API DK Lahari

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Guest Editor

PAIN
THE FIFTH VITAL SIGN

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PRESIDENT'S MESSAGE

Respected readers,

This is the first issue of LAHARI after we took over API. I take the opportunity to welcome the new executive committee led by Dr. B. Sadananda Naik as editor in chief and Dr. Archith Boloor as executive editor. I wish the new team all the best.

I would also thank past editor-in-chief Dr. Chakrapani, who was instrumental in bringing up this magazine.

The present edition of LAHARI is being released under the theme PAIN- THE FIFTH VITAL SIGN. Hope the readers will cherish reading the present issue. I thank Dr. Sheetal Raj M for accepting to be the guest editor. Looking forward to having this issuein the printed format.

With best wishes to all readers,

Dr. Suresh G.
President,API -DK Chapter

SECRETARY'S REPORT

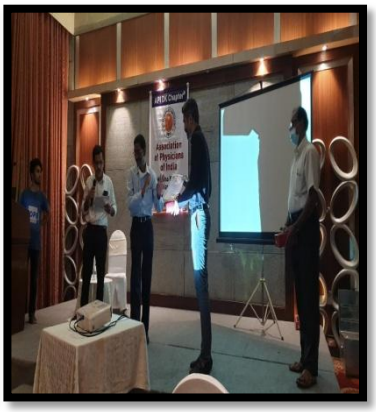
Greetings from API D.K. Chapter. The new office bearers of API D.K.Chapter for the term 2022-2023, with Dr Suresh G as President, Dr Shama Prakash K as secretary and Dr Shuaib Ahmed M A as treasurer took over the charge from April 2022 onwards. New Executive committee was formed and welcomed for the term 2022-2023.

The monthly meeting of April was held on 29th at Hotel Gold Finch at 8pm. Dr. Nanda Kishore Baikunje, Consultant Pulmonologist gave a talk on Endobronchial Ultrasound: An access to mediastinal lesions.Dr Roshan M, HOD, Department of Medicine, Father muller's medical college moderated the session. The talk was followed by interesting discussion. Meeting wasattended by 30 delegates.

The monthly meeting of May was held on 20th at Hotel Gold Finch at 8pm. Dr. Yusuf A Kumble, Consultant Cardiologist gave a talk on Aortic Valve Replacement- Our Experience. Dr. Maneesh Rai, Consultant Cardiac Electrophysiologist gave a talk on Ventricular Tachycardia Management. Dr Sydney Dsouza, HOD of Medicine Yenepoya medical college and Dr Sudhindra Rao M, HOD of Medicine,KSHEMA moderated the sessions. The talk was followed by detailed discussion. Meeting was attended 35 members.

Executive Committee meeting was held on June 2nd at 8 PM through google meet.

The monthly meeting was held on 17th June 2022 at Hotel Sai Palace at 8pm. Dr. Shrinath P Shetty, Consultant Endocrinologist, KMC Mangaluru gave a talk on Role of DPP IV inhibitors in current clinical practice.Dr. Muralidhara Yadiyal B gave a brief talk on Sustainable energy solution—Our Planet, Our Health. The talk was followed by discussion . Meeting was attended by 40 members.



I am extremely honoured and humbled to take the responsibility as Secretary of API DK Chapter for the year 2022-2023 and Production editor of this magazine API LAHARI. I extend my sincere thanks to all our members who have contributed to this issue.

Dr Shama Prakash K
Secretary, API DK Chapter 2022-23
Professor, Department Of Medicine,
KSHEMA, Deralakatte, Mangaluru

EDITORIAL

Dear Colleagues,

The newly installed editorial team of API-DK LAHARI take this opportunity to thank the president of API-DK chapter and team of office bearers for giving us this responsibility. We would like to place on record the hard work and dedication put forward by the previous editorial board headed by Dr Chakrapani. We would try our best to take the work done by Dr Chakrapani and his team to a greater height. With this edition we are launching the print version of our newsletter

Dr Sheetal Raj M , guest editor of this issue has done a great job by compiling articles pertaining to various aspects of pain and its management. We are confident that readers will immensely benefit from these articles written by a few of the pioneers and leading practitioners in the field of pain management. The topic on the duties of a doctor in an emergency has been covered in the medicolegal section. Dr. P S Prakash & Dr. Jayaprakash Alva who have served as deans of medical colleges have shared their rich experience of the changes in medical profession in our interview section. Like our previous issue we do have other general medical articles, journal reviews and non-medical articles as well. In the Resident corner we have introduced Medical Eponyms , and in this edition we look at the great Babinski.

Hope you enjoy reading .

Dr B. Sadananda Naik

Dr Archith Boloor

API- DK Lahari Editorial board

Editorial Board Members

GUEST EDITORIAL

A call to action!

Dr. Sheetal Raj M , Associate Professor **,**Department of Internal Medicine and Program Director– Geriatric Medicine Fellowship **.**Kasturba Medical College, Mangalore, Manipal Academy of Higher Education

No greater opportunity, responsibility, or obligation can fall to the lot of a human being than to become a physician……..Harrison's Principles of Internal Medicine, 1950

Of all the responsibilities of a physician- pain, would remain the most challenging and also the most gratifying to treat when you succeed in conquering it even to a small extent. World over pain is known to be the presenting symptom in more than 80% of physician visits. In the US, pain costs the American public more than $100 billion in healthcare costs , compensation and litigation. However,the mention of 'Pain - the fifth vital sign' to any American pain physician will make them grimace and almost be embarrassed. The campaign for 'Pain - the fifth vital sign' was officially launched in the US in the the late nineties by the American Pain Society. The goal was to increase awareness of physicians towards the pain of the patients. The campaign was given a great push at all levels there and it brought about several significant developments over the next few decades, some of which were *unintended*. The nineties in America was a time of early palliative care development; a time when post operative pain was ignored and when patients of cancer often died in severe pain. While this campaign helped to radically change that,improve patient satisfaction and helped to greatly reduce the pain burden of cancer patients , it lead to a massive increase in opioid prescriptions all over the country. This subsequently led to the epidemic of opioid overdosage which is plaguing the country even today. There have been over 600,000 deaths in the US due to overdosage of prescription opioids. Opioid addiction has been recognized as a major epidemic in US with huge medical, social and financial implications.

Today India is in a stage, similar to where the US was in the nineties vis a vis the stage of development of palliative medicine and pain management. We have, today, a huge responsibility not to walk the path that the US did , in the nineties as we work towards increasing awareness to pain assessment and management. We recognise that by calling *Pain- the fifth vital sign*, pain is now a requirement of proper patient care. Pain is as important and basic as the assessment of blood pressure, temperature, pulse and respiratory rate.

In India, the prevalence of chronic pain is over 19% of the population, with most of the pain being reported from rural India, females and older adults. Problems with opioid access, distribution and training remain huge challenges for us today. While pain is today recognised as a multidimensional phemomenon, often the assessment of pain is done using unidimensional rating scales such as the NRS(Numerical Rating scale), which was one of the reasons which led to the overprescribing of opioids in the US. We need to remind ourselves of the multidimensional nature of pain, of the relationship it has with other aspects of life such as sleep, mood, anxiety and quality of life before reaching a consensus on the best course of action for a given patient. Individualisation of therapy and good training in pain management are some ways by which we can tread carefully and avoid the mistakes of our peers in the US. The opioid epidemic in the US has exposed several deficits in health care provider education and training in the US.In the US ,many of the emergency physicians and primary care providers with busy practices , less training and even lesser time have chosen to prescribe opioids to get rapid relief from pain for their patients and achieve high patient satisfaction scores, often ignoring, the inappropriateness of the prescription. In India under the aegis of the Indian Academy of Palliative Care (IAPC) several short term training programmes have been launched for the training of general practitioners and those interested in palliative care. There has been a mushrooming of several NGOs and other institutions which have promoted training and research in pain and palliative care , over the last 2 decades in India. In India , research has shown that 72 % of the patients who report chronic pain were visiting a non pain practitioner for pain relief, of which over 42% were presenting to general physicians, and only 4.8% to pain specialists. Whether due to lack of awareness among patients or among the doctors in India, it is the generalist who takes much of the responsibility for relieving the severe pain of the masses. Hence, I believe it is the responsibility of us , the physicians , to educate ourselves and train ourselves to responsibly and effectively manage pain for our patients. The time has come where we can no longer ignore this opportunity,responsibility or obligation which is upon us today.

In this issue we have highlighted some key issues regarding pain assessment, pain management and a little about interventional pain. While Dr. Naveen Salins briefs us on methadone-a new challenge, Padmashri Dr. Rajagopaland Smriti will take us through the opioid crisis in India and bring to our notice the current perspectives on pain in India. With these few snippets on pain I hope to call to action all those of you who feel inspired by these articles to learn, train and serve our patients better.

You may reach me at sheetalrajm@gmail.com for any queries or discussion.

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ASSESSMENT OF PAIN

Dr. Gaurav Gomez, M.D Physical Medicine & Rehabilitation Consultant Pain medicine and Neurorehabilitation, KMC Hospital, Ambedkar Circle, Contact : drggomez@outlook.com

"Pain" is irritating, agonizing and unnerving. Pain is representative of, yet protects us from damage. We all feel it, despise it, steer clear of it, but as medical professionals are called to address and tackle it. To do so, we need to first understand and measure it.

One can have **acute** pain (protective pain due to tissue damage) or **chronic** pain (persists beyond the typical healing duration, arbitrarily 3 months and serves no physiological protective purpose). Pain can be **Nociceptive** (i.e. by stimulation of peripheral nerve endings & receptors due to injury) or **Neuropathic** (i.e. pain due to disease of the nervous system). **Nociplastic pain** arises as a result of altered nociceptive perception without clear evidence of tissue damage or disease and is a result of chronic neuroplastic changes in the CNS. The sum total of all factors contributing to pain (physical, social, psychological and spiritual pains) is termed **Total pain**. The theoretical model suggesting that pain is a combination of biological, psychological and sociological factors is termed the **Biopsychosocial model.**

The dimensions of factors at play are divided into-

1. *Sensory-discriminative*→ encompassing sensory aspects of pain i.e. intensity, location, temporal characters etc.
2. *Affective-motivational*→ including emotional and aversive aspects.
3. *Cognitive-evaluative*→ patient's evaluation of meaning and consequences of pain.

Evaluation of pain starts with some history – **SOCRATES**. Note the pain's -**S**ite, **O**nset, **C**haracter, **R**adiation, **A**ssociated factors, **T**iming, **E**xacerbating (or relieving) factors &**S**everity.

A **Pain map** using a '***Pain diagram***' of the body can often reveal typical patterns of various pain generator. Characteristic patterns occur in pains originating from - superficial structures, visceral structures, brain, spinal cord, radicles, plexus, peripheral nerves, nerve branches, sympathetically mediated pain etc. Color coding the diagram can add information for characters like radiation, pain type, intensity etc. Pain character can be typical of certain pains (Eg: "Burning", "Pins & needle", "shock like" and "ants crawling" are more suggestive of neuropathic pain vs "dull ache" or "cramp like" pains).

Pain severity is purely **subjective** - severe pain for me, might be mild for your tolerance or perception. A normal delivery could be a cakewalk for a tribal woman, but for a princess, akin to walking on coal. These

subjective feelings need equating – what I would call 'severe pain' albeit different from your 'severe pain', is finally concluded to be…"severe pain". Equating pain intensity is done using standardized objective scales which can be quantitative, qualitative or a combination of both.

'**Unidimensional-scales'** (*simple, quick & efficient*…like patient's expectation of our treatment) include *VAS, NRS, Wong-Baker Faces, Color analog scale, Categorical scales* (Circle the word, *mild-moderate-severe-unbearable*) etc. Though limited in information, they have sufficient utility to begin efficient pain management. Scales document pain intensity, treatment response and progress and applying them in different scenarios can be more informative Eg: the 0-10 point **NRS** (Numeric rating scale), the commonest used pain scale provides more information if **scoring is recorded at different points-** NRS atminimum & maximum pain intensity, NRS level during inciting or relieving activities, time of day, postures or with & without medication. Scales are available for special populations too. For cognitively/verbally disabled patients - ***non verbal patient scoring*** can be applied Eg: *Iowa pain thermometer, Wong-Baker Faces scales, FLACC, CRIES, COMFORT* etc; For Neuropathic pain - *DN4, LANSS, NPS,NPQ* etc. **'Multi-dimensional scales'** (are complex like most chronic pains) Eg: *MMPI, Mcgill Pain Questionnaire, BPI, Pain disability index* etc.

*Be ever-ready for dreaded "**RED Flags**"* which indicate serious underlying disorders needing immediate medical attention, timely referral or emergent management. Delays often results in permanent loss of function, irreversibility or worsening of disabilities. Eg: In a case presenting as simple Sciatica, missing subtle lower limb motor deficits or bladder symptoms indicative of Cauda Equina syndrome or myelopathy, could result in progress of pathology resulting in irreversible paraplegia.

Chronic Pain - *Late comers are late goers!* Longer lasting pains tend to grow longer tentacles and roots proximally towards the CNS via neuroplastic changes which are notoriously more difficult to address and abolish. The more chronic a pain get, the more difficult it gets to eradicate.

