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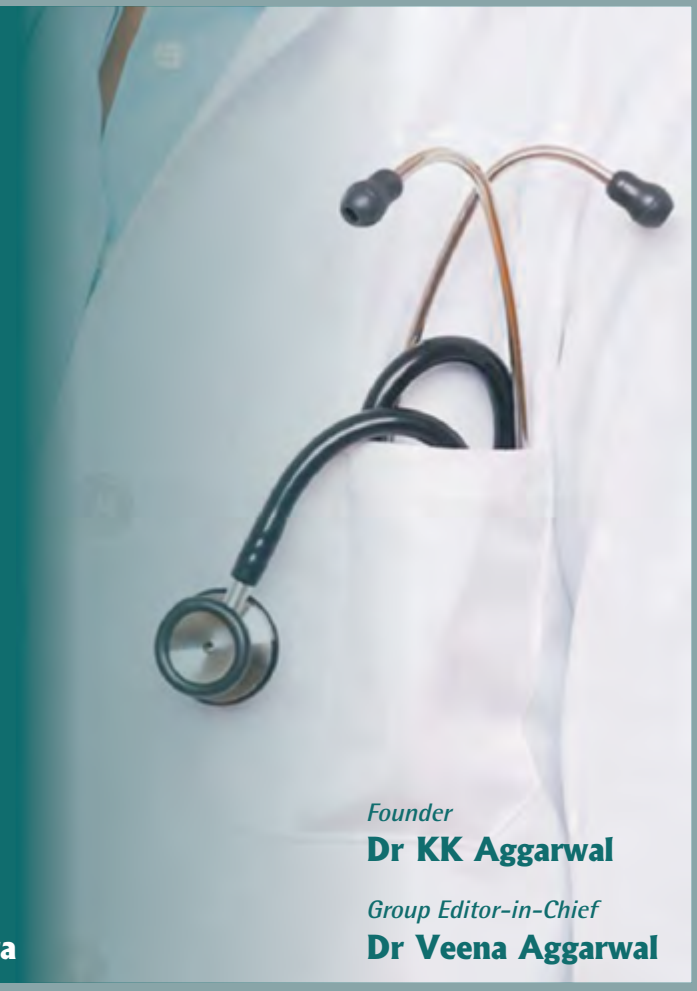

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Research Updates from Around the World

ARDS DUE TO COVID-19 LINKED TO CARDIOMYOPATHY

A National Institutes of Health study has shown severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) can cause damage to the heart without directly affecting the heart tissue. Patients with the virus induced acute respiratory distress syndrome (ARDS) have increased cardiac macrophages as well as inflammation-promoting C-C chemokine receptor type 2 positive (CCR2+) macrophages… (*Source: Circulation. March 20, 2024*).

DIAGNOSTIC PREDICTORS OF RSV IN CHILDREN WITH ACUTE RESPIRATORY INFECTION

Factors such as male gender, ear discharge, premature birth, bottle feeding and hyperinflation on chest X-ray are significantly associated with respiratory syncytial virus (RSV) in children aged ≤2 years with acute respiratory tract infection in a pilot study from Northern India… (*Source: Pediatric Infectious Disease. Dec. 14, 2023*).

FIRST GENE THERAPY FOR CHILDREN WITH RARE DEBILITATING NEURON DISEASE

Atidarsagene autotemcel, marketed as Lenmeldy, has been approved as the first gene therapy for the treatment of children with presymptomatic late infantile, presymptomatic early juvenile or early symptomatic early juvenile metachromatic leukodystrophy. It is a modified stem cell therapy to be administered as a single-dose infusion… (*Source: US FDA. March 18, 2024*).

STUDY LINKS JOINT HYPERMOBILITY TO FAILURE OF COMPLETE RECOVERY FROM COVID-19

Persons with generalized joint hypermobility, also referred to as double jointedness, are 30% more likely to have long COVID, the most common symptom being persistent fatigue…. (*Source: BMJ News. March 20, 2024*).

WALKING PERFORMANCE ON A CURVED PATH MAY BE INDICATIVE OF EARLY COGNITIVE DECLINE

A gait analysis test has linked difficulty in walking a curved path with early cognitive decline among older adults. Curve walking was more useful than straight walking as a cost-effective, noninvasive tool to detect mild cognitive impairment. Individuals with cognitive impairment showed lower average velocity and cadence as well as decreased symmetry and regularity in both step and stride lengths during curve walking… (*Source: Journal of Alzheimer's Disease Reports. March 15, 2024*).

FIRST DRUG TREATMENT FOR NASH

Resmetirom has received FDA approval, as an adjunct to diet and exercise, for the treatment of noncirrhotic nonalcoholic steatohepatitis (NASH) adult patients with moderate to advanced liver scarring. It will be available under the brand name Rezdiffra. It is an oral, once-daily, partial activator of a thyroid hormone receptor in the liver, which reduces accumulation of liver fat… (*Source: US FDA. March 14, 2024*).

A HEALTHY LIFESTYLE MAY PREVENT ONSET OF IBS

Adherence to one healthy lifestyle behavior was associated with 21% lower risk for incident irritable bowel syndrome (IBS) while two healthy lifestyle behaviors reduced the risk by 36% in a study published in *Gut*.

The risk decreased further as the number of healthy lifestyle behaviors increased; 3 to 5 healthy lifestyle behaviors were associated with 42% decrease in IBS… (*Source: Gut. Feb. 20, 2024*).

ELINZANETANT: AN EFFECTIVE NEW TREATMENT FOR HOT FLASHES?

Topline results from the OASIS 3 study show that elinzanetant, administered orally once in a day, significantly reduced the frequency of moderate to severe menopausal vasomotor symptoms compared with placebo. Elinzanetant is a dual neurokinin-1, 3 receptor antagonist (*Source: Healio. March 20, 2024*)

FIXED-DOSE COMBINATION THERAPY FOR PULMONARY ARTERIAL HYPERTENSION

The first single-tablet combination therapy containing macitentan/tadalafil has been approved by the US FDA for the treatment of pulmonary arterial hypertension in treatment-naïve patients or those who are being treated with an endothelin receptor antagonist like macitentan, a phosphodiesterase-5 inhibitor like tadalafil or both… (*Source: Medpage Today. March 25, 2024*).

