare sector since last few decades. In rehabilitation too, introduction of advanced diagnostic cum intervention equipments like USG, sophisticated robotics, state of art modalities, orthosis and prosthesis are constantly changing and broadening the range and scape of rehab services.But, an indispensable need has always been felt to take these advances to the remotest of areas. It holds true especially in Indian context, wherein other challenges likeinadequate number of rehab professions, financial cum socio-cultural-architectural barriers and even PwD unfriendly public transport system are also widely seen.

Hence, emergence of Telehealth in community rehabilitation was long due. With social distancing as one of the prime prevention strategy, Outbreak of COVID 19 pandemic has accelerated the process of broad acceptance towards tele-rehabilitation amongst not just physiatrists, but also amongst general population.Telerehabilitation (TR) has been defined as the delivery of rehabilitation services via information and telecommunication technologies (i.e., assessment, monitoring, intervention, supervision, education, consultation, and counselling. TR creates opportunities for rural communities to access advanced rehabilitation expertise and services that would be otherwise inaccessible.Despite its numerous benefits, it also brings several concerns and challenges such as failing to adapt to this shift at an equal or adequate pace.It's becoming imperative to identify the available Tele-tools, acknowledge the limitations faced by present users, and look for means for rectifying issues and for establishing cost-effectiveness.

Keywords: Telerehabilitation, Telehealth, Digital Health, Telemedicine, Physiatry

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Setting up and execution of telemedicine based pulmonary rehab program for patients with COVID 19 pneumonitis

As a highly infectious respiratory tract disease, COVID-19 can cause respiratory, physical, and psychological ailments in patients affected by the virus. Approximately 15% of individuals with COVID-19 develop moderate to severe disease and require hospitalization coupled with oxygen support and conservative treatment, with a further 5% who require admission to an Intensive Care Unit including intubation and ventilation. The most common complication in severe COVID-19 patients is severe pneumonia. Alterations of lung tissue such as ground-glass opacities, consolidation, vascular thickening, bronchiectasis, pleural effusion, crazy paving pattern and irregular solid nodules, may progress in over 80% of patients. Persisting limitations in respiratory function and gas exchange will likely to be more pronounced in the subgroup of ICU survivors. The pulmonary rehabilitation is an established treatment for COPD and other lung diseases (Level 1 evidence). Follow up studies of patients suffering from SARS has shown that many patients suffered from cardiopulmonary deconditioning, exertional dyspnea, muscle wasting, and physical weakness for a long time after discharge from hospitals. Whereas those who have suffered from ARDS, have also shown functional deficits even 1 year after discharge. Hence the need for pulmonary rehabilitation in SARS is a strong evidence which suggests that pulmonary rehabilitation programs would also be utmost important in COVID 19 as well. Multiple international guidelines have been published internationally supporting pulmonary rehabilitation for COVID 19 illness. In this COVID 19 pandemic where movement restrictions and traveling safety are emerging concerns, telemedicine has came up as a preferred mode of treatment for various diseases. Pulmonary rehabilitation via Telemedicine/tele-rehabilitation reduces exposure during travelling and improves the quality of life with limited health care resources and also maintaining social distancing. This paper describes setting up and execution of telemedicine based pulmonary rehab program for Indian scenario considering limited resources and cost expenditure

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Keywords: COVID 19, pulmonary rehabilitation, telemedicine, telerehabilitation

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The experience of Telerehabilitation in COVID-19 pandemic: Inputs from a Neurorehabilitation desk from Bengal

Telerehabilitation, a branch of Telemedicine has seldom been practiced in India. However, following the declaration of COVID-19 as a pandemic by WHO the global measures compelled people to suspend their routine visit to a Physiatrist's or a therapist's chamber. This led to an unprecedented surge in the use Telerehabilitation in India. This presentation highlights the experiences of the Department of Neurorehabilitation at the Institute of Neurosciences, Kolkata. The telerehabilitation program was designed with the guidelines published by the Indian Medical council in March 2020. We started by designing an advertisement page, shared it through social media, drafted an appropriate consent form, incorporated a wide options of payment modes and used a simple medium like whattsapp for our video calls. Initially it was meant for follow up patients but soon we included new patients by forming our own departmental checklist keeping in mind the safety and convenience of the patients. Over a period of 6 months, we have conducted more than 500 telerehabilitation sessions for 262 individuals of which 185 patients consulted three physiatrists and 87 patients consulted the therapists (physio, occupational, speech therapists, psychologist). The feedbacks were collected through questionnaires.Simultaneously three research projects in Telerehabilitation were launched. It is not a replacement for in-person consultation and has numerous challenges, but it was found to be beneficial for patients in remote places with inaccessible health care, those with impaired mobility and elderly patients with multiple co-morbidities thus avoiding travel in pandemic. We conclude it to be feasible in a hugely populated country like India.Quality research is required to explore the potentials, benefits and the drawbacks of this platform.