Psychological factors play a crucial role in chronic pain. Psychological afflictions (depression, anxiety, anger, malingering etc) are twice as prevalent in this group as compared to the general population. Such patients are more often than not also in denial of their psychological state. They tend to lack trust in their doctors and often doctor shop against their own good. We thus need to elicit **"Yellow-flags"** indicative of problems in the "affective-motivational" & "cognitive-evaluative" domains. Also, chronic pain is often reinforced by secondary gains and peppered by factitious disorder, somatoform disorder, personality disorders, catastrophizing thoughts etc. At history taking, simple indicators of yellow flags include problems with profession, sleep, social interactions, past hobbies, satisfaction etc. **"Black flags"** cover the socio-occupational factors and are often coexistent. Evaluating these psycho-social factors takes time and requires *Patience with Patients*. Referral to mental health professionals could be prudent.

Patient filled '**Pain diary'** could monitor follow up and progress, covering pain factors such as- variations with time of day, character, location, exacerbating or relieving factors, duration and level of response to medication (especially for opioids), use of breakthrough medication etc.

Let us end with a *checkered flag* of good news – most pains are curable or manageable to a great degree. Lack of awareness of available medical treatments is a big barrier to proper pain management. Chronic

pain may require regular, prolonged, multi-pronged, pain staking management by a specialized team- Pain physician, Psychiatrist, Psychologist, Physiotherapist etc. Times are a changing and albeit well behind the west, Pain clinics are now sprouting in the country. In cases with difficult to treat chronic pains, referral to specialists is thus possible. When in doubt, targeted diagnostic blocks with temporary local anesthetics under imaging guidance can confirm the diagnosis. This can then be followed by specific definitive procedures, minimally invasive injections or surgical, if conservative lines fail or in the presence of aforementioned red flags. In the absence of therapeutic options minimally invasive pain interventions can help symptomatically (Eg: In cases of degenerative diseases or OA knee not willing or unfit for surgery, selective nerve blocks can provide substantial, symptomatic relief, without curing the OA disease process).

For pain management the most important step is history taking followed by clinical examination. Investigations are useful tools but commonly could be misleading, thus need to be interpreted in context of the clinical findings led suspected DDs. Efficient pain alleviation can be extremely satisfying in our clinical practice. Proper assessment of pain using a structured history with apt scales and specific clinical examination, can reveal right diagnoses and effective treatment lines, towards the path of our patients' well being and our own happiness.

Managing Chronic Pain in Palliative care

Dr. Pankaj Singhai MD Palliative medicine training from Tata Memorial Hospital, Mumbai and currently working at Sri Aurobindo University, Indore. Contact : doctorpsinghai@gmail.com

"Pain is a more terrible lord of mankind than even death itself"

International Association of Study of Pain defines pain as "An unpleasant sensation and emotional experience associated with actual or potential tissue damage or described in terms of such damages." Recently, in 2020, IASP has expanded upon the definition by adding 06 key notes emphasizing biopsychosocial nature of pain.

Chronic pain requires multimodality approach. Management of pain is based on its nature. Broadly Pain is classified as acute or chronic pain. Acute pain which usually starts after any injury or trauma, last for shorter time and helps in drawing attention to the injury. It is considered as a protective mechanism to the body and can be helpful in diagnosis of illness. Chronic pain persists beyond the natural course of recovery from any insult, mostly for months or years. Chronic pain can be affected by adaptive mechanisms like sensitization etc. Chronic pain management depends upon the origin of pain (affected tissue). Based on aetiology, it is further classified into:

1. Nociceptive somatic Pain: This type of pain occurs due to stimulation of nociceptors secondary to tissue destruction (like bone, joints or connective tissues) by the diseases. This type of pain is characterised by deep, dull aching, constant pain, worsens with time.
2. Nociceptive Visceral Pain: When there is distention of hollow organs or stretch of Outer capsule of solid organs, it lead to poorly localised, intermittent crampy pain or bloating sensation.
3. Neuropathic Pain: Pain due to lesion or disease of somatosensory nervous system leads to abnormal sensations like Sharp, shooting, burning to stabbing pain. It may also manifest as numbness, tinging or glove and stoke neuropathy. Patient my feel allodynia or hyperalgesia as well.

Assessment of Pain:

Numerical rating scale is most commonly used simple tool to objectively assess the severity of pain where 0 indicate no pain and 10 indicates worst possible pain. Based on severity, it can also be categorized into Mild (1-3), Moderate (4-6) or severe pain (7-10). In cases of children, the elderly, and patients with language differences, facial expression scales, like Wong-Baker scale, can be used. Brief pain inventory can register pain location and effect of pain on activities of daily life. PAINAD is a tool to assess pain in advanced dementia.

Principles of chronic Pain Management:

Pharmacological pain management of chronic pain is based on following principles:

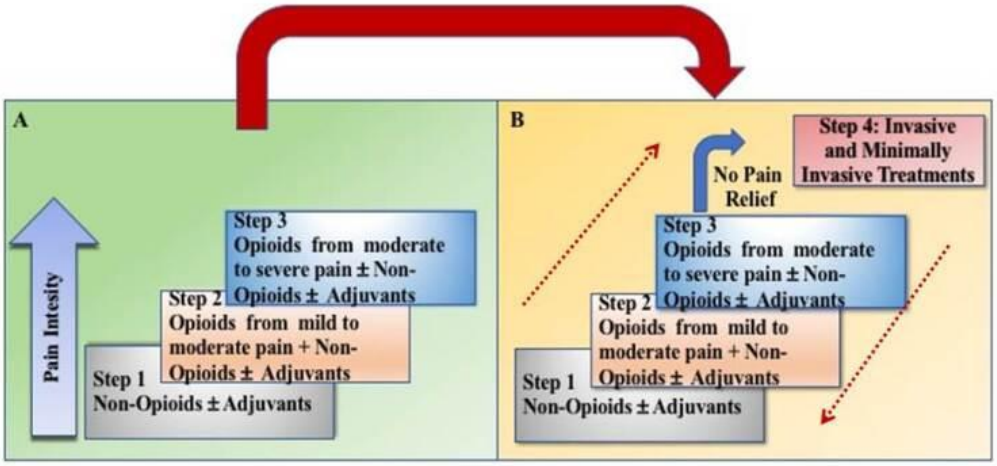
1. By the clock: Around-the-clock administration rather than on-demand, preventing background pain and use extra doses for breakthrough pain. The prescription must follow the pharmacokinetic characteristics of the drugs.
2. By the ladder: Using WHO analgesic ladder (Figure 1) to step up the analgesics based on severity if pain.
3. By the class: using appropriate class of drug based on mechanism and nature of pain. Use appropriate individualised dosage, preferably oral route, interval based on pharmacokinetic of individual drugs.
4. Attention to details: Approach to correct the correctable contributing factors and preventing, anticipating and treating adverse effects of analgesics.
5. The patient must be treated with utmost respect and Empathy. Integrate multimodality team based approach in patient care.

WHO Analgesic ladder: As a part of World Health Organization (WHO) Cancer Pain And Palliative Care Program 1986, WHO proposed step wise approach to effectively control cancer related pain. This guideline was originally designed for cancer pain management, but it can also be useful for non cancer pain conditions also. Originally ladder consisted of 3 steps, later 4th step was added for interventional pain.

1. Step 1: Pain with Mild severity score can be treated with Paracetamol or NSAIDS. Adjuvant medications can be added if needed.
2. Step 2: Pain with Moderate intensity or pain unrelieved with step 1 medication can be treated with weaker opioids added along with step 1 analgesics. Tramadol/ codeine are commonly used weak opioids available in India.
3. Step 3: Patient with severe intensity pain or unrelieved pain with step 2, should be treated with strong Opioid medications along with step 1 analgesics. Available strong opioiods in India are morphine, Fentanyl, Tapentadol, Buprenorphine and Methadone.
4. Step 4: In uncontrolled pain with pharmacological measures, minimal invasive or invasive interventional approach can be used to reduce cancer pain. This includes nerve block, Neuromodulation, ablative procedures, Epidural or intrathecal analgesic infusions.

Strengths and Barriers of WHO analgesic ladder :

WHO analgesic ladder provides a simple and effective approach to reduce pain related distress in 70-80 %. Bidirectional approach extends the strategy to reduce acute pain as well. Simplicity of ladder makes it useful for Non- pain experts also. A major concern with WHO ladder is management of pure neuropathic pain, In this pain opioids have minimal efficacy and adjuvants are mostly helpful. Similiarly inflammatory pain responds better with anti-inflammatory medication like steroids or NSAIDS. WHO Analgesic ladder does not provide guidelines for specific pain based on etiology. In these condition heavy use of opioids can lead to its adverse effects. Similiarly WHO analgesic ladder does not emphasis the role of non pharmacological approaches.



Transition from the original WHO three-step analgesic ladder (**A**) to the revised WHO fourth-step form (**B**). The additional step 4 is an "interventional" step and includes invasive and minimally invasive techniques. This updated WHO ladder provides a bidirectional approach.

Commonly used analgesics:

1. Paracetamol is considered safest and 1st line analgesics in mild pain. Potential side effects of NSAIDS are not commonly seen with Paracetamol. Recommended dose is 15mg/kg body weight every 6 hrly, not to exceed 4000mg per day. In patients with severe liver or kidney dysfunction, maximum dose used is 2000mg.
2. NSAIDS: these are potent anti-inflammatory analgesic specifically useful in pain related to musculoskeletal origin. NSAIDs are usually recommended for short term use with special caution in elderly and malnourished patients. COX_2 selective inhibitors like Celecoxib, etoricoxib are preferred over non selective NSAIDs in patients with GI or hematological side effects.
3. Tramadol: it is partial Mu receptor agonist which also inhibit reuptake of serotonin making it a preferred drug in moderate pain. It can be used in mild hepatic or renal dysfunction but should be avoided in severe organ failures. Rapid (parenteral) or high doses administration may reduce threshold for seizures. Nausea, Constipation and drowsiness are common adverse effect.
4. Morphine: Morphine is prototype 1st line opioid analgesic for severe cancer pain. It has strong affinity to Mu , Kappa and Delta opioid receptor. It can be given by Oral (Preferred), Rectal, Subcutaneous, intramuscular and Intravenous route. Oral bioavailablity is variable from 20- 60 %. Usual starting dose in Opioid naïve adult patient is 5mg every 4 hrly with upward titration until satisfactory pain relief. There is no fixed maximum dose of morphine, However specialist opinion in suggested in patients needing morphine more than 200mg day, as probability of potential side effects are increased with higher dosages. Constipation, Nausea and drowsiness are common side effects. Hence laxative and antiemetic should be

5. prescribed regularly along with morphine. Morphine should be avoided in severe renal or hepatic compromise.
6. Fentanyl: Fentanyl is synthetic pure Mu receptor agonist, lipophilic in nature and almost 50 -100 times more potent than morphine. Fentanyl can be used Intravenous/ subcutaneous/ transmucosal and transdermal route. It is safe in renal and hepatic dysfunction. Although safer than morphine, its cost and unavailability in oral route makes it 2nd line opioid option. Transdermal patches which works for 48-72 hour are suggested in patients with controlled pain or in patient who are unable to take medications. Patches should be avoided in patients with fever or anasarca and should not be applied over broken skin.

Highlights for chronic pain management :

1. Chronic pain can be associated with other factors, hence multimodality approach involving rehabilitation experts, psychologists, counsellors are very important.
2. Thorough assessment of pain and related symptoms is the most important step of chronic pain. Use of validated tool is recommended.
3. Use of adjuvant analgesics should be considered depending upon the type of pain.
4. Strong opioids are RECOMMENDED in patients with cancer pain, patients on palliative care or terminally ill patients. Opioids should be used with caution in patients with non cancer chronic pain. Other pharmacological and Non pharmacological approaches should be considered in such cases.

The Resurrection of Methadone for Cancer Pain Management

Dr. Naveen Salins &Dr. Anuja Damani, Department of Palliative Medicine and Supportive Care, KMC Manipal

Methadone, discovered in 1937, was used during the later stages of World War II for managing pain associated with war injuries and spasmolytic. In 1947, FDA approved it as an analgesic and anti-tussive. However, its use for pain was minimal, and due to its chemical properties, it was widely used for de-addiction in the 1960s, and in 1972 FDA approved its use for opioid dependence.

The resurrection of Methadone as an analgesic only happened in the late 1980s and 1990s for cancer pain management by the palliative care providers. This drug's various effects and advantages encouraged palliative care physicians to consider it an alternative analgesic when regular opioid use was not possible due to lack of response or toxicity.

Excellent oral bioavailability, rapid onset of action, longer half-life necessitating infrequent dosing, a broader spectrum of activity with nociceptive and neuropathic cover, safety in renal impairment, and low cost are advantages of Methadone. However, complex pharmacokinetics, the need for expertise in dose conversion and titration, cardiotoxic effects in the form of prolongation of QT interval and fatal cardiac arrhythmias, and serious drug-drug interactions limit its use.

Although Methadone may be an excellent cost-effective analgesic for cancer pain management, its use should be carefully considered by an expert, proficient in its use, weighing the benefits and the potential harm it might cause

Pain – the fifth vital sign

Padma Shri Dr.M.R. Rajagopal ,

Referred to as the 'father of palliative care in India Dr. Rajgopal is the Founder Chairman of Pallium India, a palliative care non-governmental organisation formed in 2003 and based in Kerala, India. He has named one of the 30 most influential leaders in hospice and palliative medicine by American Academy of Hospice and Palliative Medicine (AAHP) Contact : mrraj47@gmail.com

Pain is suffering.