RAPID RELIEF OF SYMPTOMS WITH UPADACITINIB IN CROHN'S DISEASE

Crohn's disease patients treated with once daily upadacitinib 45 mg experienced rapid resolution of symptoms within 5 days of initiation of treatment.

The clinical remission rate of stool frequency and abdominal pain was 21.2% with upadacitinib versus 8.9% with placebo in moderately to severely active disease. The corresponding clinical response rate was 58.8% and 37.9%, respectively… (*Source: Clin Gastroenterol Hepatol. March 14, 2024*).

HISTORY OF SINUSITIS AND RISK OF RHEUMATIC DISEASE

Patients with sinusitis, chronic and acute are at a higher risk of developing rheumatic diseases such as antiphospholipid syndrome (odds ratio [OR] 7.0), Sjögren's disease (OR 2.4), vasculitis (OR 1.4), and polymyalgia rheumatica (OR 1.4). Acute sinusitis was also linked to the risk of seronegative rheumatoid arthritis (OR 1.8)… (*Source: RMD Open. Feb. 22, 2024*).

FIRST MEDICATION FOR TREATMENT OF CHRONIC RHINOSINUSITIS WITHOUT NASAL POLYPS

Fluticasone propionate nasal spray can now be also used for treatment of patients, aged ≥18 years, with chronic rhinosinusitis without nasal polyps after the FDA expanded the indications of fluticasone propionate spray… (*Source: Medpage Today. March 18, 2024*).

TOP-DOWN VS. ACCELERATED STEP-UP TREATMENT NEWLY DIAGNOSED CROHN'S DISEASE

Starting therapy with infliximab + an immunomodulator (top-down approach) in patients with newly diagnosed Crohn's disease resulted in sustained steroid- and surgery-free remission at 48 weeks (79%) compared to step-up approach with standard treatment and steroids (15%)… (*Source: Lancet Gastroenterol Hepatol. Feb. 22, 2024*).

A GLOBAL NETWORK FOR CORONAVIRUSES LAUNCHED BY WHO

In order to ease and coordinate worldwide expertise and capacities for early and accurate detection, surveillance, and assessment of SARS-CoV-2, Middle East respiratory syndrome coronavirus (MERS-CoV) and novel coronaviruses of public health concern, the World Health Organization (WHO) has developed a new coronavirus network of 36 labs from 21 countries called CoViNet… (*Source: WHO. March 27, 2024*).

STUDY LINKS EXPOSURE TO COCKROACH ALLERGENS TO URIs IN CHILDREN WITH ASTHMA

Exposure to indoor pest allergens such as mouse and cockroach allergens increased the risk of upper respiratory infections (URIs) with reduced lung function with OR of 1.58 and 1.79, respectively in children with asthma. However, no such associations were found for cat and dog allergens… (*Source: MedPage Today. Feb. 29, 2024*).

TIME-RESTRICTED EATING AND CVD MORTALITY

According to a study of more than 20,000 American adults, those who followed a time-restricted eating plan and reduced their intake to less than 8 hours per day had a 91% higher risk of dying from cardiovascular disease (CVD) than those who consumed food throughout 12 to 16 hours per day… (*Source: American Heart Association. March 19, 2024*).

IRREGULAR SLEEPING HOURS LINKED TO SCHOOL-RELATED BEHAVIORAL PROBLEMS

An NIH study has found that adolescents with irregular sleep hours and late bedtime hours perform poorly in academics and have more school-related behavioral problems. Compared to participants with more constant bedtimes, those with more variable bedtimes were more likely to receive a D or lower during the most recent grading period… (*Source: NIH. April 2, 2024*).

THE SECOND H5N1 BIRD FLU CASE REPORTED IN THE US

The Centers for Disease Control and Prevention (CDC) has confirmed the second case of the highly pathogenic avian influenza (HPAI) A (H5N1) virus in the United States. The patient had been exposed to dairy cattle and the only symptom was redness in the eyes. The patient is being treated with oseltamivir… (*Source: CDC. April 1, 2024*)

THE FIRST ADJUNCTIVE DIGITAL TREATMENT FOR DEPRESSION

Rejoyn, the first prescription digital treatment, can now be used for the adjunctive treatment of patients with major depressive disorder aged ≥22 years who are on antidepressant medication following FDA clearance. The 6-week treatment using cognitive-emotional training and cognitive behavioral therapy is delivered via a Smartphone app… (*Source: CNN. April 2, 2024*).

INITIATING THERAPY WITH TWICE-DAILY PPI YIELDS HIGHER HISTOLOGIC RESPONSE IN EOSINOPHILIC ESOPHAGITIS

Treatment-naïve patients newly diagnosed with eosinophilic esophagitis who received twice-daily moderate (20 mg twice daily), or high (40 mg twice daily) dose of omeprazole showed better histologic response rates compared to those who received the standard once-daily 20 mg dose of the proton pump inhibitor (PPI) with adjusted OR of 6.75 and 12.8, respectively… (*Source: Am J Gastroenterol. March 15, 2024*).

CDC CAUTIONS ABOUT INCREASE IN INVASIVE MENINGOCOCCAL DISEASE IN THE US

The CDC has alerted physicians in the US about rising cases of invasive meningococcal disease caused mainly by *Neisseria meningitidis* serogroup Y. Clinical presentation may be with bloodstream infection or septic arthritis and without the classical symptoms of meningitis such as neck stiffness, headache. Unusually, most cases have been reported in the age group 30 to 60 years. "Of 94 patients with known outcomes, 17 (18%) died", notes the CDC… (*Source: CDC. March 29, 2024*).

ANOTHER TREATMENT OPTION FOR EXTRAVASCULAR HEMOLYSIS IN PNH PATIENTS

Danicopan, marketed as Voydeya, has been FDA approved to be used along with ravulizumab or eculizumab for patients with paroxysmal nocturnal hemoglobinuria (PNH) to treat extravascular hemolysis. It is first-in-class, oral, Factor D inhibitor… (*Source: Medscape. April 2, 2024*).