Key words: telemedicine, telerehabilitation. COVID-19

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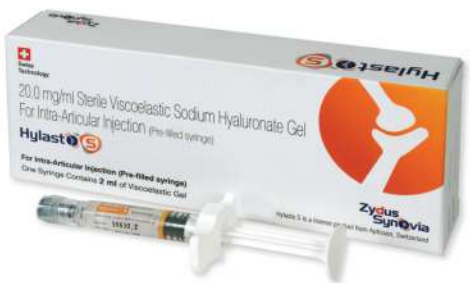

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* RA- Rheumatoid arthritis

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Title: Impact of Spinal Cord Injury on Menstruation

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Background: Spinal Cord Injury leads to disturbances in sexual functioning in relation to female sexuality and fertility. An area of concern to women is menstruation, as it is closely linked to expectations about becoming a mother.

Objectives: To assess the prevalence of menstrual changes following spinal cord injury, along with determining the association between nature and type spinal cord injury and modulation of menses. Study design: Descriptive study.

Methodology: Forty SCI women who presented to the Department of Physical Medicine and Rehabilitation at St. Johns Medical College Hospital, Bengaluru, were studied over a period of two years, regarding demographic data, timing and type of injury sustained, and also on the various menstrual changes, using a specially designed questionnaire and follow up. Results: Of the 40 subjects, 31 (77.5%) had post injury transient amenorrhea, with return of menses in an average of 2.65 months. Neurologic deficit was complete in 22(55%) and incomplete in 18(45%). The duration of flow decreased in 12 out of 40 subjects(30%) and remained the same in 28 among 40 subjects (70%). The amount of flow decreased in 6 among 40 subjects(15%) of the sample and remained the same for the rest. Conclusion: The occurrence of amenorrhea was not influenced by the level and nature of SCI. However, in majority of the subjects, the bleeding duration came down significantly from the pre-injury levels. The nature of flow was also significantly reduced post injury. Such women also perceived significantly less menstrual cramps or dysmenorrhea. There is a need to recognize and address all the psycho-sexual problems of women with SCI so as to enable these women to reclaim their socio-cultural life effectively.

Key words: Spinal cord injury, Rehabilitation, Menstruation, Amenorrhea.

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STUDY OF EFFICACY OF PLATELET RICH PLASMA AND ULTRASONOGRAPHIC CHANGES IN CARTILAGE THICKNESS IN DEGENERATIVE OSTEOARTHRITIS KNEE

Dr. Deepthi S Johnson, Dr RK Wadhwa, Dr. Suman Badhal

In this study a total of 30 patients diagnosed with OA knee by ACR clinical criteria and Kellgren-Lawrence grade II & grade III were given 2mL of autologous PRP for three weeks. The objective was to study the clinical, functional outcomes and assess the cartilage thickness in OA knee following Platelet Rich Plasma (PRP) injection and to correlate the cartilage thickness change with the clinical outcome.The subjective parameters were VAS and KOOS. The mean VAS score for pain was 7.4, 5.3 and 3.37 before treatment, 90 days and 180 days post injection respectively. The mean total KOOS was 19.16 ± 10.73, 37.42 ± 9.88, 49.98 ± 8.82 before treatment, 90 days and 180 days post injection. The objective parameter of disease modification was ultrasonographic measurement of the cartilage thickness. The mean cartilage thickness in middle trochlear notch cartilage thickness, medial trochlear notch cartilage, lateral trochlear notch cartilage, medial femoral condyle cartilage, lateral femoral condyle cartilage improved from baseline (2.43 ± 0.57; 2.15 ± 0.6; 1.99 ± 0.54; 0.8 ± 0.48; 1.13 ± 0.58) to final follow up on day 180 (2.66 ± 0.54; 2.4 ± 0.42; 2.34 ± 0.46; 1.56 ± 0.38; 1.98 ± 1.38) which were statistically significant and implies cartilage repair following PRP administration.

Key words: Osteoarthritis knee, Platelet-rich plasma, Visual analogue scale, ultrasonography, Knee Osteoarthritis Outcome Score

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Recovery following rehabilitation in post covid 19 associated demyelination

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Abstract: A 47-year-old man who is a known case of hypertension, diabetes, chronic kidney disease was admitted for elective retinal surgery. Pre-operatively, he was diagnosed with COVID- 19. Over the next five days, he developed sudden onset loss of consciousness, global aphasia, dysphagia and quadriparesis. He had acute on chronic CKD and underwent one episode of hemodialysis. During the course of admission,he also developed a stage III sacral pressure ulcer measuring 5x 6cm.3 weeks after admission, he became COVID negative and got discharged. 2days after discharge, he developed weakness of all four limbs (distal>proximal), Broca's aphasia, dysphagia, facial palsy with sensory deficits. Lumbar puncture was inconclusive.MRI brain and spine screening were suggestive of demyelination in centrum semiovale, corona radiata and multi-level disc degenerative disease. Based on clinical features and imaging, a diagnosis of post covid 19 demyelination was made. He was treated with steroids. He was also found to have bladder and bowel incontinence. He also developed altered sensorium and CT was inconclusive. He developed hypernatremia and deranged renal function tests which was suggestive of uremic encephalopathy. Following 2 cycles of hemodialysis,his sensorium improved. He was started on a rehabilitation program. Gradually his global aphasia improved to recovering motor aphasia, MMSE was 18/28, dependent for all ADL's.He was able to walk with walker.