The duty of the healthcare provider, as defined in India, is to "mitigate suffering… There exists no exception to rule"[i]. Pain from many diseases including cancer, peripheral vascular disease or from some neurological diseases can be beyond one's power of imagination. The majority of moderate to severe cancer pains, and several other kinds of persistent pain cannot be relieved without the use of opioids. This holds true for many acute pains also, including that from surgical operations, accidents and myocardial infarction.

In several of these cases, in addition to causing suffering, the pain can cause major damage by its effect on the body. Pain causes stress response which includes increase in heart rate and blood pressure which in turn can be detrimental and can cause death in someone with myocardial infarction. Moreover, pain and depression are highly intertwined and may co-exacerbate physical and psychological symptoms[ii].

Unfortunately, in most parts of the world, particularly in low- and middle-income world which forms 84% of the global population, pain is untreated or grossly under treated. In India, based on pain suffered by people with cancer, it is estimated that less than 4 % of people has access to pain relief[iii].

In the vast majority of cases, pain is easily treated with inexpensive medications. Then why does it not get done? A major reason for this failure of global medical system is the fear of opioid addiction. Addiction also causes intense suffering for people who go through it and for their families.

The clear responsibility of the healthcare system is to strike a middle path ensuring that adequate precautions are taken to prevent inappropriate and non-medical use, while at the same time ensuring access to pain relief for those who need it.

During the second half of last century, possibly in response to the global war on drugs, in 1985, India enacted the draconian Narcotic Drugs and Psychotropic Substance (NDPS) law of India. It brought in multiple barriers to access to opioids. Rules were different from state to state and usually involved three to five licenses all of which had to be valid at the same time and all of which required coordinated work of multiple agencies. It also brought in harsh penalties even for possible clerical errors. As a consequence of this legislation, opioid consumption in the country which was already low at around 600 kilograms per year came down to an abysmal 17 kg by 1997[iv]. In response to advocacy by palliative care activists and a concurrent verdict of the high court of Delhi, the department of revenue of Government of India asked all state governments to simplify their narcotic rules. Thereafter opioid consumption in the country started creeping up slowly.

After the turn of the century, possibly in a misguided attempt at correcting the under-treatment of pain, USA aggressively promoted pain relief, with a campaign effectively saying that opioids do not cause addiction. The current opioid crisis in the USA causes around 48,000 deaths per year by opioid overdose[v]. This caused a global backlash of tightening controls over opioids with a result that pain continues to be under-treated.

In short, the world has two opioid crises; the burden of suffering from the under-treatment of pain on one side and the burden of addiction to opioids on the other.

The principle of balance

The under-treatment of pain has been a reality over centuries, while the widespread non-medical and inappropriate use of opioids is a relatively new phenomenon. The former sad situation resulting in huge burden of suffering hardly receives any attention, possibly just because it existed for a long time. The inappropriate use of opioids is fairly recent and gets great visibility.

As it happens, in many parts of the world, a middle course has been operative for many decades. Almost all Western European countries and even a low-income country like Uganda and the state of Kerala in the low-middle-income country, India, are examples where the principle of balance is applicable .In essence, the principle of balance brings in enough restrictions on the use of opioids to discourage diversion to non-medical use. At the same time, unnecessary restrictions are removed to facilitate access to opioids for those in pain.

The amendment of the NDPS act in 2014 by the Indian Parliament[vi] is based on this principle of balance. Uniform rules became applicable for the whole country and a single authority in each state became responsible for a single certification for an institution to stock and dispense opioids. To a large extent, this was modelled on the new rules that were brought in the state of Kerala in 1998. For close to a quarter of a century, this has proved to work well in Kerala where more than 170 institutions which are designated as Recognized Medical Institutions (RMIs), stock and dispense opioids at the primary, secondary and tertiary

level health centers and hospitals[vii]. There has not been a single instance of any major diversion, essentially showing that the principle of balance is successfully operative.

But overcoming the legal barriers alone is inadequate to solve the current problem of lack of access to pain relief. For the future, the following steps need to be taken.

1. The amended NDPS rules need to be implemented by all of India's 28 states and 8 Union Territories.
2. The medical system must accept the responsibility to treat pain.
3. The public does not know that pain relief is a possibility. And hence demand itself may be limited. Needless suffering can be alleviated only if the medical system takes up the responsibility to look for pain and offer treatment.
4. Unrealistic fear of opioids (opiophobia) as possible addictive substances is rampant among the public as well as the administrators[viii]. We must advocate for the principle of balance so as to overcome the resistance that can come from the society.

   Fortunately, the stage is set for overcoming many of these barriers. The implementation of the amended rules, though slowly, is happening more amongst the Indian states and union territories. Pain management has been included in the curriculum by the National Medical Commission (from 2019) and by the Indian Nursing Council (from 2021). Improved awareness amongst the public and the professionals should be an important task to be undertaken to reduce needless suffering.

Pain as the fifth vital sign

Not knowing that pain can be relieved, people may be hesitant to complain of pain or seek relief from it. Hence it is important that the healthcare system must look for suffering from pain. In many institutions globally, pain is measured along with vital signs like temperature, pulse, blood pressure and respiratory rate.

As pain is subjective, the measurement can be done only by the patient. The most popular tool for measurement of pain by the patient himself/herself is the numerical scale where zero means 'no pain' and 10 is the 'worst imaginable pain'. Everyone who has significant pain is offered pain relief.

This mandates the following steps.

- The management and staff of the institution accept it as a responsibility to look for pain and offer treatment.
- The institution appoints at least two full time trained nurses to oversee the pain management program supported by pain/palliative care physician.
- All doctors and nurses in the institution undergo training in assessment and management of pain and documentation.
- Periodically (at least once a month) they undergo a refresher training.
- Every patient is asked by the ward staff, "Do you have pain?" and if yes, it is scored on a 0-10 numerical scale.
- Everyone with pain is given explanations and is offered pain management along with prophylactic medicines for potential adverse effects, particularly constipation, nausea, and vomiting.

- The pain score,[ix] offered medications and response (both pain relief and adverse effects) are documented daily.
- Documentation of the use of controlled medicines is strictly adhered to, following stipulation of the NDPS rules of 2015.
- Any disparity between the documented stock position and pill count is investigated and resolved.
- The specialist pain nurses check random case sheets (at least five) from every ward to ensure compliance.
- The pain/palliative care physician steps in to manage any pain that is difficult to treat.
- Annual consumption report of controlled opioid medicines for every calendar year is submitted to the drug controller of the state.

As is clear from the above suggested protocol, the institutions take responsibility not only for effective treatment of pain but also for prevention of inappropriate or non-medical use of opioids, thus combining efficacy with safety.

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Interventional Pain Management

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Introduction

The International Association for the Study of Pain announced the revised definition of pain as "An unpleasant sensory and emotional experience associated with or resembling that associated with, actual or potential tissue damage[1]."

Pain is one of the most common complaints for which a patient seeks medical assistance. Managing pain may have widely varied options based on a clinicians' opinion of the nature of the pain, expertise in managing the same and experience. It is definitely a major challenge both for the medical expert managing it and the patient bearing it. Complete elimination of a chronic pain may not always be possible[2]. Therefore, treatment goals have to be well defined early on to maximize reduction in pain to the best possible comfort level for the patient. The major goals would be to reduce pain to the best possible extent, maximize functionality and improve the patients' lifestyle and quality[3].

What is interventional pain management and who does it?

The concept of intervention for painful conditions was made popular in the last two decades.

According to the American society of Interventional Pain Physicians (ASIPP), interventional pain management is a 'discipline of medicine devoted to the diagnosis and treatment of pain related disorders'[4].

It is a way in which pain-relieving techniques are used to make daily activities easy and effectively improve the quality of life in patients.

Many specialties of medicine propose various treatment modalities which is familiar to them. It is a multimodal approach which yields best results. A surgeon offers surgical intervention for intractable pain while an anesthesiologist may offer pain medications as well as interventional nerve procedural techniques to relieve the pain, a psychologist may give the emotional support or pharmacotherapy may be used by a neurologist. Hence, it is multispecialty approach which is required to make pain relief effective.

Initial approach - Assessment

Interventional Pain medicine now deals with managing difficult and complex pain syndromes where conventional treatment modalities have been unsuccessful. Adequate pain management first and foremost requires an in-depth understanding and knowledge of evaluating the pain of a patient, precise assessment and quantification of the state of pain, appropriate diagnosis and cause of the pain and judicious treatment modalities [5].

In pain management, a thorough initial evaluation is a critical part of providing comprehensive care. It must include assessment of biopsychosocial factors and the medical etiology that contributes or causes the pain condition. A second critical step is to formulate an appropriate treatment plan to evaluate the causes of pain and to effectively treat that which persists despite treatment[6].

Diagnosis and treatment

Diagnostic and therapeutic interventional techniques can be valuable options prior to the initiation of extensive surgery, initiation of opioid treatment, or in concert with other treatment modalities. Many interventional pain procedures are available on an outpatient basis, which is effective in cutting costs. Some minor interventional procedures can be performed in the day care setting, while other more advanced procedures may require specialty equipment and expertise[7].

Diagnostic Techniques used for Basic Interventional pain management[2,7]

Plain X-ray is the first imaging modality that can be used to evaluate alignment of bony structures, degenerative lesions, bony erosions/ destruction of bones, some soft tissue swellings, calcifications and gaseous appearances.

Computerized Tomography (CT) scan has better spatial resolution and is important in detecting abnormalities like erosions, destruction, osteophytes and calcification.

Magnetic resonance imaging (MRI) have better soft tissue resolution.

Electrodiagnosis (EDx) of neuromuscular disorders, also called Electroneuromyography (ENMG), is used localize the site of lesion along the neural pathway and is a useful test to confirm or rule out the involvement of nerves, plexus, root or muscle level.

Diskogram is a tool to diagnose pain generators in the spinal column including cervical, thoracis and lumbar levels

Fluoroscopic guidance helps identify bony structures for contrast injections.

Ultrasound imaging has become the mainstay in interventional pain management to visualize a field of soft tissue, in joint evaluation and arthrocentesis.

Basic Therapeutic Techniques used for Basic Interventional pain management[2]

Depending on the patient and his or her medical conditions, the following interventional procedures mentioned can be performed singularly or as part of a multimodal approach to the management of both chronic and acute pain.

This list only provides examples and is not inclusive or exhaustive of what can be done

Table 1 refers to a few conditions and regional block interventions that can be done to manage the pain conditions.

Table 1

Condition	Procedure
Refractory trigeminal neuralgia	Trigeminal nerve block
Dental and maxillary nerve pain as well as extraoral facial surgeries	Maxillary nerve block
Resistant face, head, neck and jaw pain	Mandibular nerve block Sphenopalatine ganglion block
Glossopharyngeal neuralgia	Glossopharyngeal nerve block
Cervical and upper thoracic pain	Stellate ganglion block
Chronic refractory headaches	Occipital nerve stimulation
Chronic and refractory shoulder pain	Suprascapular nerve block
Thoracic and upper back pain	Intercostal nerve block Intrapleural nerve block
Upper abdominal cancer pain like pancreas, duodenal and stomach malignancies	Celiac plexus block
Chronic pains in lower esophageal, liver, biliary system, stomach, pancreas, kidney, adrenals and small intestines till right transverse colon	Splanchnic nerve block
Pain in lower limbs	Lumbar sympathetic block
Pain in lower pelvic, rectal, bladder, sigmoid and anal regions	Superior hypogastric plexus block Ganglion impar block
Pain in cervical region	Cervical epidural block – interlaminar approach Cervical transforaminal epidural block Cervical medial branch blocks and Radiofrequency Neurotomy
Pain in the lower back	Lumbar and Caudal Epidural blocks Lumbar facet joint, medial

	branch and radiofrequency procedures Lumbar plexus block
Pain in thoracic region	Thoracic paravertebral block
Pain in the lower back – sacroiliac region	Sacroiliac joint radiofrequency denervation
Coccygodynia	Coccygeal nerve block
Postoperative analgesia after knee surgery and management of chronic hip pain	Obturator nerve block
Distal lower extremity pain	Popliteal block of sciatic nerve
Chronic pain secondary to ilioinguinal neuralgia	Ilioinguinal nerve block
Persistent knee pain	Genicular nerve block and radiofrequency procedure

Advanced Therapeutic Techniques used for Basic Interventional pain management[2,7,8,9,10,11,12,13,14,15,16]

Neurodestructive techniques and Neurolytic agents:

- Chemical neurolysis with agents such as alcohol, phenol, glycerol, ammonium salts and hypertonic saline
- Cryoablation
- Radiofrequency lesioning

Percutaneous Adhesiolysis for chronic low back and lower extremity pain that is secondary to failed back surgery syndrome, spinal stenosis and severe degenerative disc disease conditions.

Epiduroscopy for patients with Lumbosacral Radicular pain following spinal surgery, who have failed to respond to conservative management and transforaminal epidural steroid injections (TFESI).

Neuromodulation techniques use device-based electrical or magnetic stimulation to activate central or peripheral nervous system tissue associated with pain pathways to produce analgesia or reduce sensitivity to pain.