STUDY LINKS CARDIOMETABOLIC DISORDERS IN ADULTS TO CHILDHOOD AMBLYOPIA

Adults, aged 40 years or older are at 1.16 times higher risk of having obesity, 1.25 times more likely to have hypertension and 1.29 times more likely to have diabetes if they have amblyopia or lazy eye persisting from childhood. They were also more likely to experience myocardial infarction (adjusted hazard ratio [HR] 1.38) and death (aHR 1.36) over a decade… (*Source: eClinicalMedicine. March 7, 2024*).

A NEW TREATMENT FOR PULMONARY ARTERIAL HYPERTENSION

Sotatercept, an activin signaling inhibitor biologic, has been approved by the US FDA as the first in class treatment for patients with WHO group 1 pulmonary arterial hypertension. Sotatercept is an activin signaling inhibitor biologic… (*Source: AJMC. March 26, 2024*).

■■■■

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My Health, My Right: Our Health, Our Responsibility!

The World Health Day 2024, highlights a basic human right: that of health. The right to health is clearly mentioned in the World Health Organization's Constitution[1], which states that the highest attainable standard of physical and mental health should be aimed for.

GOVERNMENTAL RESPONSE

Governments across the world try to ensure that their citizens attain this right. India's national health programs cover all phases of life, from childhood and adolescence, to pregnancy, adulthood and old age[2].

Specific diseases of public health importance, such as vaccine-preventable diseases, malnutrition, chronic diseases, and cancers are included. There is special focus on minority and marginalized sections of society, such as the transgender community.

The services listed in these national health programs are offered through an extensive structure of primary, secondary, and tertiary health care centers[3]. These are administered by public and private health care system, and governed by standards such as the Indian Public Health Standards[4]. Essential lists of medicines, devices and diagnostics ensure availability of important medical and surgical interventions at affordable rates[5].

PUBLIC RESPONSE

This has led to a situation where the average citizen feels, and rightfully so, that health is their right[6]. Services such as vaccination, maternal care and medical care, are accepted passively, as their utilization does not require active participation on part of the recipient. In fact, vaccine hesitancy[7] is reported in spite of the fact that it is offered free of cost.

CHANGING TRENDS

As these aspects of health care became more and more effective, the incidence of acute and infectious diseases has also come down markedly. Unfortunately, the prevalence of chronic diseases, such as diabetes and obesity, has increased dramatically. These pandemics pose an important challenge to well-being, at both individual and public health levels. It is certainly one's right, therefore, to access good quality metabolic and endocrine care, and achieve optimal outcomes. Exercising this right is part and parcel of the welcome trend towards person-centered care[8].

RESPONSIBILITY AND RIGHTS

Along with rights, however, come responsibilities. The nature of chronic disease is such that their control and management depend predominantly on self-care and self-management. While it is the duty of the health care system to explain skills needed to live with a chronic disease, it is the responsibility of the individual to put this education in practice. Persons living with any chronic disease, or disability, need to own up to this responsibility. Doing so does not in any way mean that they should abnegate their rights. At the same time, requesting a person living with chronic illness to take charge of their management certainly does not indicate that health care professionals can abdicate their own responsibility[9].

ALL ARE EQUAL

Family members, friends, colleagues, and other caregivers are equally important members of the health care ecosystem. These stakeholders need to be integrated in chronic care, as they fulfill essential responsibilities of support and succor[10]. They also enjoy rights, as caring for a person with chronic disease may lead to compassion fatigue, financial stress, and other hazards. Appreciating this, considering the high prevalence of these conditions, and understanding the need for teamwork in chronic disease, it makes sense to use plural "our" instead of the self-centered "my" in our action statement.

REALITY

Rights and responsibility should be accepted in the right manner, with a view to improving satisfaction and outcomes of health care. The best results are obtained if rights and responsibilities, as well as dues and duties are shared equitably, in the spirit of cooperation and consociation. This is termed as responsible person-centered care[9].

From a chronic disease perspective, therefore, our clarion call should be **"Our health, our right, our responsibility".**

REFERENCES

1. WHO Constitution. Available at: https://www.who.int/about/accountability/governance/constitution. Last accessed March 20, 2024.
2. List of national health programmes. Available at: https://ihatepsm.com/blog/national-programs-related-health-india-december-2023-brief-description-each. Last accessed March 20, 2024.
3. Chokshi M, Patil B, Khanna R, Neogi SB, Sharma J, Paul VK, et al. Health systems in India. J Perinatol. 2016;36(s3):S9-12.
4. Indian Public Health Standards. Available at: https://nhm.gov.in/index1.php?lang=1&level=2&sublinkid=971&lid=154. Last accessed March 20, 2024.
5. National List of Essential Medicines (2022). Available at: https://main.mohfw.gov.in/?q=newshighlights-104. Last accessed March 20, 2024.
6. Kalra S, Megallaa MH, Jawad F. Patient-centered care in diabetology: from eminence-based, to evidence-based, to end user-based medicine. Indian J Endocrinol Metab. 2012;16(6):871-2.
7. Kalra S, Verma M, Agrawal N. Vaccine hesitancy in primary care: building bridges by understanding barriers. J Pak Med Assoc. 2022;72(12):2565-6.
8. Kalra S. The history of person-centred medicine: a South Asian perspective. Int J Person Centered Med. 2022;12(1):41-6.
9. Kalra S, Baruah MP, Unnikrishnan AG. Responsible patient-centered care. Indian J Endocrinol Metab. 2017;21(3):365-6.
10. Stuckey HL, Mullan-Jensen C, Kalra S, Reading J, Wens J, Vallis M, et al. Living with an adult who has diabetes: qualitative insights from the second Diabetes Attitudes, Wishes and Needs (DAWN2) study. Diabetes Res Clin Pract. 2016;116:270-8.