Keywords- Demyelination, covid 19, rehabilitation

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A HOSPITAL BASED COMPARATIVE STUDY OF AXILLARY NERVE CONDUCTION IN HEMIPLEGIC AND NORMAL SHOULDER

Dr. Mithlesh Goswami, Dr Rajeshwari Jindal

Introduction: One of the major sequel of the stroke is Glenohumeral subluxation (GHS). It can cause stretching of brachial plexus and/or axillary nerve conduction changes1. Patients who recover from stroke may have shoulder disability due to this nerve injury. Aim of the study to determine any difference in axillary nerve conduction changes between hemiplegic and normal shoulder.4 Material and Method: This is a hospital based case control study, included total 31 first time post stroke hemiplegic patients aged 18-65 Years, normal passive shoulder joint range of motion with stroke within 1- 4 month duration. Latencies and amplitudes of the axillary nerves of the unaffected(31) and hemiplegic(31) shoulders were compared using nerve conduction study method. Results: The mean amplitudes of the compound motor action potential of the hemiplegic shoulders (5.49 ± 2.6 mv) was significantly lower than that of healthy shoulders (7.09 ± 2.33mv; P=0,001). The mean latency of the axillary nerves of the hemiplegic shoulders (3.28 ± 0.84 ms) was prolonged when compared to that of the healthy shoulders (2.57 ± 0.80 ms) and this difference was statistically significant (P=0.001). Conclusion: Changes in amplitude and latency were statistically significant, it indicates injury to the axillary nerve in post stroke hemiplegia. This prevent post stroke recovery of shoulder joint. So we recommend planning for prevention of the stretching injury of brachial plexus and /or axillary nerve in hemiplegic shoulder in post stroke rehabilitation.

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Comparison between ultrasound guided autologous bone marrow aspirate injection and extracorporeal shockwave therapy in resistant cases of lateral epicondylitis : a randomised controlled trial

Dr Sreejith C, Akoijam Joy Singh, LongjamNilachandra Singh

Lateral epicondylitis also known as the tennis elbow is a disorder that arises as a result of repetitive movements of the involved muscles (wrist extensors, specially extensor carpi radialis brevis) particularly in the working age group. The disease imparts significant disability to those affected in terms of the quantity and quality of work done. This randomised controlled study was done for a period of eighteen months commencing from October 2018 in the Department of Physical Medicine and Rehabilitation, Regional Institute of Medical Sciences, Imphal, Manipur. A total of 92 patients with resistant lateral epicondylitis were recruited and distributed in study and control groups. The intervention group (BMA) consisted of 26 females and 20 males with a mean age group of 39.63±9.09 while the control group(ESWT) consisted of 27 females and 19 males with a mean age group of 40.04±7.68 . The result showed improvement in mean VAS score in BMA group from 7.22±0.89 to 1.67±0.70 at end of 24 weeks. In ESWT group, mean VAS score improved to 2.3±0.68 at end of 24 weeks. The total PRTEE mean score in BMA improved from 85±3.29 to 24.87±2.10 at 24weeks, while in ESWT group it reduced from 85.17±2.83 to 41.89±3.17 at 24weeks. Autologous Bone marrow aspirate injection may thus be considered as a novel alternative to surgery in resistant cases of lateral epicondylitis.

Keywords: Lateral epicondylitis, Extensor carpi radialis brevis, Autologous bone marrow, Extracorporeal shockwave therapy

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Challenges Faced in Rehabilitation of a Person with Quadruple Amputation Following Electrocution

Dr Jaya Das, Dr Navin Kumar

Case description and objective: This article describes the challenges faced in the rehabilitation of a person with quadruple amputation, the pre-prosthetic difficulties faced and subsequent functional improvement after prosthetic fitting and training.

Study Design: Case report

Treatment: The rehabilitation program was started with pre-prosthetic phase, comprising of physical and mental adaptation to the condition with necessary interdepartmental support with stump preparation, and then progressed to prosthetic phase, in which the patient was fitted and trained with mechanical prostheses.

Outcomes: The patient graduated from being wheelchair bound to independent ambulation without any mobility aid using all four extremities prostheses successfully.

Conclusion: The successful rehabilitation of a person with quadruple amputation with mechanical prostheses is a challenge. But with prior motivation, planned progressive training and psychosocial counselling, it can serve as an example to help such cases in a low socioeconomic country like India.

Keywords: quadruple amputation, amputation rehabilitation, electrocution, prosthesis

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Single Event Multi-Level Surgery in Cerebral Palsy

Dr. Divya Roy, Arun Kumar

Introduction - Single Event Multi-Level Surgery (SEMLS) has become and increasing trend in the rehabilitation care management of cerebral palsy due to the advantage of one hospital admission and one period of Rehabilitation.

Objective - Aim of the Present study is to evaluate Spastic Diplegic Cerebral Palsy patient with contracture, pre-operative evaluation, pre-surgical rehabilitation and operative and post-operative rehabilitation.