Spinal cord stimulation for intractable pain conditions including angina, peripheral vascular disease and chronic pain syndromes like post lumbar surgery back syndrome, complex regional pain syndromes (CRPS), phantom limb pain and arachnoiditis.

Intradiscal Electrothermal Therapy is a minimal invasive procedure used to treat chronic low back pain due to internal disc disruption or annular tear.

Vertebroplasty and Kyphoplasty are invasive vertebral augmentation procedures developed to treat osteoporotic compression fractures.

Nucleoplasty for chronic low back pain.

Ozone nucleolysis for low back pain secondary to compression or inflammation of the nerve root.

Percutaneous Transforaminal Endoscopic Lumbar Discectomy for treatment of lumbar radicular pain due to disk herniation.

Trigger point injections can be used to treat pain associated with headaches, myofascial pain syndrome, and low-back pain. Other types of direct injections include intramuscular, intrabursal, and intra-articular injections for muscle pain, bursitis, and joint pain, respectively

Intrathecal Implantable devices to deliver spinal opioids for pain management.

Percutaneous Cervical Cordotomy for cancer pain management.

Radiofrequency ablation for spinal metastasis.

Fluoroscopy is used for many spinal procedures given its advanced ability of having better appreciation for bony structures and live fluoroscopy contrast injections.

Ultrasound imaging as a therapeutic tool can be used to provide pain relief through aspiration of synovial fluid or blood, intraarticular injection of drugs like corticosteroids or anesthetics.

Regenerative/adult autologous stem cell therapy may show promise in the treatment of multiple painful conditions.

Considerations

Interventional pain procedures are useful not only in treatment but also in providing diagnostic information for patients in pain.

To identify which procedure is indicated for a given patient's pain syndrome, a thorough evaluation by a trained pain physician is necessary. Unfortunately, pain specialists may not typically be involved in the multidisciplinary approaches of diagnosing and treating a pain patient early enough in his or her treatment, which can lead to suboptimal patient outcomes.

There is lack of expert training for pain medicine and inadequately trained clinicians may be performing interventional procedures. This trend can potentially lead to inappropriate utilization and devastating complications.

Recommendations

As a component of a multidisciplinary approach, follow well-researched interventional pain guidelines to guide the appropriate use of interventional pain procedures.

Conduct additional clinical research that establishes how interventions work in conjunction with other approaches in the process of caring for patients with chronic pain, especially early in the process, when combined appropriately with goal-directed rehabilitation and appropriate medications.

Diagnosis, treatment and management of patients in chronic pain should be done by establishing criteria-based guidelines for credentialing pain physicians who are trained in using interventional techniques.

Only personnel who are appropriately trained and credentialed in interventional pain procedures should perform interventional procedures.

Conclusion

Interventional pain management is a multidisciplinary team approach for treatment of pain conditions. It should be done effectively in order to maximize the comfort and quality of life in patients suffering from chronic pain. Hence, it is necessary to be well aware of current guidelines and techniques as well as get the necessary and appropriate training and certification to get the best possible outcome for the patients.

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The Epidemic of Unrelieved Pain – Global Perspectives, Local Solutions

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"So you're in pain is it?" the doctor asked my mother.

"It's like my whole body is on fire, and someone is running a blade into me every few minutes on top of that."

"Hmm…" the Doctor frowned, and his face took on the faraway look it tended to whenever she spoke of her pain.

"Not to worry Madam! I'll give you some medicine. You should be feeling fine soon. In the meantime, try not to think about it so much. Watch some TV or do something to take your mind off it."

"Ok, Doctor. I will do my best.

The doctor stood up, as did everyone in the room barring my mother, who forced a tiny grateful smile from the bed she had been confined to for months. Her face glistened with sweat. Not from the heat, which was well under control at a comfortable 22 degrees, but from the effort - I had now begun to recognize - to not scream from the razors cutting into her.

How, I wondered, was she to take her mind off the relentless pain?

My mother – a gentle but formidable human being, had overcome tremendous hardship through her life with grit, grace and honesty. Yet, she could not bring herself to admit to this man the true extent of her agony. To my teenage mind, it seemed as though she did not want to upset or offend him. She relied on him to treat the disease that was destroying her from the inside. And perhaps she did not want to risk making him feel inadequate.

Besides, wasn't pain an inevitable part of cancer? Surely he was doing his best and deserved to be thanked for it.

As the disease progressed, the pain got worse. I would sleep next to my mother, and wake up every night to whimpers that would grow into cries of agony, until her armour cracked and crumbled and she wept like a baby. On some days, she would suddenly fall silent, and I would lean forward to listen for her breath or place a hand over her heart to check if she was still alive.

My lifelong insomnia has its roots in those nights.

Eventually she was put on medication that had the effect of knocking her out. These were not opioids. Her pitiful cries would die down as she descended into deep sleep. Frequently though, she would make small sounds of distress, and her muscles would jerk. I was told that was a result of brain metastases and there was nothing to be done.

The silence was welcome. We could all get on with our day as she slept.

The end though, was not as we hoped. Emerging from her deep sedation, the pain would envelop her. When she finally died, there was not a single person in my family who did not feel relief that her pain had ended. We loved her dearly and the sight of her in pain was beyond unbearable.

Fast forward 20 years and not much has changed. As a palliative care provider I have often been asked by those fortunate enough never to have encountered such agony – 'Just how bad does cancer pain get?"

The truth is, I really don't know. I have personally never experienced it. But as a someone who has had a ringside view and have heard too many requests to "Please, just end this. I cannot live like this" - I can confidently say:

"Bad enough for someone to want to die".

"Bad enough to want your loved one to die".

When I accidentally (or by design – depends on how you look at it) encountered palliative care twenty days after my mother's excruciating death, it did not hit me like an epiphany.

The reaction was visceral. I was enraged. To know that the means to alleviate pain was at hand all along, and not once to have been given that option was astonishing and infuriating.

This is not an uncommon response to discovering palliative care and pain relief. Too often we encounter families who just cannot fathom why they had to wait till the patient had almost died to be able to access pain relief.

It is a tragic irony that in a country that grows and supplies a significant part of raw material for opioid medication, less than 4% have access to pain relief.

Globally, over 60 million people experience Serious Health-related Suffering (SHS). Of them, 9.9 million are in South Asian countries. SHS is greatly exacerbated by the absence of pain relief. Across South Asian countries, the availability of opioids, especially morphine tends to be concentrated in big cities, usually the capital and is markedly better in urban areas compared to rural areas. In some instances, healthcare is

decentralised and the implementation of national policies is dependent on the will and capacity of the local level governments.

A 2015 WHO backed study estimated that the average morphine equivalence, which is a proxy indicator of a countries palliative care provision, was only 1.7 mg per capita in Asia compared with the global average of 61.5 mg per capita – pegging Asia's morphine per capita consumption at 36 times less than the global average.

The availability of internationally controlled drugs for medical and scientific purposes, including for the relief of pain and suffering, remains low to non-existent in Low and Lower Middle Income Countries. The Lancet Commission for Palliative care and Pain Relief Report of 2017, called this a "medical, public health, and moral failing, and a travesty of justice."

Pursuant to the "War on Drugs" approach that emerged in the 60s, 70s and 80s, several countries adopted highly restrictive policies for control. This rhetoric has been interpreted in ways that have been reductive and harmful.

In India, for example, it led to the highly prohibitive Narcotic Drugs and Psychotropic Substances Act of 1985 – which stipulated harsh punitive action for even minor clerical errors in hospitals stocking opioids. It took decades of efforts from civil society before landmark amendments were finally made to the act in 2014. But 8 years later, the amendments have not been implemented by a majority of the states, and efforts by civil society continue.

"Opiophobia" - the prejudice and misinformation about the appropriate medical use of opioids remains a major issue. The US Crisis dominates the narrative. And while the North American opioid crisis is indeed a tremendously important issue, the fact that it is a result of illicitly manufactured and trafficked fentanyl is poorly understood. The excess of prescription opioids in some countries should not deter policy makers from seeing the crisis of pain in other countries. The singular focus on inappropriate use is not adequately evened out by the available evidence of successful achievement of balance, which we should be using as models. And this evidence exists! One example is that of the Southern Indian state of Kerala, where the government was particularly sensitive to the public demand for pain relief. Through the state palliative care policy of 2008 the government enabled people to receive palliative care, including the supply of morphine to their homes, giving them access where they needed it, when they needed it. This policy has been revised further in 2019.

A study conducted in Kerala in 2002 analysed possible diversion or inappropriate use of opioid analgesics. 175 licenced facilities report to the state drug controller annually, and he investigates any suspicious trends.

From 2002 to 2021, there has not beeneven one reported case of diversion or inappropriate use.

Major access gaps continue to exist across the country, not least amongst them being the lack of training of medical professionals in the safe and effective use of opioids for pain relief.

Misconceptions around the safe use of oral morphine abound, but we are yet to see any comprehensive

campaign to correct the misinformation. So while opioids for medical use are AVAILABLE, the remain INACCESSIBLE because of barriers of attitude inherited or misrepresented.

Other barriers to implementation include bureaucracy, poor understanding of legislation, lack of dialogue between law enforcement and healthcare providers.

https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(18)30082-2/fulltext

There exists an additional paradoxical situation many Low and Middle Income Countries, where expensive opioid medicines and their formulations are the only ones available, while low cost, immediate release morphine continues to be unavailable, last to become available, or difficult to access. And in the absence of access to low cost formulations, high cost formulations like Fentanyl transdermal patches are not just prescribed but also *promoted*, in spite of belonging to the same class, and covered by the same regulations.

If the patient cannot afford those, they are then pushed into the overuse of other, less effective medicines. Self-medication with over-the-counter prescription drugs becomes an issue. And quite alarmingly, even doctors end up prescribing medicines with terrible side effects, all of this effectively adding to the experience of suffering.

Why does that happen? Because in prescribing these, practitioners do not have to contend with the damning narratives that morphine and other opioids are subjected to.

Palliative care advocates for not just improved access but on SAFE access to opioids. For well-calibrated, compassionate and ***smart*** regulatory systems, and fit-for-purpose supply chains for controlled medicines, while simultaneously providing the additional guardrails of proper training; and appropriate, balanced and evidence-based information about the safe use of opioids for pain relief.

Going forward, lets focus on partnership – between governance, professionals and civil society.

Outside Kerala, we find another remarkable model developing in the nearby state of Telangana, where a cohesive partnership between Civil Society and the government has resulted in 33 districts (including remote ones) with access to palliative care and pain relief, in the form of home care, inpatient facilities and capacity building for frontline healthcare workers. It is a shining example of the government inviting the expertise and knowledge of a civil society group, and leveraging its own mighty infrastructure to translate this expertise into practical relief from suffering.

In every example where the principle of balance - preventing misuse and diversion while concurrently improving access for medical and scientific purposes - has been successfully achieved, the common denominator underscoring these examples is partnership between government and civil society actors. And the driver of appropriateness has been patient centredness.

Health is defined by the WHO as not just the absence of infirmity and disease but also the presence of wellbeing.

How is true health, or dignity, peace or wellbeing to exist in the presence of unmitigated pain?

A STUDENT'S PERSPECTIVE ON PAIN MANAGEMENT

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Imagine having to cook without any knowledge of spices. Imagine having to drive without an understanding of gears. And if this sounds preposterous, how is it wise to treat patients without an understanding of pain?

I completed a year of core clinical rotations at my home university a month back. Do I feel accomplished? Certainly. Am I satisfied? Questionable. Despite an incredible range of opportunities that I had the privilege to experience and learn from, I've somehow sensed a void in my journey as an intern. My growth chart has definitely gone north in terms of knowledge, efficiency and skills but are these the only determinants which should define my performance as a health care provider ?

l recall reaching the hospital at 7 in the morning. Same OPD ward drills- take orders, write orders, send labs, collect reports, leave. And after a point, I worked like a programmed machine- quick and methodical. Yet, there was an uncanny dissatisfaction that kept itching me for days. It took me a while to decode the missing piece of the puzzle-communication with the patients. And this was it. I had gone weeks admitting patients with cancer, COPD, Osteoarthritis and what not-conditions which can possibly deteriorate a person's quality of life and shatter one's will to live. Did anyone ever talk about the pain they're in?

As doctors, we often direct our efforts to objectively validate the health status of our patients by basing their conditions on values produced by machines and labs. The reliability of vitals and investigations is undoubtedly immaculate. However, I believe this is not where the role of a physician should end. It should rather extend further into more subjective and abstract aspects of a patient's health such as an understanding of the degree of pain that they're suffering from.

I was aware of the multifactoriality of pain but it was only a few months into my housemanship when I realised the true essence of it. My second day in surgery rotation when I noticed a lady with tracheostomy in my ward. I can't recall a single minute when she wasn't crying or visibly expressing her discomfort while under cooperating with the treating staff. Not to overlook, having a tube stuck to your throat can be troublesome and assuming her discomfort to be a result of the pain due to her present condition, her drug orders were rampantly updated with analgesics. It was day 3, with no improvement in behaviour, when the women was visited by her

grandkids. The lady's face beamed with joy upon catching their sight. The degree of pain and discomfort had conspicuously lessened by the hour and her affect had tremendously improved. She restored her sleep cycle and was cooperating with the staff too. The majestic lesson that I extracted from this one simple incident is likely to go unnoticed by the masses. Had one of us spent 5 minutes to introspect the matter and understand what it was that the patient really desired, we could have spared her the horror of being at the receiving end of our frustration, relying on a pile of medicines to calm down and ofcourse, surviving the grief that was associated with being left alone in a strange environment. We often tend to be on the lookout for organic causes of pain while neglecting the direct impact that the extrinsic factors might have on it.