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Study: AI Model Identifies Pre-eclampsia Risks Precisely

A global study published in the *Lancet Digital Health* involving over 8,800 women across 11 countries identified the risk of adverse outcomes associated with pre-eclampsia. This innovative research accurately categorized women's risk levels into five distinct categories within 2 days of their initial assessment. Pre-eclampsia, affecting 2% to 4% of pregnancies worldwide significantly contribute to maternal morbidity and mortality on a globally. Annually, it results in approximately 46,000 maternal deaths along with half a million stillbirths and newborn deaths, predominantly in low- and middle-income nations. While many cases of pre-eclampsia resolve shortly after childbirth, approximately 1 in 10 women in the UK face severe complications, including life-threatening events like stroke.

The newly developed risk-prediction model, PIERS-ML (Pre-eclampsia Integrated Estimate of Risk—Machine Learning), utilizes machine learning technology to offer international applicability. The model was developed collaboratively by researchers from the University of Strathclyde in Glasgow and King's College London and aims to assist health care professionals in determining individualized risk assessments for women diagnosed with pre-eclampsia. The data of an additional 2,901 women from Southeast England were utilized to validate the model externally, affirming its performance as observed in the main study.

The researchers intend to convert this model into a user-friendly application tailored for clinical use in the future. The study signifies substantial progress in the field of pre-eclampsia risk evaluation and management.

(*Source: https://medicalxpress.com/news/2024-03-adverse-pre-eclampsia-outcomes-accurately.html*)

ORIGINAL RESEARCH

Cross-Sectional Study to Find Out the Prevalence of Cardiovascular Diseases Through Detection of ECG Abnormalities in Undiagnosed Population Using a Handheld ECG Device, SanketLife Pro Plus

ITRA SINGH*, RAHUL RASTOGI†, NEHA RASTOGI†, ASHISH SAINI‡, OJASAVI NIRAV#

ABSTRACT

Background: In India, cardiovascular diseases (CVDs) are now the main cause of sudden death. Statistics on prevalence or nationally representative surveillance statistics, however, are lacking. **Aim:** The objective of this cross-sectional study was to assess the ECG findings in general OPD patients not yet diagnosed with any CVD using SanketLife Pro Plus handheld ECG device. **Materials and methods:** The study data was extracted from a free ECG test camp, which was organized in the common OPD waiting area at Indraprastha Apollo Hospitals in New Delhi. Of the 100 persons screened, 78% had sinus rhythm and 13% had tachycardia. Apart from these, no other major findings were detected in the study population. One percent ST depression and 4% T-wave inversions were the significant findings of concern, suggestive of myocardial ischemia or infarction, especially in the undiagnosed population. **Conclusion:** Considering the sample size, even at a 1% incidence of major ECG abnormalities, the outcome is indicative of a possible underlying danger, which is avoidable with early detection and thorough awareness. A mass ECG screening along with collection of relevant data and appropriate research design may help to identify the population at risk. Besides the ECG screening, a stroke risk assessment should be done and prophylaxis must be given to the individuals who have been diagnosed with CVDs.

Keywords: Handheld ECG device, ECG abnormalities, undiagnosed patients, Agatsa SanketLife Pro Plus

The Global Burden of Disease study estimated the age-standardized cardiovascular disease (CVD) death rate as 272 per 1,00,000 people in India, which is higher than the global average of 235 per 1,00,000 people. Premature mortality in terms of years of life lost because of CVDs in India has increased by 59%, from 23.2 million in 1990 to 37 million in 2010. Early age of onset, high case fatality rate and rapid progress are some features particular to CVD in India[1]. Clinical and autopsy studies have repeatedly shown a predominating, common pathophysiology in Western populations, showing that the most frequent pathologic substrate is coronary heart disease (CHD) and that the most frequent electrophysiological mechanism of sudden cardiac death is ventricular fibrillation[2]. High CVD mortality in the South Asian region and India can be attributed to 4 factors, including lack of policies related to social determinants of CVD for control of primordial risk factors such as smoking, smokeless tobacco, alcohol, physical inactivity, and unhealthy diet; poor-quality preventive management, low availability and substandard acute CHD management and lack of appropriate long-term care of these patients and absent cardiovascular rehabilitative and secondary prevention programs[3]. ECGs are unquestionably capable of detecting disease that can be missed by-medical history and physical examination[4]. It has been proposed that latent

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cardiovascular illness can be found by electrocardiogram (ECG) screening in asymptomatic subjects. However, for many populations, including asymptomatic middle-aged (sedentary) persons, ECG screening alone may not be sufficient[5]. But, this has been proposed as a way of reducing the burden of the disease by detecting people who would benefit from prophylactic anticoagulation therapy before the onset of symptoms[6]. Advancements in technology have made it possible to use a range of methods to assist the screening for sudden cardiac death utilizing both medically prescribed equipment and consumer electronic devices capable of detecting AF[7].

MATERIALS AND METHODS

This is a cross-sectional, time-bound study conducted during a free health check-up camp at Indraprastha Apollo Hospitals, from 16th May to 23rd May, 2023 at New Delhi. A dedicated booth for free ECG screening was set up in the common OPD waiting area. The camp is a periodical program by Agatsa Software Pvt. Ltd. in collaboration with Indraprastha Apollo Hospitals, New Delhi, aimed at generating all-round awareness on health using cardiac health patient education material and the SanketLife Pro Plus ECG device demonstration as the mass awareness module. During the camp, participants were screened with the help of a handheld ECG device "SanketLife". The data collection team comprised of 6 members including one ECG analyst and 5 volunteers to organize and conduct the ECG recordings at the booth. Patients were given 2 minutes to sit down and get their bodies into stable physical condition before the data collection. Individuals diagnosed with any disease such as orthopedic concerns, fever and infection were included. Patients with diagnosed CVD were excluded from the study.

After the information was gathered, those who came to the booth had their ECGs taken. A total of 100 individuals participated in the study. All the participants signed a written informed consent form. Their identities were kept confidential. Necessary permissions were taken from the administration to perform the ECG screening at the venue.