Material and Methods – Study was conducted over 30 patients. In PMR, PMCH in 4 to 8 years age group with Spastic Diplegic Cerebral Palsy. At the beginning and the end of six weeks, six months and one year assessment done using following criteria.

(i) Decrease in Popliteal Angle
(ii) Improvement in Hip Abduction
(iii) Improvement of Balance

Results – There was significant improvement in gait & gross motor function over time after SEMLs. The study was conducted on 4 to 8 years age group of Spastic Diplegic Cerebral Palsy with male preponderance. Medical management of spasticity done with baclofen etc. Pre and Post operative exercises provided were ADL, Strengthening & stretching exercises, Assistance devices for walking (AFO) and improved personal hygiene.

Conclusion – SEMLS results in clinically and statistically improvement in gait & motor function in children with Spastic Diplegic Cerebral palsy with good trunk control and static contractures at multiple joints in the lower limb.

It has to be a team effort of the surgeon and Rehabilitation team in the post operative period for the attainment of satisfactory goal.

Keywords – Diplegic Cerebral palsy, Spasticity , Contractures, Motor Functions

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Comparison Between Fluoroscopy Guided Radiofrequency Ablation of Genicular Nerves and Intra Articular Injection of Methylprednisolone Acetate in Relieving Pain and Improving Function in Grade 3 and 4 Osteoarthritis of Knee: A Randomised Controlled Trial

Dr. Moirangthem Janet, Dr. Akoijam Joy Singh, Dr. Longjam Nilachandra Singh

Osteoarthritis (OA) is a disabling condition mainly affecting the elderly population. Prevalence of OA in India is 22 to 39 % and knee OA alone contributes to 80% of osteoarthritis burden. Despite the immense impact of this disease very few effective non-surgical options are available to handle it. A randomised controlled trial was done in the Department of Physical Medicine and Rehabilitation, Regional Institute of Medical Sciences (PMR, RIMS) for a period of 1 year on 76 patients with knee osteoarthritis Kellgren- Lawrence (KL) grade 3 and 4. The participants were divided into two groups- study and control group. Study group underwent Radiofrequency ablation (RFA) of genicular nerves of knee, while control group received intra-articular (IA) knee injection with Methylprednisolone acetate 80 mg. Assessments of Visual Analog Scale (VAS) and Western Ontario McMaster University Osteoarthritis Index (WOMAC) were done at 1 week, 4 weeks and 12 weeks. In the study group, who received RFA of genicular nerves showed decrease in VAS score from 6.84±0.638 at baseline to 2.61±0.718 at 1week and 2.97±0.885 at 12weeks. Control group receiving 80mg of Methylprednisolone also showed decrease in VAS score from 5.82±0.563 at baseline to 2.18±0.393 at 1week and 4.03±0.545 at 12 weeks. Consistent improvement was also seen in WOMAC function score in both groups. It significantly improved from 44.79±7.185 at baseline to 26.79±4.375 at 12 weeks in RFA group, while in steroid group it improved from 41.26±5.310 at baseline 24.89±3.431 at 12 weeks ($p<0.05$).

Conclusion: RFA of genicular nerve provides longer and sustained pain relief in grade 3, 4 OA knee than IAS. Conclusion: RFA of genicular nerve provides longer and sustained pain reliefin Grade 3, 4 OA knee than IAS.

Keywords: Osteoarthritis, Kellgren- Lawrence grade, Radiofrequency Ablation, WOMAC

*This study has been registered in the clinical trials registry of India. CTRI number is CTRI/2019/10/021626

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A RANDOMIZED CASE CONTROL STUDY OF AUTOLOGOUS PLATELET RICH PLASMA AND NORMAL SALINE DRESSING IN THE MANAGEMENT OF PRESSUE SORE IN SPINAL CORD INJUY PATIENTS.

Dr Meena Rajesh Kumar, Choudhary Dr Om Parkash

Introduction: SCI is a highly disabling injury and pressure ulcers are one of the major secondary complications. Platelet-rich plasma (PRP) gel is considered to be an advanced wound therapy for wounds. The purpose of study was to compare PRP gel therapy verses saline dressing in treatment of pressure ulcer on the basis of histo-pathological features of the ulcer.

Material and Methodology: Recruited cases were randomized in case and control groups. Pressure ulcers of case were managed with PRP gel dressing twice weekly and control group were managed with normal saline on the daily basis. Punch biopsy was taken from margins of pressure ulcers at baseline and at the end of 5th week for histopathological evaluation.

Result: 57 patients were recruited in the study (including 5 dropout patients) out of required 64.

In case group, at base line, histo-pathological findings of pressure ulcer were as following: Necrosis and suppuration (n=18, 69.23%), early granulation (n =7, 26.92%), neo-vascularization and late granulation (n= 1, 3.84%) and at the end of 5th week the histopathological findings were: necrosis and suppuration (n=1, 3.84%), early granulation (n =3, 11.53%), neovascularization and late granulation (n= 6, 23.07%) and well formed granulation and epithilization (n=16, 61.53%). In control group, at base line, necrosis and suppuration (n=20, 76.92%), early granulation (n =5, 19.23%), neovascularization and late granulation (n= 1, 3.84%). and at the end of 5th week necrosis and suppuration (n=6, 23.07%), early granulation (n =10, 38.46%), neovascularization and late granulation (n= 9, 34.61%) and well formed granulation and epithilization (n=1, 3.84%).