If we talk about quality and wholesomeness, the experiences that I collected during this period differ significantly with the ones I gained during an observership at Pallium, India. I came across a lady with lymphedema who seemed nowhere close to the discomfort that I had read in the textbooks about, a child with Duchenne's muscular dystrophy who, despite a progressive worsening of his condition had his will and spirits pulled together by the content and satisfaction of being cared for and checked upon, a bread-earning , lung cancer patient whose family continued to be looked after following his demise to ensure their psychosocial and economic well being and many more of such sorts.

The manifestation of pain and associated distress can vary with diseases and disorders. However, the will to approach this pain and make the patients feel heard and attended, not only strengthens a doctor patient relationship bilaterally but also, de stresses the patients of the burden of losing the lustre of their life to morbidities such as those mentioned above. I believe ,the inculcation of pain education and efforts to improve not just the quality of life but also the quality of death by honing the end of life services in our curriculum can holistically heighten the quality of our health system.

PAIN IS YOUR FRIEND

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In the early 1900s, A surgeon-gynecologist in Germany noticed that his patients often found it difficult to adequately communicate the extent and the nature of their pain to him. What was a certain kind of pain to him, was merely all-encompassing pain to his patient. Sure, we've all been in the same boat several times; the many adjectives that describe pain often go over the heads of our patients. Boring, stabbing, drilling, devouring, throbbing, dragging and my favourite - Lancinating. Things may have changed drastically over the course of the history of medicine. Ultrasounds came into being, stethoscopes now have LED screens, and eight-legged robots can do surgical miracles.

But pain.

Pain has remained our one, true friend.

The aforementioned surgeon documented the following in German. The loose translation into English says that "*First of all, exert pressure on the area of the abdomen to be examined and ask the patient whether it hurts, then suddenly raise the palpating hand after receiving the answer and now let the patient tell you whether it hurt at the moment of lifting off or what pain was greater.*

The method can be used with the greatest accuracy, since it is not a matter of assessing the size or type of the pain, but of comparing the intensity of two pains, and this information is very reliably given by the patient."

Jacob Moritz Blumberg rather eloquently warned us about the most important thing regarding pain; the fact that it exists is enough to tell us that a patient is not okay. Even to this day, rebound tenderness, AKA The Blumberg Sign, is taught in every clinical setting imaginable. Count on a Jewish man in pre-Nazi Germany to articulate the most well-known clinical sign related to pain.

It doesn't take much to understand why pain has held its position in the pecking order of clinical communicators. Though we've all scratched our heads at the absurdity of Wong-Baker's many faces, pain is objective. Pain is real. And pain speaks back to you. First year physiology multiple-choicers remind us that pain

receptors are the only ones that do not adapt to sustained, regular stimulus. Pain is your body telling you that something is wrong: and whether that is the pain from a lancet pricking your index finger, the pain from failing your sessional by a single mark or the pain from your favourite nurse crushing over the new doctor in the other ward - Pain simply doesn't go away.

In that sense, I suppose there is a certain poetic beauty in pain. Even after years and years of medical research, we've not really cured pain. We've masked it, we've reduced it and we've referred it. But every doctor worth his money knows that pain cannot be treated with medicine, it can only be healed with time.

To the doctors and the medical students who read this: as you course through your career as a physician, many a times you will be tempted to ignore what the patient tells you. You may think that you know better, which you probably do. You may be completely assured that the patient is unable to understand you, which he probably cannot. You may even encounter a patient who is certainly running circles around you, which he is definitely capable of. But always remember, that pain is your friend.

And like all good friends, as long as you listen to what they have to say: Pain will not lie to you.

PAIN WITHOUT GAIN

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'111 days to go' Syed said as he added a vertical stroke to the tally marks on his hostel room wall. Greenish patches of algae ever bathed by the rain waters from the leaky dilapidated roofs and the thick cobwebs which looked like streamers, decorated his hostel ceiling.

'Lucky you, I have 21 days of extension in community medicine' replied his friend, who sounded disgruntled, as they started running towards the clock card machine to mark their attendance.

It was yet another night duty for Syed. The fourth consecutive one. He was almost on the verge of a complete physical breakdown. His colleague had contracted chickenpox and was on medical leave for a period of 10 days.

He has to manage alone for the rest of the week. But the workload in that hospital was relentless. The serpentine outpatient lines, the crammed inpatient wards, the overflowing ICUs coupled with understaffed organizational structure and the overworked doctors/ nurses made the hospital a nightmare to work in, especially as an intern.

It was about 3am in the morning. Syed was half asleep but he was finishing off some admission case sheets. The emergency room had calmed down a bit. Bevvied young men, vomiting and getting off their face were the only patients there.

Syed's near torpid state was suddenly disturbed by some unrest outside the emergency room. A young boy not more than 16 years was being wheeled inside. He was sweating, seemed to be in a lot of distress.

Syed quickly connected the ecg leads, pulse oxymeter and went on to check the boy’s blood pressure. Dr Raj, the final year internal medicine resident arrived there quickly. He started talking to the parents, who were visibly anxious.

'The only relevant information is that he was OK 6 hours back and suddenly developed pain abdomen which is now unbearable. He poorly localizes it to the epigastrium but it is mostly diffuse' said Dr Raj.

'Must be the garden variety of alcoholic gastritis' chuckled a fellow intern.

'Nope. Parents deny alcohol use. No vomiting either' Dr Raj sounded convincing.

'He must've taken some food outside. Kids order too much on Swiggy and Zomato nowadays' the senior nurse in the ER was already judgmental.

'No, sister. Parents say he took only home cooked food. Also, abdomen is soft, bowel sounds are present, vitals are stable, except for some tachycardia'

'IV pantoprazole shot as usual' Dr Raj went on to see other patients.

As Syed came to give the boy his injection, he noticed that he was writhing in pain. He wasn't convinced if pantoprazole would help. Yet he gave him the shot.

About 30mins had elapsed there was no change. Absolutely nothing. The boy continued to experience excruciating pain. Syed took some blood samples to run, spoke to the radiologist on call to get an ultrasound done.

Blood workup came back clean, including tests to diagnose pancreatitis. Not only was Syed dejected that the ultrasound was unremarkable, but also had to face the wrath of the radiology resident who brought the ceiling down because Syed had 'unnecessarily called for such a trivial case'.

As the rays of the sun started to touch the walls of the old government hospital, Syed was still awake, thinking what the cause of the pain could be. 'Sir, Ultrasound normal, amylase lipase normal, CECT abdomen is normal, iv pantoprazole, iv tramadol, iv hyoscine given, yet the pain isn't gone, nor do we know what it is' Syed told Dr Raj.

Dr Raj went to the boy, he started to ask some detailed history. History of consumption of unknown substance, poison, unknown medicines, tobacco, drugs, whether he passed blood in stools, urine etc. Answer was a big no for everything.

As the junior doctors stood there confused, in walked Assistant professor Dr Subash. He was considered the academic legend in that hospital. After listening to Syed and Dr Raj, Subash said 'why don't we send urine porphyrins? Raj will call the lab and arrange for it'

All that aside, the boy was still in pain, in terrible distress; he hadn't eaten, hadn't slept, hadn't even spoken to anyone.

There was a sudden silence in the wards, as the unit chief Dr Mahesh started to walk in. After listening keenly to the history, and examining, he said, 'functional, refer to psychiatry' and walked away.

Syed now started to think of the boy. Maybe everything was functional and the boy had been wasting Syed's time all along.' But the pain looked genuine to him. Syed went up to the boy, told him that all the tests done till now turned out negative and if there is anything the boy wanted to tell him. Any other information which may be relevant or irrelevant. The boy denied. Still tossing and turning about in pain.

Syed couldn't get this off his head that day. He was periodically checking on the boy and also kept tabs of his pending reports.

It was about a quarter to 7 that evening and almost all of Syed's colleagues left.

Syed, just before calling it a day, for once, found the boy peacefully sleeping in the cot.

The subsequent morning, the boy was sitting up, the pain was long gone now. Dr Raj asked Syed to discharge him. In the discharge summary, on the usual column for diagnosis, Syed had to write with a lot of hesitation- 'Pain abdomen - ?cause' after all that had happened in the eventful two days. Syed wasn't happy. Dr Raj could sense that from his face.

'It might have been an exotic diagnosis like an abdominal migraine or it might have been something as simple as gastritis which improved on its own or as the chief might have pointed out, it could all be in the head - functional pain, we would never know. But we must never lose track. If he comes back tomorrow, we must speculate, examine, retake history, repeat tests, treat him symptomatically, give him hope and then one fine day we will have an answer. Multiple discharge summaries with 'Pain abdomen ? Cause' will aid some doctor in some corner of the world, to make that vital diagnosis and mind you, you would still be a part of that success.' Dr Raj said and calmly went on to examine the next patient.

MEDICOLEGAL CORNER

A DOCTOR'S DUTY IN A MEDICAL EMERGENCY

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What is a medical emergency?

There is no legal definition of a medical emergency as per prevailing Indian law.

Oxford dictionary defines an emergency as a serious, unexpected and potentially dangerous situation requiring immediate action.

Patients' perception of a medical emergency is different from that of the treating physician.

Every patient perceives his / her illness as an emergency and wants to be examined and treated urgently.

A medical professional perceives the condition as a medical emergency only if there is a potential danger to the life.

It is the discretion of medical professionals to label the condition as a medical emergency.

In all medical emergency conditions, the priority of the medical professional is to save a life.

Article 21 of the Indian constitution imposes an obligation on the State to safeguard the right to life of every person. It is the constitutional obligation of the State to provide adequate medical services to its people.

Definition of emergency medical conditions is available in the Section 2(d) of Clinical Establishment Act 2010

"Emergency medical condition" means a medical condition manifesting itself by acute symptoms of sufficient severity (including severe pain) of such a nature that the absence of immediate medical attention could reasonably be expected to result in— (i) placing the health of the individual or, with respect to a pregnant women, the health of the woman or her unborn child, in serious jeopardy; or (ii) serious impairment to bodily functions; or (iii) serious dysfunction of any organ or part of a body;

There are several ethical and legalviews on the doctor's duty in a medical emergency.

Ethical duties come under the purview of the state and national medical councils, whereas Legal issues are dealt with in a court of law & consumer forums.

In an emergency, the priority of the doctor is to save a life. Nevertheless, often there is an unwillingness to attend to the emergency needs of medicolegal cases to evade the inconvenience associated with the subsequent legal proceedings.

There are several judgments in the court of law guiding the doctor's role in dealing with a medical emergency.

A historic judgment was held in the case Pt. Parmanand Katara vs Union of India & Ors on 28 August 1989 , that **every doctor is duty-bound to immediately attend to and protect the lives of injured victims brought before.**

Paschim Banga Khet Mazdoor Samity v. State of West Bengal (AIR 1996 SC 2426) is another landmark judgment and the first to award compensation to a patient for the denial of treatment in an emergency.

Every doctor is aware that the health and the lives of those assigned to his care depend on his skill and knowledge, referring the patient to another compatible doctor in a higher centre is acceptable, however, in the case of an emergency, every doctor must attend and stabilise to protect the life of the patient.

Once a doctor undertakes the case, he should not abandon, nor he should withdraw from the case without informing the patient and or his family. So also, a registered medical practitioner should not willfully commit an act of negligence that may deprive a patient of necessary medical care, as per judgments in Kusum Sharma & Ors vs Batra Hospital & Med. Research on 10 February, 2010.

The Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002, states that a medical professional should attend to a patient in an emergency.

There are several instances of penalising the doctors for refusing to attend to the patient in an emergency. Ex. Dr. A K Manocha and Naik Subedar K L Gulyani case of 2010, the doctor had to pay compensation of three lakh rupees, for refusing the treatment as the doctor was closing the clinic at the time patient arrived at him.

The doctor's right to decide the priority of attending the medical emergency has been upheld by the Consumer Disputes Redressal Agencies.

Consent to treatment - The RMP should document the informed and written consent of the patient in the case record. Section 92 of the Indian Penal Code gives immunity to all RMP under its clauses.

a) In the case of AIR 1987 Kerala. 52: 1986 Kerala L.T. 1026 (D.B.) in Dr T. T. Thomas v. Smt. Elisa, though the person died after declining to give consent for the needed operation, the case went against the doctor as the denial of consent was not documented in the hospital case file.

b) in the case of Gracekutty v. Dr Annamma Oommen (Kerala SCDRC), though the consent was not taken, the court considered it as just a lapse.

Choice of treatment: Unquestionably, the doctor has the discretion to choose the treatment which suits his patient, and such a decision is applicable in an emergency as well. In the case of Vinitha Ashok v. Lakshmi Hospital, it was observed that the attending doctor has the discretion about the treatment in case of emergency.