ECG screening was conducted free of cost. Participants who had noteworthy findings were referred right away to the cardiologists available at the hospital.

Inclusion Criteria

All the subjects including all genders between 18 to 60 years were included. The subjects were self-reported, who visited the health camp and were ready to participate in the study.

Exclusion Criteria

Patients above 60 were excluded as the touch-based device gives more vibrations due to skin aging and shaking of limbs. Though the device has connection points for DB15 cable, this feature was not used because of the limited resources at that point of time. Portable ECG devices must be used with DB15 lead wires for better reports in persons aged 60 years and older. Those who were under the observation of a cardiologist were also excluded as we were targeting undiagnosed population.

Statistical Analysis

The selected participants were above 18 years of age visiting different OPD for different problems were recruited and had no symptom of CVD. Patients with CVDs were not selected for study. The ECG was performed by ECG technicians and reports were analyzed by Cardiologists of Apollo Hospitals who are empanelled with Agatsa. The average mean and percentage of the ECG abnormalities were calculated to check the prevalence of silent symptoms of cardiac dysfunction, which had not manifested by then.

SanketLife Pro Plus: Device Specifications

The device is a 12-lead portable ECG device, which is able to collect 12-lead ECGs both by touch and by lead. To convert a touch-based device into a conventional lead-based ECG machine, a switch-sy converter with the help of a 3.5 mm jack can be attached to the device. User's mobile phone and the Pro Plus ECG device are connected through Bluetooth. The reports are generated in an application called SanketLife. This device has 3 sensors, 8 placements that record 8-lead ECGs, i.e., lead 1, lead 2 and others are V1 to V6; hence, the remaining 4 leads, i.e., lead 3, AVR, AVL and AVF, are automated leads that are generated through artificial intelligence. This device can record up to 300 ECGs without changing the batteries. The battery is a CR-2032 coin-cell battery. It is a CDSCO, ISO approved device.

RESULT

Out of the 100 participants who voluntarily participated in the study, significant cardiac findings on the ECG were found only in 7 participants (Table 1). Among the participants screened, most of the study participants were of age group 30 to 60 years. Out of them, 86% participants were male and 14% were female. Seventy-eight percent participants had sinus rhythm; 9% had bradycardia and 13% had tachycardia. Minor ECG abnormalities such as borderline Q-wave, left or right axis deviation, QRS high/low voltage, borderline ST-segment depression, premature beats, were also detected but their prevalence was not conclusive because of insufficient data in context of masses. The significance of these findings will depend on the patient's individual medical history and other factors for example, ST-segment depression is more likely to be a sign of myocardial ischemia in an older patient with coronary artery disease.

Table 1. ECG Findings in the Study Population

ECG findings	No. of patients
Sinus rhythm	78
Sinus bradycardia	9
Sinus tachycardia	13
Total	**100**
Major ECG abnormalities	
ST depression	1
T-wave inversion	4
Complete or second-degree AV block	0
Complete left or right bundle branch block	1
Frequent premature beats	1
Atrial fibrillation	0
Minor ECG abnormalities	
Borderline Q-wave	2
Left or right axis deviation	1
QRS high voltage	4
Borderline ST-segment depression	0
T-wave flattening	0
QRS low voltage	2
Myocardial ischemia (Ischemic ECG)	
Presence of Q/QS patterns	0
Significant or borderline ST-segment depression	1
Deep or moderate T-wave inversion	2
Evidence of complete left bundle branch block	2

DISCUSSION

ST depression even at 1% identification and T-wave inversion at 4% are the most concerning findings, as these can be signs of incidents that may lead to sudden cardiac death for ex-myocardial ischemia or infarction, especially in undiagnosed population. Such cases increase the burden of cardiac emergencies in resource-crunched settings.

The complete left bundle branch block (LBBB) is a significant finding, which was seen in a 49-year-old man who was accompanying a patient and visited the ECG camp (Fig. 1). He had hypertension for the past 20 years. Undiagnosed and untreated LBBB can result in sudden cardiac death caused by acute heart failure. He was referred to the cardiologist for further investigations and medical management.

A systematic review of studies on CVD in Asian Indians from January 1969 to October 2012 revealed that the prevalence in urban areas was 2.5% to 12.6% and 1.4% to 4.6% in rural areas. The overall prevalence of CVD in South Indian population has been estimated to be 11%, a 10-fold increase as compared to the prevalence in urban India in the 1970s[8-10]. A previous study conducted in Delhi found the prevalence of CHD to be 14.8% in urban areas[11].

Cardiovascular risk factors such as hypertension, hypercholesterolemia, low high-density lipoprotein cholesterol, hypertriglyceridemia and tobacco use are highly prevalent in the urban Indian middle class. There is low awareness, treatment and control of hypertension and hypercholesterolemia in patients with diabetes[12].

All these findings and data from old records point towards a mass screening of ECG along with other biochemical parameters for diseases prevalence and severity prediction.

SanketLife Pro Plus portable ECG gadget proved successful in assessing the prevalence of cardiac-related diseases in the general population. It offers a comprehensive ECG, is simple to use for home monitoring as well as in a clinical setting to obtain a rapid ECG at the clinician's workstation, and is therefore helpful in making clinical decisions.