Conclusion: PRP gel dressing is a better alternative to normal saline dressings in pressure ulcer healing in SCI.

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A RANDOMIZED CONTROL STUDY OF SUBCUTANEOUS ADMINISTRATION OF TERIPARATIDE AND DENOSUMA POSTMENOPAUSAL OSTEOPOROSIS

Das Prasenjit, Goenka Sunil

Introduction: WHO defined osteoporosis as low bone mineral density that falls 2.5 SD below the mean for young healthy adults of same gender. Current medications to treat osteoporosis may be broadly divided into those that retard bone resorption such as estrogen, calcitonin, bisphosphonates, denosumab and those that stimulate bone formation such as anabolic steroids, fluoride, teriparatide, abaloparatide, romosozumab, burosumab. Objective: To compare the effect of teriparatide and denosumab in patients suffering from postmenopausal osteoporosis in terms of bone mineral density. Methods: This randomized control study was done in 93 randomly selected patients with postmenopausal osteoporosis at SMS Hospital, Jaipur. After administering teriparatide (20 mcg daily) and denosumab (60 mg every 6 months), we measured lumbar spine, total hip and distal radius BMD at 6 and 12 months. Results: At 6 months, lumbar spine BMD increased more in teriparatide group(27.43±45.77%, P=0.001) than in denosumab group(11.81±8.72%, P=0.001) or control group(0.15±8.66%, P=0.001) and at the end of 12 months also, lumbar spine BMD increased more in teriparatide group(30.14±17.5%) than in denosumab group(22.99±12.99%) or control group(-1.55±12.37%). Similarly at 6 months, total hip BMD increased more in denosumab group (17.34±11.32%, P□0.001) than in teriparatide group (15.3±18.16%, P□0.001) or control group (-12.66±43.87%, P□0.001) and at the end of 12 months, total hip BMD increased in denosumab group(38.24±16.3%) than in teriparatide (25.58±19.11%) or control group(-19.34±68.87%).

Conclusions: Both teriparatide and densumab are effective to treat postmenopausal osteoporosis. Teriparatide is more effective at lumbar spine than at hip where denosumab is much better at hip than at lumbar spine. To conclude further treatment is needed as sequential therapy because on stopping those therapies BMD again start receding over the period.

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SUPRASCAPULAR NERVE BLOCK AN "INVINCIBLE WEAPON" FOR ADHESIVE CAPSULITIS SHOULDER

Dr. Rajeev Ranjan Sinha, Varma, A.K.

Adhesive capsulitis of shoulder or arthrofibrosis is a self-limiting but poorly understood, debilitating condition which lead to painful restriction of movements at glenohumeral joint in various planes. These painful stiffness vastly impairs quality of life. Pathophysiology includes inflammation of joint capsule followed by reactive fibrosis and adhesion of synovial lining of joint.

Objective: The objective of present study is to evaluate the efficacy of landmark based technique of suprascapular nerve block (SSNB) with bupivacaine and methylprednisolone mixture. Materials & methods: study was conducted over 30 patients with chronic shoulder pain & restriction diagnosed as adhesive capsulitis. Visual analogue scale (VAS) for pain and shoulder pain and disability index (SPADI) were assessed before and after procedure on 1st, 3rd and 6th week. Pain relief was assessed on likart score.

Result: There was significant improvement in VAS from 8.06 ± 0.62 to 1.98 ± 0.6, 4.09 ± 0.8 and 5.07 ± 0.4 after 1st,3rd and 6th week of block respectively($p<0.5$). Improvement in SPADI was from 86.29 ± 3.98 to 58.26 ± 2.08, 59.38 ± 1.09 and 59.98± 3.06 respectively and pain relief on likart score was 3.46+0.82, 3.96+0.96 and 4.02+0.28 on 1st, 3rd and 6th week. Conclusion: It may be concluded that suprascapular nerve block technique is well tolerated, safe and significantly effective method in patients of adhesive capsulitis for controlling pain & disability.

Keywords: Adhesive capsulitis, arthrofibrosis, suprascapular nerve block, landmark technique.

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RETROSPECTIVE STUDY OF POST-HANSEN HAND DEFORMITY RECONSTRUCTIVE SURGERY AND ITS REHABILITATION

Dr. Santosh Kumar, Dr. Arun Kumar

Introduction - Hansen's diseases are one of the fore most cause of deformities and crippling. The deformities may result from the diseases process like loss of eyebrow, Nasal deformity & other facial deformity or due to damage of peripheral nerve trunk i.e partial and total claw hand, foot drop, wrist drop and lagophthalmos.

Objective - Aim of the Present study is to evaluate the post-Hansen Patient with deformity, pre-operative evaluation, pre-surgical rehabilitation and operative and post-operative rehabilitation.