The Standard of care, skill and caution expected of a reasonable and prudent medical practitioner may not be the same during an emergency. In case of an emergency, the priority of the doctor is to save a life by following the acceptable treatment methods in the best possible ways. In the case of "New India Assurance Co. Ltd. v. Dr Kiritkumar S. Sheth," by considering the risk-benefit test, the court of law has accepted that reasonable care or skill of the doctor would depend on a variety of factors in a medical emergency.

Time taken for resuscitation is also the treating doctor's discretion,but the legalities do look into the various modes of management and observations done to a patient in the hospital.A few cases to look into these aspects are - Lekhhraj v. Bharaj Nursing Home, Amir Ali Shakir v/s St John's Medical College Hospital, Bangalore; M/s. Mangat Hospital, Jalandhar through Dr G. S. Mangat v/s Shri Harminder Singh etc

Intimation to the police: In medicolegal cases, the police should be informed at the earliest, immediately after the resuscitation efforts of the patient.

The Medical Records should be made available on the same day in case of medical emergencies and issued on the same day, if requested, unlike in routine cases a doctor or hospital can issue the medical records within 5 days of request. In places with only outpatient facilities, after stabilising, while transferring the patient to another centre, a referral letter including the note of injury, illness and the treatment instituted must be given.

Recording of dying declaration is also an important ethical and legal duty of the doctor while dealing with a medical emergency.

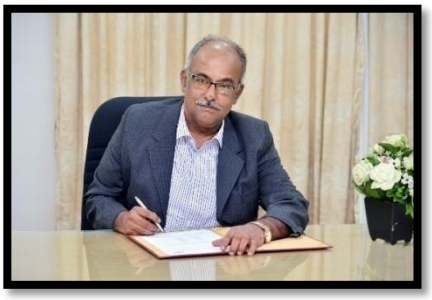
NMC draft dated 23-05-2022, mentioned in the 26th clause "the Patient care" - an RMP is free to choose whom he will serve, except in case of a life-threatening emergency. Responding to a medical emergency is the ethical obligation of an RMP but choosing not to attend a medical emergency should be justified - the incapacities (induced or otherwise) such as exhaustion, injury or consuming a substance such as alcohol or medications, to a level where the clinical judgement or skills could be compromised or hampered.

The Supreme Court has observed and stated in the case of Parmanand Katara v/s Union of India that 'The police, the members of the legal profession, law courts and everyone concerned will also keep in mind that a man in the medical profession should not be unnecessarily harassed for purposes of interrogation or for any other formality and should not be dragged during investigations at the police station and it should be avoided as far as possible. Our law courts will not summon a medical professional to give evidence unless the evidence is necessary and, even if he is summoned, the attempt should be made to see that the men in this profession are not made to wait and waste time unnecessarily. It is also expected that where the facts are so clear it is expected that unnecessary harassment of the members of the medical profession either by way of requests for adjournments or by cross-examination should be avoided.'

Summary:

- ***The legal and ethical obligations of a doctor to attend to a medical emergency are total, absolute, and paramount.***
- ***Every doctor,either in a government hospital or in private practice, is duty-bound to immediately attend to and protect the lives of injured victims brought before him.***
- ***In addition to stabilising the patient in the best possible and accepted methods, a doctor dealing with a medical emergency should also be aware of the documentation process, recording a dying declaration -if required and intimating the police.***
- ***All laws of procedure, whether in statutes or otherwise, are suspended when a doctor attends a medical emergency. Hence there is no need to be hesitant to attend a medical emergency within the prescribed standard of care.***

INTERVIEW WITH DR. P. S. PRAKASH
by
Dr. Adithi K Bhandary



Dean & Professor of General Medicine
K. S. Hegde Medical Academy, Deralakatte, Mangalore.

Medicine is continuously changing. You have seen the changes for more than four decades. Sir, could you tell us about your initial days in medical school.

I joined BMC in October 1974. I wanted to take up agricultural sciences, as I had a maternal uncle who had done his master's at that time and he was a role model. I could not clear the entrance exams. Then I opted for medical school and since then it has been a long journey. It is quite surprising that I will be completing 50 years of joining the Bangalore medical college in 2 years.

I was an average student. Those were the hard days. The area we were residing in was attached to Bowring and Lady Curzon hospital at Shivajinagar for our clinical posting in the morning and later we had to come to BMC in the city market area for the theory classes. Cycling about 12-15 Kms every day was a pleasure at that time. Later I Went on to do my PG from MMC, Mysore.

How were the physician opportunities then?

Well, the opportunities during our internship and postgraduation were great. Since I had done my UG & PG from Government Medical College, the caseload, exposure, and hands-on experience were great. We had no Skill labs. We had to practice directly on the patients. In a way skill lab concept is good, but this has to be later on translated into the real patient, which I don't see.

Can you tell us about your experience outside India? You came back to the academic setup, started the department, and Risen to the post of dean of the college. can you share your journey?

I was throughout in academics only, but the approach was different from what I was used to in the last 10 years. Initially during my tenure at KMC, Manipal I had similar working pattern, but my tenure at Libya was quiet different as there was no organized system, no superspeciality units (each medical unit was assigned to one Super Speciality). In a way that helped me also as our unit was attached to Neurology. On coming back lots of changes had happened in Medical field in India, but the excellent work culture which imbibed at KMC Manipal really helped me. It took me a year or so to get back on the track. I had a great privilege of working under and guided by Dr. Amarnath Hegde. I had to suddenly takeover as HoD in 2005 under unfortunate circumstances. I

had to take the Department through 1st MCI Inspection for starting PG course. We started with 2, went on to become 6, 12 and presently the Department has 17 PG intake, which I am proud of. Later on apart from my academics, the administrative post as HoD, preparing the Department for various inspections gave me lots of insights and confidence to deal with the Dean's post.

Medical education has seen a sea of change. What has your experience seen?

Yes, seen a lot of changes. In our daysthe Medical Education was teacher centric, where in whatever our teacher tells or does were gospel truth. The pass percentage has not been more then 50 -60% and distinction was unheard off. Now the pendulum has swung to the other extreme, Distinctions are quiet common, that too in the 1st MBBS, failing is rare. May be exam process has been reformed or there may be other causes.

CBME - do you think it's old wine in a new bottle. Your take on it

The concept is good, but the way in which it is implemented, well should say old wine in a new bottle. It requires a lots of training the faculties, increase in the number faculty etc. Skill assessment certification should also be realistic.

The dwindling tribe of physicians. What is the cause and what will be the future

You mean broad specialties. Yes I am afraid broad specialty may become like present day MBBS. This is mainly because the misconception among the public that they need to be seen by the best in the field. We Doctors also fail to keep updating ourselves and also fear of litigations.

Could you share any interesting experiences of yours in the field as a student, as a teacher, or as an administrator

Interesting experience as a Student was the Bedside clinics taken by Dr. K.G.Das, a great Physician and a teacher par excellence is worth remembering even now.

Interesting experience as a Teacher wasAttending PG class 8 – 9 am particularly the case presentation classes has really been a great experience.

Interesting experience as a Administrator is Going through all PG thesis, about 65-70 of them and the way it is written is again an interesting experience.

Your final message to the youngsters and students

To work towards gaining the trust of the people and respect this profession on once commended.
Remember patients now a days are well informed, so you need to constantly update your knowledge and upgrade your skills.
Communicate appropriately and document the same. Remember – if not documented then it has not happened.

INTERVIEW with Dr Jayaprakash Alva
by
Dr Veena J Pinto

Dr Jayaprakash Alva, Professor of Medicine, Former Dean of Father Muller Medical College

Medicine is constantly changing. You have seen changes for more than few decades. Sir can you tell us about your initial days in Medical school?

Dr. JP Alva: My Under Graduation at BMC was in the year 1977 following which opportunities were limited. Medical Colleges with PG facilities were a few. That stage I had decided that I will be pursuing either Medicine or Pediatrics. The process of selection was also different. It was purely based on merit and your experience as SR in any of the institution. At this juncture I took up residency at Manipal in the department of Pediatrics. I liked the subject and I was committed to it. During that time there was an opportunity to get into Manipal, as my dad was working as engineer there. And I was initiated into pediatrics which I did for two and a half years. As I completed DCH I had three options, to pursue MD Pediatrics, MD Medicine or to go abroad. Good old days we had to obey our parents and I remained in Mangalore and with a sheer stroke of luck, I appeared for an interview for MD Medicine at Command Hospital, Bangalore, where I took a chance. I did pretty well and I got an opportunity to pursue Medicine. That's when I changed my field from Pediatrics to Medicine. The work environment at Air Force Hospital was very meticulous and did suit me considerably and I completed my MD Medicine there.

Sir, how were the opportunities for physicians then. How was your time immediate Post Graduation?

Dr J P Alva: Following PG I had few opportunities like getting into practice, very few Medical Colleges to take up job or to pursue further studies abroad. In the country opportunities were very limited, that time I was interested in Neurology. My attempts did not succeed and I continued with M D Medicine as lecturer in the Department of Medicine. The first institution that I joined was Kempegowda Institute of Medical Sciences, Bangalore. Journey there for 5 to 6 years was memorable. Not only working in the various set ups the institute was attached to, I was asked to go to their new attachment namely ESI, I did take it up despite of people scaring me about it. Then finally I ended up in parent institutions' new hospital. Willingly I took up every responsibility in academics and various activities in the institution. The experience was so good that if I think if I owe anything, it is to Kempegowda Institute of Medical Sciences. Most memorable event to quote, that I was selected as the best teacher by a batch of outgoing

batch of students during their farewell meeting. I was overwhelmed when I came to know that I had a higher voting than my own teacher.

Question: Sir, can you tell us about your experience outside of India.

Dr JP Alva: After about 5 to 6 years at Kempegowda, I felt there were things which were a hindrance to my progress. At that juncture I thought I should take a call to continue there or go somewhere else. By sheer coincidence a friend of mine who had come from Riyadh asked me whether I would be interested to go there. So I discussed then, thought about it, as I was not progressing academically and monetarily I thought of taking the plunge into something. I went to Riyadh, not an academic but a private set up. But it was a different scenario. We were seeing only out patients, there was no hospital attachment, very rarely people would be willing to get admitted under you, so we used to refer them to any of the major hospitals. I spent 5 years there. This experience gave me lot of confidence in dealing with the patients. Being alone we had to take decisions on our own. At the end of it I had a good crowd, but back home in India my family was not comfortable. In life money is not the only criteria and as they were not happy I moved back to India.

Sir you came back to academic set up after a break of 5 years, been part of medicine department and have risen to the post of Dean. Can you share with us your journey from a staff in a department to Dean of an Institution?

When I came back in 1999 to Bangalore, my children had some respiratory issues so I wanted a change to Mangalore and then my dad was also there in Mangalore. It was sheer coincidence there were 3 Medical colleges in Mangalore, they had just started. I never realized that my 8 years' experience at KIMS was such a huge benefit to me, I was like a hot cake as far as any medical college was concerned. I opted for Fr Mullers. I didn't have a plan for the future but I followed one of the instructions by my father, whenever you are in a place keep one foot out, so I was practicing at the same time. So that if something goes wrong I should have a base to continue. So I started my work in College and my practice simultaneously. And before I could wink I got the opportunity to become head of the department and I took up the responsibility. With the good background that I had at Kempegowda I did not have any difficulty getting in the seat. Initially I was worried whether senior staff of the department would adapt to the style of my functioning but I had extremely co-operative staff at Fr Mullers. And my journey as Professor and head of the department was good and the opportunity that Fr Muller gave, to go ahead with the department was something unimaginable. Everything that I demanded for the department was agreed upon by the management. We started the present ICU at Fr Mullers during my tenure and it has grown in strength, the transition of this ICU was phenomenal. We also started a small dialysis unit, but it did not take off in a big way. As things were going I had second opportunity were in I had an opportunity to become head of another institution. So after 5 to 6 years in Mullers I moved to AJ Institute of Medical Sciences as the dean there. I was there for about 3 years, again a place with phenomenal potential. Each place has its pros and cons, and at a particular stage when I felt progress is not as per expectation in my own calculation I decided not to continue in that set up. At that juncture I left AJ and again I had an opportunity to work in Fr Mullers as Dean of the institution. This opportunity continued for a longer time than I anticipated,

almost 13 years. I saw the transformation of Fr Mullers from old primitive buildings to the most sophisticated Institution inn Mangalore and probably state. I was so happy to see it grow, college saw a phenomenal change during that period. The most satisfying thing as far as I am concerned is increasing of PG seats in most departments, starting of super speciality departments and the wonderful feeling that I have is about starting the Simulation center. We started off in a small way and for my good luck there was an International conference had to be organized and when I approached the management, they wholeheartedly agreed to host it along with the main sponsor, that is when the simulation center became a full-fledged simulation center.

Question: Medical education has seen sea change. What is your opinion sir?