CONCLUSION

Enhancing ECG interpretation skills and raising knowledge of the AF guidelines may result in an increase in AF screening[13]. Even at 1% rate, if we consider the sample size, the result indicate an underlying silent potential threat, which is completely

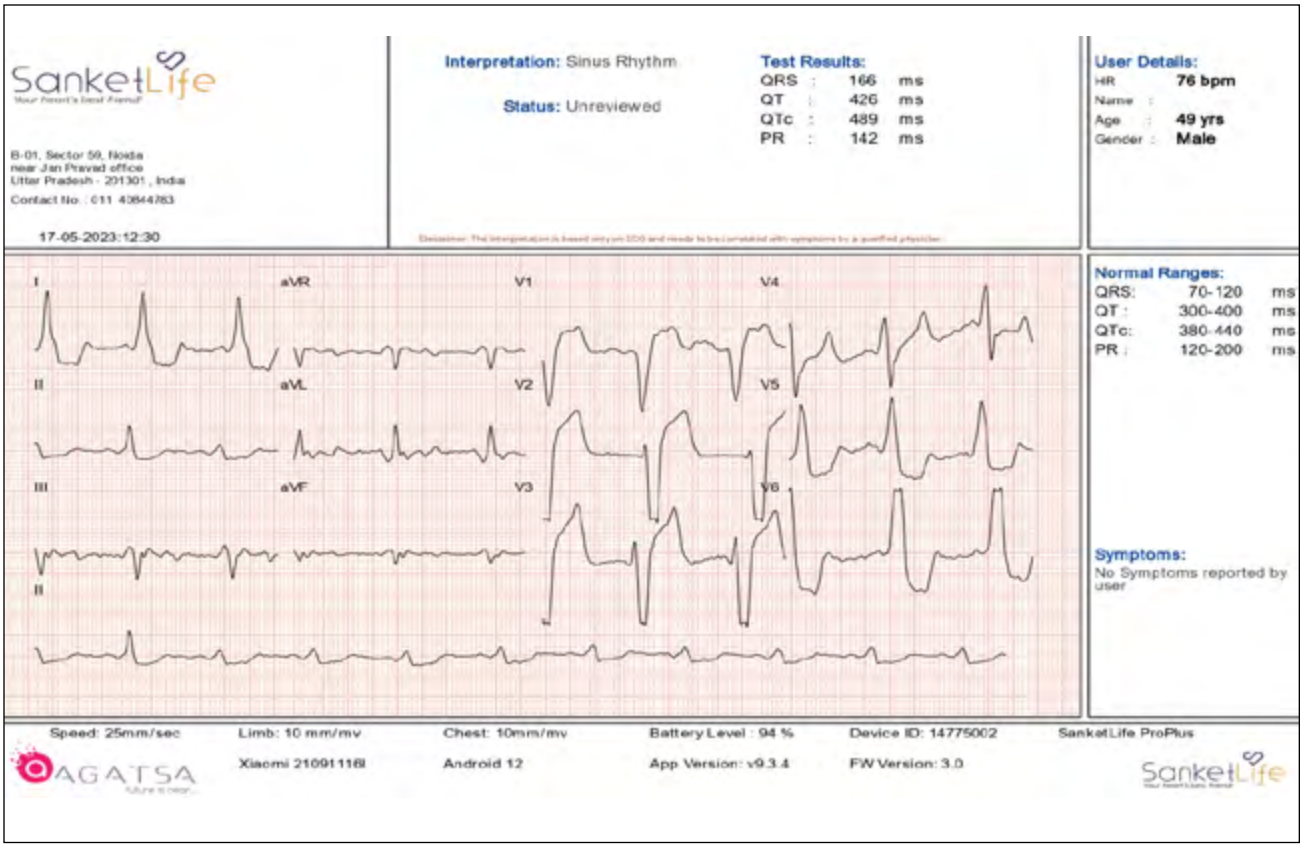

Figure 1. ECG report of 49-year-old man generated by CDSCO, ISO approved device, SanketLife Pro Plus, showing abnormalities such as left bundle branch block, ST elevation wide QRS complexes.

avoidable with timely diagnosis and proper awareness. Though the complete demographic information and pathophysiological profile of the participants was not available. Since the above described findings were obtained only by taking 12-lead ECG.

More studies including demographic information, anthropometric assessment and complication assessments are advisable to extract reliable results in undiagnosed sections of society. A mass ECG screening campaign along with proper data collection and relevant research design is much needed to identify those who are unaware but are at risk. Stroke risk assessment should be performed and prophylaxis for example statins, must be provided to those diagnosed with a heart disease to prevent the emerging outbreak of cardiac emergencies.

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Conflict of Interest

None.

REFERENCES

1. Prabhakaran D, Jeemon P, Roy A. Cardiovascular diseases in India. Circulation. 2016;133(16):1605-20.
2. Tereshchenko LG. Electrocardiogram as a screening tool in the general population: a strategic review. J Electrocardiol. 2013;46(6):553-6.
3. Gupta R, Mohan I, Narula J. Trends in coronary heart disease epidemiology in India. Ann Glob Heal. 2016;82(2):307-15.
4. Webster G, Carberry T, Berger S. Screening for prevention of sudden death in the young. Curr Opin Cardiol. 2020;35(1):80-6.
5. Orchard JJ, Neubeck L, Orchard JW, Puranik R, Raju H, Freedman B, et al. ECG-based cardiac screening programs: legal, ethical, and logistical considerations. Heart Rhythm. 2019;16(10):1584-91.
6. Moran PS, Flattery MJ, Teljeur C, Ryan M, Smith SM. Effectiveness of systematic screening for the detection of atrial fibrillation. Cochrane Database Syst Rev. 2013;(4):CD009586.
7. Roger VL. Epidemiology of heart failure. Circ Res. 2021;128(10):1421-34.
8. Shrivastava U, Misra A, Mohan V, Unnikrishnan R, Bachani D. Obesity, diabetes and cardiovascular diseases in India: public health challenges. Curr Diabetes Rev. 2016;13(1):65-80.

9. Rao M, Xavier D, Devi P, Sigamani A, Faruqui A, Gupta R, et al. Prevalence, treatments and outcomes of coronary artery disease in Indians: a systematic review. Indian Heart J. 2015;67(4):302-10.
10. Mohan V, Deepa R, Shanthi Rani S, Premalatha G. Prevalence of coronary artery disease and its relationship to lipids in a selected population in South India. J Am Coll Cardiol. 2001;38(3):682-7.
11. Huffman MD, Prabhakaran D, Osmond C, Fall CHD, Tandon N, Lakshmy R, et al. Incidence of cardiovascular risk factors in an Indian urban cohort. J Am Coll Cardiol. 2011;57(17):1765-74.
12. Gupta A, Gupta R, Sharma KK, Lodha S, Achari V, Asirvatham AJ, et al. Prevalence of diabetes and cardiovascular risk factors in middle-class urban participants in India. BMJ Open Diabetes Res Care. 2014;2(1):e000048.
13. Wong KC, Kok C, Marschner S, Usherwood T, Chow CK. Screening for atrial fibrillation and other arrhythmias in primary care. BMC Fam Pract. 2020;21(1):79.