Material and Methods - My study on 20 leprosy cured patients in Dept of PMR, PMCH, Patna. Details history, Pre-operative evaluation of deformity and investigation was done as per protocol. Reconstructive surgery was done following Zancolli Lasso Procedure.

Results - Most of the Patients belong to age group (15to45yr) with Male predominance and belongs to low-socioeconomic group and having grade-2 deformity and they are fully reconstructive after reconstructive surgery.

Conclusion - It may be concluded from present study that reconstructive surgery procedure is one of the best way for deformity correction in Post-Hansen patient and helps in re-storing self-confidence in patient by improving basic function and making them independence.

Keywords - Hansen's Diseases, Deformities, Claw Hand, Zancolli-Lasso Operation.

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A study of cardiac autonomic dysfunction in patients with acquired brain injury

Dr.Ijaz N. Pillai[1],Dr.Kurian Zachariah[2], Dr.Nidhi Rawat[3]

Background: Acquired brain injury (ABI) is an umbrella term for any injury to the brain sustained since birth. Most common forms are Traumatic Brain Injury (TBI) and stroke. Deficits after ABI include cognitive, motor as well as autonomic. One of the significant clinical presentations of cardiac autonomic dysfunction areParoxysms of Sympathetic Hyperactivity (PSH). Heart Rate Variability (HRV) analysis has been shown to be an objective measure of autonomic function. This analysis gives information about the sympathetic and parasympathetic systems and their balance.

Objectives: To describe prevalence of clinical and subclinical autonomic dysfunction in patients with ABI.

Purpose: Autonomic dysfunction in brain injury patients isassociated with greater morbidity,higher healthcare costs, longer hospitalization and poorer outcomes. It is a treatable contributor to secondary brain damage.

Study design: Descriptivestudy

Methodology: 26 ABI patients admitted under PMR Department were studied over period of 2 years, data recorded include history, examination, screening for PAID, functional assessment using Modified Barthel Index, Disability Rating Scale and Glasgow Outcome Scale Extended. Stroke subgroup also underwent Scandinavian stroke scale scoring. All patients underwent resting HRV testing at the Clinical Physiology Lab, St. John's Medical College Hospital.

Results: Among the 26 patients who underwent the study, 4 (15%) were noted to have PAID. All 4 belonged to TBI subgroup. Subclinical autonomic dysfunction noted as abnormal HRV was noted in 25 out of 26patients(96%).

Conclusion: The prevalence of PSHin acquired brain injury patients was found to be similar to previous studies. In addition to clinical autonomic dysfunction, subclinical cardiac autonomic dysfunction is much more common and could point towards a treatable cause of reduced functional recovery.

Key words: PSH (Paroxysmal Sympathetic Hyperactivity), Dysautonomia, Heart rate variability, Acquired Brain Injury, Neurorehabilitation

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DEEP VEIN THROMBOSIS A RARE COMPLICATION IN HEMOPHILIA A DISEASE

Venous thrombosis is a rare complication in patients with hemophilia A. However, it is reported in patients receiving clotting factor concentrates. A 47 year old male hemophiliac presented to the emergency with headache, vomiting and altered sensorium. CT brain revealed cerebellar bleed with intraventricular extension and impending herniation.He underwent emergency ventriculostomy. The laboratory investigation revealed low factor VIII levels and elevated factor VIII inhibitor levels. He was started on therapeutic dosage of factor VIII.His sensorium improved. There was no interval increase in cerebellar hemorrhage.He was started on a rehabilitation program. Initially, he was bed bound and ADL dependent. During the course of rehabilitation, he developed swelling of left lower limb.Venous doppler reported deep vein thrombosis of posterior tibial vein and peroneal vein extending into the popliteal vein. He gradually developed breathlessness with a drop in oxygen saturation.Anticoagulants were started along with factor VIII. CT pulmonary angiography done to rule out pulmonary embolism was normal. Anticoagulants were continued. Few days later, he developed right elbow hematoma. Anticoagulants were stopped. Patient continued to receive factor VIII. Patient improved significantly after rehabilitation. He was ambulatory and ADL independent at the time of discharge. Treating a symptomatic hemophilia A patient is challenging as even a therapeutic dosage of factor supplementation can result in thrombotic manifestations and anticoagulation therapy given for its treatment can result in bleeding manifestation.

Keywords: deep vein thrombosis, hemophilia.

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COMPARISON BETWEEN THUMB ABDUCTION ORTHOSIS VERSUS METHYLPREDNISOLONE INJECTION IN RELIEVING PAIN AND IMPROVEMENT OF FUNCTION IN DE QUERVAIN'S DISEASE

Dr Shanavas AnothMeethal, Rakesh Das

De Quervain's disease is painful tenosynovitis of the first dorsal compartment of wrist. There are various modalities of conservative treatment available. This study was performed to compare the outcome of corticosteroid injection versus thumb abduction orthosis for the treatment of de Quervain's disease. A randomized controlled study was conducted from September 2017 to August 2019 in PMR dept. of RIMS, Imphal. A total 60 patients with de Quervain's disease were treated with either thumb abduction orthosis or Injection methylprednisolone in first dorsal compartment. Treatment effectiveness was measured by VAS for pain and Quick DASH for functional assessment. Follow up assessment was done at 1 month,3months, 6 months.In this study significant improvement in both mean VAS scores and Quick DASH scores were noted at 1 month,3 months and 6 months in both the groups($p<0.05$). After 1month VAS and Quick DASH score in control group were improved more compare to studygroup ($p<0.05$). But there wasno significant differences between two groups at 3months and 6 months follow up period ($p>0.05$). Steroid injection has excellent outcome, thumb abduction orthosis can be an alternative treatment option for de Quervain's disease.