Dr J P Alva: There has been a phenomenal change as far as medical education is concerned be it UG or PG program. Opportunities have increased, unlike limited seats when I was young, now we have a large number of seats. I personally feel that system is getting diluted with more number of medical students and more number of medical colleges. Teaching material may not be up-to the mark at many institutions. The commitment to the profession is becoming a questionable one. I do not know whom to blame. Whether it is the new norm of a so called concept of smaller family where children are being pampered and the same time teachers getting into the medical colleges are not as committed as they were when we started our medical education. There is a necessity for both the things to change, namely I think students with right aptitude should get into the course, not because of the monetary resources or because parents compel them to join. When there is no aptitude there is always trouble, both for the student as well as for the institution. That particular thing should change and it should happen at the level of parents and the level of committed teachers. If we don't have committed teachers, things will not progress the way it has to be. I think that is the crux of the issue at the moment as far as medical education is concerned. Since the das that I have joined there was a great stress on starting medical education unit. At one stage when we started having a medical education unit I used to wonder what they were trying to achieve. But over the years the contribution of medical education units in inculcating the necessary teaching skills and newer methodologies that need to be adapted by the staff is tremendous. All these changes have been for the good. Medical education units have a done a phenomenal job in training staff in how to adapt to the students, how to teach in most appropriate way and how to cultivate a better methodology every year which will beneficial not only to them but also to the students.

Question: Sir, recent Covid pandemic forced us to explore and adapt new teaching methodology, online methodology for teaching learning and assessment. Can you share your experience of heading a medical institution during this time?

Dr J P Alva: I do not know whether it was my good or bad luck to be there in the institution during that time. But it has been a great experience both in terms of administrative as well as academic front. Administrative front we had to review the whole working of the institute and of the hospital. And it was difficult one in the initial days. Trying to bring in committed work during the pandemic. And at the same time the fear that covid had put in our minds in the early part. Then as days progressed we all got adjusted to it and about 4 to 6 months of the pandemic we started accepting the scenario. People started co-operating. We had to review the working pattern of the institution which all of us had get adjusted to.

Covid brought in a new thing as far as my life was concerned. Due to my age I moved out from seeing patients. I had never missed a day getting into the ICUs and since the onset of Covid till second cycle was over I never entered the ICU as my age was against me. I started wondering whether I would be losing the touch of medicine. But then over a period of time I started getting into the OPD, by the time I was thinking of getting into the wards I was due for my retirement. Academics was a wonderful experience, we had to keep the students occupied. Initially we thought of doing it in the institution itself, then keeping the flock together in the hostel was a difficult situation and we advised students to move to their homes. The online program was not a very happy one. Despite all the guidelines we implemented, students did not take it up in the right way. There were quite few hurdles in implementing the online program. On the whole we did a good job. But having said that there is nothing like face to face contact and the art of bed side teaching which was lost completely during the pandemic. And I was wondering how students can get that experience which they had missed. And I have been trying to interact with my colleagues to give them a push so that they make up with the clinical methods. The eye to eye contact is most important as far as the patient care is concerned, individual without this art cannot be a good doctor. That is where I thought the flaw was as far as online teaching was concerned. From the second cycle onwards we have brought the students back to the main stream. One batch has completed the MBBS program and I always think they should commit themselves during internship program. Post graduates I must say hats-off to them. There were many reservations on their part of initially, they had fear, their parents had fear. Over a period of time they got adjusted and extended a phenomenal hand in taking care of the covid patients. I must express my sincere gratitude to those PGs for their commitment. They had few drawbacks as far as their teaching was concerned. They have learned different things I am sure in coming days they will come out as better doctors as they have seen patients in different scenario.

Sir coming to CBME. Do you think it is old wine in new bottle? What is your take on it?

Dr J P Alva: CBME has been a phenomenal change. No way that I would accept it as old wine in new bottle. Unfortunately, we could not give the students what was suggested by the syllabi. But the way the CBME has been formulated and if it can be implemented the most appropriate way it is going to be a game changer. Students of first and second year who have gone through CBME program and their exam. I think there is a lot more they need to be taught. This has to come by not only their own effort and also by a change that has to be adapted by the teaching faculty. I think many of our teaching faculty have still not got adjusted to the CBME methodology. But if it can be adapted, absorbed and put into practice it is going to be phenomenal thing in terms of knowledge and experience as far as the students are concerned. I am so impressed with the question paper of first and second year and in fact on few situations looking at few questions I thought it is time for me to leave the medical program. Because the questions were so well prepared. And if one can know the basics well, one can adapt to CBME very well. I have been telling the students whenever I have been interacting with them don't forget your basics.

The so called graded program of MBBS, teaches you the first year subjects then there is a transition to what is likely to change in the body from normal physiology to abnormal and putting into practice the knowledge about the basics and abnormality into clinical medicine is what gets you into the good approach to a given patient every time. And with the present method, that is being adapted through CBME I am sure if well implemented it is going to be a huge boon as far as the students are concerned. I feel it should be

accepted wholeheartedly, adapted and practiced. I am sure there are going to be some teething problems but down the line in ten years I am sure CBME is going to be a boon to the doctors of our country.

The dwindling tribe of physicians. What is the case now and what will be the future?

Dr J P Alva: Every one of us should be aware that we can live our life with MBBS. Once you decide to pursue a branch, you should be committed to it wholeheartedly. With the present changing scenario earlier MCI and now NMC under the guidelines of Govt. of India, the opportunity to pursue speciality is far better than my own good old days. It is only the question about people accepting what is good for them. And I always get worried

when quite a few of the current generation students start accepting a program because of compulsion from family members. And secondly one should know that there is enough and more opportunity to continue with their profession in academics by stopping at MD or MS or they have enough opportunities to pursue super-specialization. Super specialization I think too many seats have been created, with the available opportunities it should not get diluted. Secondly with the large number of medical colleges that have been started, there is need for large number of specialists from broad specialties and by opening too many people into super speciality the number in specialities might dwindle. And many of the colleges may not find the right combination of teaching staff available to them at any given stage. And I think it should be a continuous process by the Govt. by interacting not with the small group but a large group feedback continuously. For me everything should be put on public domain well ahead not few days before implementing. I personally think anything that has to be implemented should be given a year or two get the necessary feedback over a period of time. Do the necessary modification according to the need and then start implementing. If things are implemented in great hurry to achieve something, then it is going to be in bad taste. Now at the end of MD you have an opportunity to pursue academics, to pursue practice opportunity to specialize and also opportunity to get into other fields like hospital management so on so forth. When opportunities are increasing there has to be more and more people getting into the program. In the clinical departments there has to be a difference between those who take up purely academics, they should be paid. Like in All India institutes, where they are paid well and they have committed staff all the time. This commitment is not seen in many of the private set ups because the pay parity is different. And how to encourage people take up research which is the need of the hour. It is not taken up as they are not given enough incentives for that. Unless these things are discussed and sorted. Same scenario as opportunity surfaces, people will be questioning every step they would take as far their future is concerned.

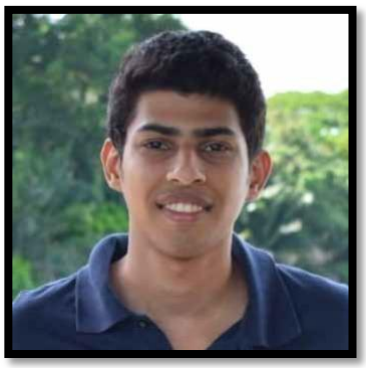
Question: Final message to young physicians and students?

Dr JP Alva: Start enjoying what you choose. If you are not enjoying don't continue. What am I getting from this program? What am I getting out of my commitment? When I have taken responsibility of a commitment I have seen what are my terms and conditions. And I have enjoyed every bit of it and I have never grumbled about it, because my mind was very clear when I accepted my responsibilities. So I would like each one of you to be very clear what you are accepting, once accepted you should be dedicated and you should put full hearted effort into your job. Once you get in there if you grumble management is that, facilities are like that you cannot be happy.

Depending on your motivation you can get many a things provided you have the right way to approach the necessary people. Decide what you want be sure that you would be enjoying it and once you start enjoying it you will start achieving.

If you are working on the rationale of what I am going to get out of this, you are not going to enjoy. I wish all the new breed of physicians and students in medicine PG program success and I wish each one to pursue what they dream for.

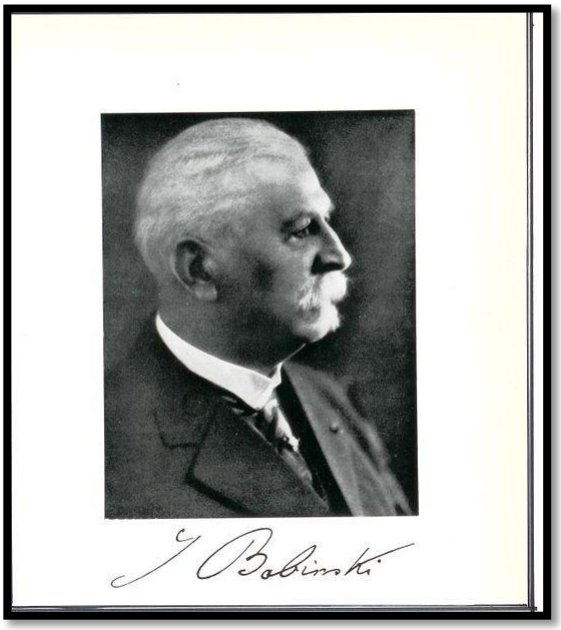
POSTGRADUATE CORNER
MEDICAL EPONYMS



Dr. G.G. Akshay Prabhu ,Resident , Department of Internal Medicine **,**Kasturba Medical College, Mangaluru **,** Manipal Academy of Higher Education. Contact-ggakshay@yahoo.co.in

Joseph Jules François Félix Babinski was a French neurologist of Polish origin and is celebrated for his discovery of the plantar reflex.

Babinski worked in a clinical arena dominated by Charcot. He first appeared as a prospective anatomist and pathologist during the earlier years of his internship (1880-1885). However, following his contact with Charcot during his clinical at the Salpêtrière Hospital, Babinski abandoned histology and pathologic anatomy in favor of studying the living rather than the dead. He became a sole practitioner of clinical medicine from then on.



The Charcot Bouchard controversy

One of Charcot's first students was Charles Bouchard. Bouchard was an ambitious and hardworking man who with the help of his mentor, quickly rose through the ranks of academia and became a full professor at

Jean Martin CHARCOT (1825-1893) giving a clinical lecture at the Salpetriere. Engraving after painting by Andre Brouillet. Dr Babinski hold the hysterical patient, while Mme Bottard, the chief nurse, looks on.

the school of medicine in Paris. Bouchard's connection with Charcot worsened after he was promoted to professor. Their contrasting personalities, aspirations to open their schools, and quest to become the most powerful man in the medical school, culminated in rivalry. The most devastating outcome of this rivalry occurred in 1892 when

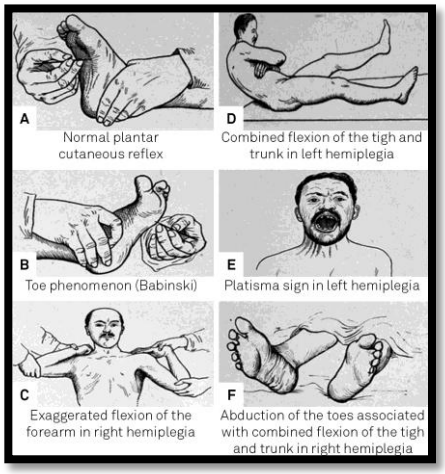
Bouchard presided over agrégation tests in which Joseph Babinski, one of Charcot's youngest pupils, was a candidate. Charcot wanted his student to be nominated, but Bouchard got rid of him so he could nominate his pupils. The nominations were appealed but finally, Bouchard's decision was upheld. Babinski was thoroughly disappointed and never retook the exam. With no support following Charcot's death in 1893, he quit his position at Salpêtrière and moved to the Pitié hospital.

These rather hapless turn of events would eventually lead to the discovery of probably the greatest sign in clinical neurology.

The Babinski's sign

Babinski had plenty of time now that he wasn't teaching. He devoted himself to pursuing Charcot's work on hysteria even after his death. His principal field of research was differentiating hysteria from organic diseases. He disagreed with Charcot on several fundamental basics, but he remained committed to his teacher. One such example is the Babinski reflex or "the phenomenon of the toes" as he called it. Babinski claimed that it differentiated hysterical epilepsy from that of organic causes in all cases. Babinski's discovery of this abnormal reflex was not merely by chance but quite more so a careful observation. Anecdotal records maintain that during one of the clinical rounds, Babinski observed upward movements of the toes, when the wind blew the window curtains across the feet of a paraplegic patient. He tested the

sign in hemiplegic patients and compared it to those with hysteria. He described the sign on two accounts in 1896 and later in 1903 when he added the fanning component and linked it to the corticospinal tract.