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Subfebrile Fever: An Early Indicator of Peripartum Infection in Prolonged Rupture of Membranes

Peripartum subfebrile fever in women with prolonged rupture of membranes (ROM) >12 hours is associated with adverse maternal and neonatal outcomes, including increased rates of endometritis, surgical site infections, neonatal intensive care admission and neonatal fever, according to a study published in the *American Journal of Obstetrics & Gynecology*[1].

This retrospective cohort study enrolled 1,796 women who were admitted to a tertiary university-affiliated hospital from July 2021 to May 2023. Inclusion criteria were singleton term pregnancies, ROM >12 hours and maximal body temperature of 37.9°C. The study focused on assessing the endometritis rate, the primary study outcome, in women with prolonged ROM and subfebrile fever (37.5-37.9°C) compared to those with normal body temperature (<37.5°C). Two latency period groups, ROM of 12 to 18 hours (n = 687) and ROM >18 hours (n = 1,109), were analyzed. Intravenous ampicillin was administered to women with ROM >18 hours for group B streptococcus prophylaxis. Chorioamniotic-membrane swabs were obtained in cases of prolonged ROM (>18 hours).

In both latency groups, women with subfebrile fever had higher rates of endometritis, surgical site infections, neonatal intensive care admission and neonatal fever. In the ROM 12 to 18 hours group, the respiratory distress syndrome rates were higher among women with subfebrile fever compared to those with normal body temperature. In the ROM >18 hours group, significantly greater numbers of Enterobacteriaceae isolates were detected on chorioamniotic-membrane cultures, among those who were subfebrile (22%) than with normal intrapartum temperature (11%).

It is evident from the results that women with subfebrile fever and prolonged ROM experience greater maternal and neonatal morbidity compared to those with normal body temperature. They suggest that subfebrile fever may serve as an early indicator of peripartum infection as evidenced by higher rates of endometritis and surgical site infections in women with ROM >12 hours who had subfebrile fever. Hence, women with subfebrile fever should be monitored for signs of infection. The potential benefits of antibiotic treatment in reducing maternal and neonatal morbidity should be taken into consideration in such situations.

Reference

1. Shqara RA, et al. 98 Is subfebrile fever during prolonged ROM (>12 hours) related to infectious outcomes? Am J Obstet Gynecol. 2024;230(1 Suppl):S71-72.

CASE REPORT

A Patient-centered Approach to Management of Migraine in Primary Care

STEPHEN TETTEH ENGMANN*, DEBORAH YESUTOR GADZEKPO†

ABSTRACT

Background: Primary care physicians are in a prime position to enhance the diagnosis and treatment of migraine for a large number of patients since they see a large number of migraine patients for the first time in these settings. **Case report:** This is a case report of a young woman with a known history of migraine headaches with aura who presented to the Emergency Unit of a primary care facility with complaints of severe headaches, which were not improving after long-term use of herbal preparations. The onset of her symptoms was associated with generalized weakness, loss of appetite, nausea and seizure of the right side of the upper body lasting for 10 seconds, which was self-limiting. There was no associated vomiting or dizziness. The initial workup included a computed tomographic (CT) scan of the head and an electroencephalogram (EEG), which were unremarkable. The patient's perspectives were explored and patient-centered approaches were employed to manage the patient with analgesics and oral amitriptyline and propranolol combination as a migraine prophylaxis. **Conclusion:** A patient-centered approach to care can be a crucial strategy for efficient migraine treatment once a patient has been diagnosed with the condition.

Keywords: Migraine with aura, primary care, patient-centered

Migraine is a widespread condition that negatively impacts the well-being and health of numerous individuals, having a significant impact on their loved ones, families, and the community[1]. Migraine is a major source of disability, and in terms of years lived with disability, it ranks second globally among all disorders after low back pain[1-3]. It is among the most prevalent, but potentially debilitating, conditions seen in primary care[4,5]. Primary care physicians are in a prime position to enhance diagnosis and migraine treatment for a large number of patients since they see a large number of migraine patients for the first time in these settings[5]. Migraine aura-triggered seizures are among the rare complications of migraine[6]. The cornerstone of acute migraine management is medication therapy[7]. However, to prevent new-onset development, it is crucial to carefully manage migraine using a personalized, patient-centered approach that includes education, lifestyle modifications, and optimized therapeutic and nonpharmacologic measures[8]. This article describes a case of migraine complicated with migraine aura-triggered seizures and offers practical patient-centered approaches to the management of migraine in a primary care setting.

CASE PRESENTATION

A 23-year-old woman with a known history of migraine headaches with aura presented to the Emergency Unit of a primary care facility in Ghana with complaints of severe headaches of 2 days duration. The severity of the headache on the numeric pain scale was between 8 and 9 out of 10. There were no relieving factors but the patient had a history of visual disturbances and photophobia as well as phonophobia, which exacerbates the headache. The visual disturbances were described as seeing shimmering spots or stars as well as flashes of light. The quality of her headache was described as being continuous, and pulsatile in nature. The onset of her symptoms was associated with generalized weakness, loss of appetite, nausea, and seizure of the right side of the upper body lasting for 10 seconds, which was self-limiting. There was no associated vomiting or dizziness. She had experienced 2 episodes of seizure

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prior to presentation at the facility but did not have post-ictal confusion. The patient had no fever, chills, or abdominal pain and the review of other systems was unremarkable. She had numbness but denied sensitivity to smell, and there were no other neurologic deficits such as nuchal rigidity, focal weakness, double vision, or slurred speech.

She had used some herbal preparations prior to the onset of her symptoms without any improvement. The patient admitted to experiencing typical migraine headaches more than twice a year. The last episode was about a year before her current presentation, when she was treated with herbal medications and had some improvement. She still experienced the headaches intermittently with lower severity.