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A STUDY OF CORRELATION OF LOWER LIMB SPASTICITY WITH ANTHROPOMETRICS AND BONE MINERAL DENSITY IN CHRONIC MOTOR COMPLETE SPINAL CORD INJURY INDIVIDUALS

BATRA AMIT, JINDAL RAJESHWARI

Introduction: Osteoporosis and obesity are well known complications after spinal cord injury. Spasticity, though is known to impair quality of life, might demonstrate beneficial effects in prevention of obesity and osteoporosis. Thus, this study was performed to study the correlation of severity of lower limb spasticity with anthropometrics and bone mineral density (BMD).

Methods: A cross-sectional study was performed among fifty individuals of chronic motor complete SCI classified as mild (n=16), moderate (n=11), and severe (n=23) spastic groups; based on their lower limb extensor muscle group spasticity scores using Modified Ashworth Scale. Waist circumference (WC), waist to height ratio (WtHR) and Body mass index (BMI) were measured. Bone mineral density (BMD, g/cm2) was determined using DEXA scan.

Results: The mean M.A.S score in severe, mild and moderate spastic was 5.28 ± 0.54, 1.84±0.30 and 3.14±0.32 respectively (P<0.001S). WC (cm), WtHR and BMI (kg/m2) were significantly less in severe (86.07±6.27, 0.52±0.05, 20.97±3.30) as compared to mild (100.97±9.89;P<0.001, 0.62±0.06;P<0.001, 24.58±3.22;P =0.004) and moderate spastic group (95.51±7.60;P = 0.006, 0.58±0.05; P =0.016, 24.15±3.12; P=0.026 respectively). Minimum number(13.04%) of osteoporotic patients were in severe spastic group as compared to mild(18.75%) and moderate(18.18%) spastic group(P=0.753NS).

Conclusion: Grading of spasticity was negatively correlated with waist circumference, waist to height ratio and body mass index (r = - 0.627, - 0.603,-0.491, respectively, P<0.001).This suggests that severe spasticity has a preserving role on anthropometrics, while no significant association was observed between the severity of lower limb spasticity and bone mineral density.

Keywords Spinal cord injury, Modified Ashworth scale, Spasticity, Bone Mineral Density

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A PRELIMINARY REPORT OF AN OBSERVATIONAL STUDY TO FIND OUT INDEPENDENT PREDICTORS OF LOW TESTOSTERONE LEVEL AMONG MALE PATIENTS WITH CHRONIC SPINAL CORD INJURY

Dr Anil kumar Sharma, Dr OM Prakash

Introduction: Although high rates of serum testosterone deficiency have been reported in men with chronic spinal cord injury (SCI), its determinants and attributes are not yet established. The aim of our study was to find out the incidence of low testosterone and its independent predictors among male patients with chronic spinal cord injury (SCI).

Material and methodology: Total testosterone level was assessed in all recruited patients to find out the incidence of low testosterone. Leisure time physical activity (LTPA) of past one week, Aging Male Symptoms (AMS) Questionnaires and BMI were assessed to find out independent predictors of low testosterone.

Results: In 04 out of 20 recruited patients, low testosterone (<300 ng/dl) was observed. In 04 cases with low testosterone, mean LTPA score was 8.25 hrs per week (mild activity) observed, whereas in 16 patients with normal testosterone level mean LTPA score was 12.31 hrs per week (mild activity). In 04 patients with low testosterone the AMS score was 44 (moderate) and in 16 patients with normal testosterone the mean AMS Score was 29.25 (mild). In 04 cases with low testosterone, mean BMI was 23.4, whereas in 16 patients with normal testosterone level, mean BMI was 21.58.

Conclusion: Based on the results it can be concluded that BMI, LTPA and AMS scores may be the independent predictors of low testosterone level. In the study total 120 patients will be recruited for more meaningful results.

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CAUDAL EPIDURAL STEROID INJECTION (CESI) IN BACKACHE SCIATICA SYNDROME

Verma.A, SinhaA.K

It is a debilitating condition& it has high lifetime prevalence (80%)in the community. Traditional conservative medical treatments for patients with LBP includes trials of oral medications, physical modalities & lifestyle modifications.The rationale behind injecting glucocorticoid into the epidural space is that it will combat inflammatory response associated with sciatica syndrome and will thus reduce pain.