Differentiating hysteria from hemiplegia of organic cause (figures reproduced from the book by Babinski and Froment)

Eponyms attached to Babinski

- ***Babinski sign I(Babinski reflex)*: A pathological reflex in lesions involving the pyramidal tracts characterized by extension of the great toe and fanning of the other toes when the sole of the foot is firmly stroked.**
- ***Babinski sign II (Babinski ear phenomenon*: Galvanic test for unilateral hearing disturbance.**
- ***Babinski's sign III*: Diminution in or loss of ankle jerk reflex. A sign of sciatica and is used to differentiate it from hysteric sciatica.**
- ***Anton–Babinski syndrome (cortical blindness)*: A condition characterized by a denial of vision loss associated with confabulation in lesions of the occipital lobe.Named with neurologist Gabriel Anton.**
- ***Babinski–Fröhlich syndrome* (*Adiposo-genital syndrome)*: A rare childhood metabolic disorder characterised delayed puberty, hypogonadism, and obesity associated with a tumor impinging on the hypothalamus.**
  Named with pharmacologist Alfred Fröhlich.
- ***Babinski–Froment syndrome*: Vasomotor and trophic disorders, diffuse amyotrophy and muscle contractions subsequently to traumatic tissue damage.Named with neurologist Jules Froment.**
- ***Babinski–Nageotte syndrome*: Syndrome seen in unilateral bulbar lesions of the medullobulbar transitional region of syphilitic origin.Named with neurologist Jean Nageotte.*Babinski–Vaquez syndrome*: Tabes dorsalis associated with cardiac and arterial pathology as late manifestation of syphilis.**
  Named with hematologist Louis Henri Vaquez.
- ***Babinski–Weil test*: Test for demonstration of a laterodeviation in case of vestibular disorders. Named with neurologist Mathieu-Pierre Weil.**

JOURNAL SCAN

Section Editors

Dr Chakrapani M

Dr B.Sadananda Naik

Summaries of important published articles

Aspirin dethroned in the primary prevention of cardiovascular diseases

Aspirin Use to Prevent Cardiovascular Diseases Preventive Services Task Force Recommendation Statement

- US Preventive Services Task Force. Aspirin Use to Prevent Cardiovascular Disease: US Preventive Services Task Force Recommendation Statement. JAMA. 2022;327(16):1577–1584. doi:10.1001/jama.2022.4983
- The US Preventive Services Task Force (USPSTF) concludes with moderate certainty that aspirin use for the primary prevention of CVD events in adults aged 40 to 59 years who have a 10% or greater 10-year CVD risk has a small net benefit.
- The USPSTF concludes with moderate certainty that initiating aspirin use for the primary prevention of CVD events in adults 60 years or older has no net benefit.

Cardiologist Endorses Anti-diabetic Medicine:

Braunwald E. Gliflozins in the Management of Cardiovascular Disease. N Engl J Med. 2022 May

26;386(21):2024-2034. doi: 10.1056/NEJMra2115011. PMID: 35613023.

- In this comprehensive upto-date narrative review, Prof. Eugene Braunwald discusses the role of Gliflozin , which is an antidiabetic medicine, in the management of cardiovascular diseases. This review begins with the history of invention of Phlorizin and its action in inhibiting glucose reabsorption from renal tubules. Evolution of Cardiovascular Outcome trials are explained which were linked to development of antidiabetic drugs with beneficial effects on cardiovascular mortality. Landmark trials like EMPA-REG, CANVAS, CREDENCE and DECLARE-TIMI58 are briefly summarized. Concept of the benefit being much more prominent in patients with higher cardiovascular risk at enrolment is explained.
- The review also highlights the benefits in heart failure with or without diabetes. Role of Gliflozins inpatients with reduced and preserved ejection fraction is discussed. Prof Braunwald explains the mechanism of action of Gliflozins in renal tubules and also in the myocardium with simple diagrams.

- Kidney-heart link is also explained with diagram. The review concludes with a brief summary of current position of Gliflozins in Heart failure Guidelines. This single author narrative review by a top cardiologist in a top-rated journal will be useful for consultants and residents.

Higher Cut-off of Ferritin for diagnosing Iron deficiency in adults:

Abou Baker NM, Davis AM. Gastrointestinal Evaluation of Iron Deficiency Anemia. JAMA. 2021 Oct26;326(16):1624-1625. doi: 10.1001/jama.2021.11604. PMID: 34698802

- American Gastrointestinal Association has released guidelines for GI evaluation of Iron deficiencyanemia which has been published as Synopsis in Oct 2021 issue of JAMA. The main highlight of the guideline is the importance of identifying iron deficiency anemia in men and post-menopausal women who may have underlying GI malignancy. The important concept is the revised cut off of ferritin for diagnosing iron deficiency anemia. It is noted that ferritin <15 ng/L may not be sensitive enough to diagnose all cases of iron deficiency and that cut off level of 45 ng/L would increase the sensitivity significantly without compromising the specificity for diagnosing iron deficiency. There is a strong recommendation for Bidirectional GI endoscopy (both upper and lower GI) if ferritin levels are <45 ng/L among males and postmenopausal females to rule out GI malignancy. It is noted that Fecal Immunochemical Test (FIT) for occult blood is not sufficiently sensitive enough to rule out Upper GI bleed. H. Pylori could also be the underlying cause for iron deficiency which can be diagnosed by Stool antigen test for H. Pylori rather than serological tests. If GI bleed is not detected in patients with iron deficiency, IgA and TTG levels could be estimated to rule out Coeliac disease.

COVID 19 – Far from Over:

Del Rio C, Malani PN. COVID-19 in 2022-The Beginning of the End or the End of the Beginning? JAMA. 2022 May 27. doi: 10.1001/jama.2022.9655. Epub ahead of print. PMID: 35622357.

- In a viewpoint published in JAMA recently (JAMA Published online May 27, 2022) titled COVID-19 in2022—The Beginning of the End or the End of the Beginning? – authors Carlos del Rio and Preeti Malani discusses the current perspectives on COVID cases. Month of May 2022 has seen a small but significant rise in the number of new COVID infections. This is a worrying trend considering the fact that we believed that COVID would be expected to be downgrading towards an endemic state.
- Reasons for this rise could be emergence of new omicron variants like B.A2 and B.A2.12.1, waning immunity after natural infection and vaccination and lifting of precautionary measures. The newervariants of Omicron are much more infective and are spreading across continents very fast.
- However, severity of the disease is less, partly because of reduced virulence and partly because of immunity in the community. Even prior Omicron infections provide only partial protection against infection with B.A2 variants.
- Masking regulations may come back again. One way masking (otherperson is not wearing a mask) may not offer the best possible protection. It is important for thehealth care providers to wear mask to

- prevent high risk and immunocompromised patients fromgetting infected since infection and transmission are only marginally reduced after vaccination.
- Vulnerable patients can still have substantial risk of severe disease. Though protection frominfection wanes quickly (within about 4 months) after vaccination and infection, there is durableand persistent protection from severe disease and hospitalization. Hybrid immunity (combination ofnatural infection and vaccination) offer the best possible protection.
- Vulnerable population shouldreceive their booster dose

JOURNAL PUBLICATIONS OF OUR MEMBERS FOR THIS QUARTER

Dr Vishak Acharya et al:

1. Mendonca J, Acharya V, D'souza S, et al. In pursuit of the primary. Breathe 2021; 17: 210142. https://doi,org/10.1183/20734735.0142-2021. Scopus indexed, Q2, 0.68.

2. Santosh Rai, Vinay Alva, Priya Pathak, Vishak Acharya, Jane Mendonca. Another rare facet of the ubiquitous mould. Chest Disease Reports 2022; 9:9837. https://doi.org/10.4081/cdr.2021.9837. Scopus indexed, Q4.

3. Rai S, Gadwal A, Gopal S, Shivananda P, Vishak A, Griselda N, Saubhagya S. Efficacy, Feasibility, and Safety of Percutaneous Image-Guided Catheter Drainage of Thoracic, Abdominal, and Pelvic Fluid Collections. [version 1; peer review: 1 approved] F1000Research 2022, 11:323 https://doi.org/10.12688/f1000research.109978.1. Q1, Scopus indexed, 1.1.

4. Rai S, BS V, Acharya V et al. Efficacy and safety of CT-guided percutaneous fine needle aspiration and biopsy for malignant pulmonary lesions [version 1; peer review: 1 approved]. F1000Research 2022, 11:411. https://doi.org/10.12688/f1000research.74518.1. Q1, Scopus indexed, 1.1.

5. ThomasAntony, K.Vishak Acharya, B.Unnikrishnan, N.S.Keerthi. A Silent March- Post Covid Fibrosis in Asymptomatics-A Cause for Concern?. A case report. Indian Journal of Tuberculosis, 25 May 2022. https://doi.org/10.1016/j.ijtb.2022.05.004

Dr B.Sadananda Naik et al

6. Naik BS, Basu A. Pressure ulcers (bed sores): Medical & legal perspectives. Journal of Forensic Medicine and Toxicology. 2021;38(1):90-1. DOI: 10.5958/0974-4568.2021. 00017.X

7. Naik, Sadananda B., and K. Ramesha. "Paternal diabetes screening: Obstetrician's novel and noble obligation to an unborn child." APIK Journal of Internal Medicine 10.2 (2022): 139.
DOI: 10.4103/ajim.ajim_116_21

Dr Abhijith R Rao et al

8. Rao AR, Kumar S, Dhekale R, Krishnamurthy J, Mahajan S, Daptardar A, *et al*. Timed up and go as a predictor of mortality in older Indian patients with cancer: An observational study. Cancer Res Stat Treat 2022;5:75-82

9. Webb T, Verduzco-Aguirre HC, Rao AR, Ramaswamy A, Noronha V. Addressing the Needs of Older Adults With Cancer in Low- and Middle-Income Settings. Am Soc Clin Oncol Educ Book. 2022 Apr;42:1-10. doi: 10.1200/EDBK_349829. PMID: 35427187.
10. Utilization of technology among older Indian patients with cancer: A cross-sectional study": Rao AR, Gattani S, Castelino R, Kumar S, Dhekle R, Krishnamurthy J, et al. Utilization of technology among older Indian patients with cancer: A cross-sectional study. Cancer Res Stat Treat 2021;4:656-62.

Dr Archith Boloor et al

11. Measuring the availability of human resources for health and its relationship to universal health coverage for 204 countries and territories from 1990 to 2019: a systematic analysis for the Global Burden of Disease Study 2019-The Lancet- Volume 399, Issue 10341, 4–10 June 2022, Pages 2129-2154
12. Global, regional, and national sex differences in the global burden of tuberculosis by HIV status, 1990–2019: results from the Global Burden of Disease Study 2019- Ledesma, J.R., Ma, J., Vongpradith, A., Boloor A, ...Murray, C.J.L., Kyu, H.H.-- The Lancet Infectious Diseases 2022, 22(2), pp. 222–241
13. Estimation of the global prevalence of dementia in 2019 and forecasted prevalence in 2050: an analysis for the Global Burden of Disease Study 2019--Nichols, E., Steinmetz, Boloor A, J.D., Vollset, S.E., ...Murray, C.J.L., Vos, T-- The Lancet Public Health, 2022, 7(2), pp. e105–e125
14. The global burden of adolescent and young adult cancer in 2019: a systematic analysis for the Global Burden of Disease Study 2019- Alvarez, E.M., Force, Boloor A L.M., Xu, R., ...Bleyer, A., Bhakta, N.-The Lancet Oncology 2022, 23(1), pp. 27–52

DR. ARCHITH BOLOOR
BOOKS

• An Insider' s Guide to Clinical Medicine -Second Edition (Publisher - Jaypee Brothers Medical Publisher, ISBN - 9354654452)
• ABC of ECG (Publisher - Jaypee Brothers Medical Publisher, ISBN - 9354657494)

AUTHOR INSTRUCTIONS

API DK LAHARI is a quarterly published magazine of API D. K. Chapter, released in print version and on the www.apidk.org website with archival options of all the issues released stored in PDF format (each issue) also with a download option. The magazine will include academic and non-academic articles. The languages included will be English and Kannada.

We are hopeful that this will give a unique opportunity to all API members to share their vision and views on various aspects of our profession and beyond.

Submission Email Id: **editorapidk2020@gmail.com**

Instructions on preparation of the manuscript to be submitted

1. Manuscript may be in English/Kannada.
2. Font size -12 (Times New Roman), double spacing, 1.5 inches margins all around the page.
3. All the write-ups should include a Title page with author information
4. Title Page should contain the following: Full name/names of all the authors with contact address, cell number, email id, designation, position in the Institution and a passport-sized recent photo

Paper/write up categories

1. Scientific articles
2. Member‘s accomplishments
3. Obituaries
4. News and Views
5. Residents corner
6. Viewpoint
7. Medico legal pearls
8. Journal Watch
9. Patient page
10. Listen to the legend
11. Life beyond medicine [Non-medical topics]
12. General health articles [more for lay public]

SCIENTIFIC ARTICLES

- Case reports
  - Word count- 1500, Maximum of 03 tables & or figs, 07 Refs
- Review article
  - Word count- 3500, Maximum of 5 tables or figs
- Academic challenge
  - An interesting case presentation with detailed academic discussion
  - Abstract, word count -3500, Maximum of 5 tables or figs
- Diagnostic test and interpretation
  - Word count- 1500
- Images in Medicine
  - Photos with good resolution and quality, Word count -500
- An abstract is required for case report, Review article, Academic Challenge, and Diagnostic test and interpretation.
- Word count is inclusive of abstract.
- References should be in Vancouver style.
- Member's accomplishments
  - Brief information by self or others on the accomplishments of our API members in profession, public life, academics and other walks of life .Word count- 1000
- Obituaries
  - Condolence message and short write up on the deceased member, One message -500 words
- News and Views
  - Write up on medical happenings with an opinion expressed , Word count -1000
- Resident's corner
  - Medical articles by postgraduates/interns
  - Word count as per the criteria mentioned for the scientific articles by the members
- Viewpoint
  - Write up on various problems or happenings in the field of medicine or medical profession
  - Word count -1500
- Medico-legal pearls
  - Articles on medical-legal aspects including the consumer protection act and other acts applicable to the medical profession . No word limits
- Journal Watch

- Short summary of recent journal articles .No word limits

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