OBJECTIVE: The present study was planned to examine the effectiveness of CESI with xylocaine and depomedrol,in patients with LBP due to sciatica syndrome.MATERIALS &METHODS: Study is conducted over 40 patients,of age >18 years of both genders ,with history of LBP & lower extremity pain of atleast 6wks duration not responding to conservative treatment.SLR <60',diagnosis confirmed by MRI. Intensity of pain assessed by VAS scale,various pain aggravating and relieving factors are noted.Detailed haematological & radiological inv.done . ADL assessed on FIMS scale.

RESULT: There was a significant improvement in VAS. Mobility (ROM), Gait pattern & ADL was also noted to be improved.

CONCLUSION: This study ,though it was done by blind approach ,still it benefitted the patients on OPD basis& improved their ADL. Patient's compliance & tolerance was good.

KEYWORDS: CESI,LBP,SLR,VAS,FIM,ADL.

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UNUSUAL PRESENTATION OF COVID-19 SEQUELAE WITH MULTIPLE ROUNDED BRAIN LESIONS WITH NEUROLOGICAL DEFICITS AND ITS REHABILITATION- A CASE REPORT

Dr Anindya Debnath, Dr Gaurav Gomez

We present the unusual clinical neurological presentation, evaluation and rehabilitation of a case of severe COVID 19 with brain lesions with neurological deficits currently undergoing parallel medical evaluation and rehabilitation under our department of PMR.

A 61 year old male, after being diagnosed with severe COVID pneumonia developed multiple neurological deficits. Brain MRI showed multiple rounded T1 hypointense/ T2 hyperintense lesions involving bilateral fronto parietotemporal lobes and basal ganglia with chronic lacunar infarcts. Workup for vasculitis, cryptococcal meningitis, GB syndrome was negative. Current differentials include – demyelinating sequelae of viral illness, granulomatous disease and metastasis for which he is being further evaluated. His neurological manifestations include dysarthria, left hemiparesis, bowel and bladder incontinence. Patient also presented with AKI, aspiration pneumonia, hypernatremia and anaemia. During rehabilitation, investigations showed increasing trend for TLC and inflammatory markers like CRP, Ferritin, LDH, D-dimer. Repeat SARS-CoV-2 RT-PCR was negative. The rehabilitation comprised of medical management, occupational therapy, speech and swallow therapy with necessary interdepartmental support and physiotherapy.

The patient is improving and has graduated from being bedbound, incontinent for bowel and bladder, unable to speak and swallow at admission to achieve fair static sitting balance, standing with support, improving cognition (MMSE).

The diagnosis for this unusual CNS lesions associated with COVID-19 and its functional status at discharge shall be presented once complete.

The successful rehabilitation of a person with COVID 19 neurological sequalae is a new challenge. But with evolving knowledge of COVID 19 manifestations and its rehabilitation management protocols, progressive training and psychosocial counselling, it can serve as an example for future post COVID 19 rehabilitation.

Keywords: COVID-19, rehabilitation, infarcts.

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To compare the efficacy of ultrasound guided Pulsed radiofrequency ablation and Bupivacaine block of Suprascapular nerve in reduction of pain and disability in hemiplegic shoulder pain.

Pilania Chandrakant, Akoijam Joy, Singh Nilachandra

Stroke is a world-wide health problem with incidence of 154 per 100,000 in India. Hemiplegic shoulder pain is reported as one of the most common distressing complication of stroke, with a prevalence of 34% to 84%. The prevalence of shoulder pain has been reported to be as high as 70% in the first 12 months following stroke. A randomized controlled trial was done in the Department of Physical Medicine and Rehabilitation, Regional Institute of Medical Sciences, Imphal for a period of 2 years commencing from September 2017 on 82 patients with Hemiplegic shoulder pain. The participants were divided into two groups - study and control group. Study group underwent Pulsed radiofrequency ablation (PRFA) of suprascapular nerve, while control group underwent bupivacaine block of suprascapular nerve. Assessments of Visual Analog Scale (VAS), Shoulder range of motion (ROM) and Shoulder Pain and Disability Index (SPADI) were done at 1 week, 4 weeks, 12 weeks and 24 weeks. In the study, group who received PRFA of suprascapular nerve showed decrease in VAS score from 7.11 ± 1.12 at baseline to 1.54 ± 1.02 at 24weeks. The control group receiving bupivacaine suprascapular nerve block also showed decrease in VAS score from 7.05 ± 1.31 at baseline to 2.98 ± 1.37 at 24 weeks. Consistent improvement was also seen in SPADI score in both groups. It significantly improved from 83.24 ± 9.67 at baseline to 37.02 ± 9.87 at 24 weeks in study group, while in control group it improved from 84.11 ± 10.04 at baseline to 52.88 ± 12.52 at 24 weeks. Similarly, the ROM of shoulder improved in both groups with more improvement seen in the study group at 24 weeks ($p<0.05$). Conclusion: RFA of suprascapular nerve can be the preferred treatment modality for managing pain and disability in patients with HSP. Conclusion: RFA of Suprascapular nerve can be the preferred treatment modality for managing pain and disability in patients with HSP.

Keywords: Hemiplegic shoulder pain, Visual analog scale, SPADI, Pulsed radiofrequency ablation


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