The patient's perspective was that she had some fears about having migraine and the presenting acute headache was unbearable and made her feel anxious. She had been told in the past it was migraine and the use of herbal preparations had not helped in recent times, hence she reported to the hospital. In this current episode, she had not been able to work and had pending jobs to deliver to her clients. She expected to have a resolution of the headache.

On general physical examination, the patient was afebrile (temperature 36.2°C), had no conjunctival pallor, was not jaundiced and weighed 102 kg with a height of 1.75 m giving a body mass index (BMI) of 33.3 kg/m^2. On examination of the cardiorespiratory system, her blood pressure (BP) was 118/72 mmHg with a peripheral pulse rate of 74 beats per minute, regular, with good volume. Her respiratory rate was 18 cycles per minute with no signs of acute distress. On chest auscultation, the air entry was adequate bilaterally, with vesicular breath sounds and no added sounds. Abdominal and neurological examinations were unremarkable. She was conscious, alert, and oriented in person, place and time. Her pupils were normal in size, and reactive to light; other cranial nerve examination was unremarkable.

The initial workup included a computed tomographic (CT) scan of the head, and blood work including full blood count, fasting blood glucose, blood film for malaria parasites, liver function test, kidney function tests with serum electrolytes, and erythrocyte sedimentation rate (ESR), which were all normal. She was admitted and managed with intravenous normal saline, acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs) combination. Intravenous diazepam was on standby to abort any seizure that could have been experienced. The patient was educated about migraine, the treatment options, self-management strategies, the possible triggers of acute attacks, the importance of avoiding medication overuse including herbal preparations and the need to receive long-term treatment with migraine prophylaxis. Through shared decision-making, she was started on oral amitriptyline and propranolol combination before discharge. Her anxiety associated with the acute headache attacks was allayed. The modified 5A (ask, assess, advise, agree, and assist) model was adopted for obesity counseling and management[9]. Her mother who was her family caregiver was educated about migraine and her role in the patient experience was addressed. The patient was discharged from the ward following the resolution of her headache and other visual symptoms. Her care was coordinated through a referral to a neurologist for a consult and an electroencephalogram (EEG) workup and she was advised to return for review in 2 weeks.

Follow-up and outcomes: The patient had no complaints after 2 weeks and was feeling better after starting the treatment. She was well-looking and stable. Vital signs were as follows: respiratory rate - 18 cpm, temperature - 37.1°C, BP - 120/75 mmHg, and pulse rate - 80 bpm. The EEG done by the neurologist was normal; no focal, diffuse or generalized abnormalities were noted. Her mother came along with her and confirmed that there had been some improvement in the patient. The migraine education and weight loss strategies discussed during her admission were reinforced. The migraine prophylaxis was continued and she was scheduled for a follow-up in 1 month and has since been doing well after several follow-up visits.

DISCUSSION

General Principles in the Management of Migraine

In-depth patient education and a comprehensive physician understanding of different treatment choices and techniques are necessary for the successful management of migraine[10]. Acute and prophylactic medications, lifestyle modifications, and migraine self-management techniques are all part of comprehensive migraine therapy[3]. Prophylactic medication for migraine is indicated when recurrent migraine attacks are causing considerable disability, recurrent attacks with prolonged aura, and when there are contraindications to acute migraine medications, which make symptomatic treatment of attacks difficult[3]. This patient had recurrent migraine attacks causing considerable disability, with attacks having prolonged aura and was thus started on oral amitriptyline and propranolol combination.

A randomized controlled trial has shown that the combination of propranolol and amitriptyline is more efficacious in preventing migraines than amitriptyline used alone[10]. Evaluation of response to treatment and management of failure involves the use of headache calendars, assessing the effectiveness and adverse effects of therapy, and re-evaluating before changing treatment when it fails[11].

Patient-centered Approach

A person-centered approach means "focusing on the elements of care, support, and treatment that matter most to the patient, their family and carers"[12]. There are several patient-centered approaches in the treatment of acute migraine headaches.

Individualized treatment plans: It is important to tailor treatment plans to each patient based on their specific needs and preferences[4]. It is important for the health care provider to assist patients in developing coping mechanisms for the difficult-to-avoid triggers[13]. In addition, it is advised that patients control their weight if obese, manage their comorbidities, modify their lifestyle, be educated, keep headache diaries, and increase their understanding of the condition as components of migraine management[13].

Shared decision-making: In a patient-centered approach to care, shared decision-making between health care providers and patients to determine the most suitable treatment approach for each individual is encouraged. Shared decision-making was employed in the management of this patient. Migraine patients should be involved in managing their condition. It is important to involve patients in decisions regarding their treatment, including a discussion about the risks and benefits of different therapeutic options that align with the patient's preferences and goals[4]. These patients are key decision-makers and their input is required for headache management since it works best when they are actively involved in their therapy[14].

Patient education: Patient-centered approaches also involve providing patients with comprehensive education about their condition, treatment options, and self-management strategies to empower them in managing their migraines effectively. Providing patients with information on the potential risks of overusing medications for acute migraine relief can help prevent medication overuse headaches and optimize the effectiveness of acute treatments[5]. As seen in this case report, patient education was an integral part of the management of this patient.

CONCLUSION

Patient-centered approaches aim to enhance patient satisfaction, improve treatment adherence, and ultimately optimize outcomes in managing migraine headaches. A patient-centered approach to care can be a crucial strategy for efficient migraine treatment once a patient has been diagnosed with the condition. Treatment planning and execution should prioritize the most significant and practical actions. In order to achieve optimal clinical treatment, therapeutic techniques must acknowledge the unique clinical features, preferences, and needs of each patient, avoiding the use of a generalized strategy.

REFERENCES

1. Ashina M, Katsarava Z, Do TP, Buse DC, Pozo-Rosich P, Özge A, et al. Migraine: epidemiology and systems of care. Lancet. 2021;397(10283):1485-95.
2. Curter M. Pathophysiology, clinical manifestations, and diagnosis of migraine in adults. UpToDate. Published 2020. Available from: https://www.uptodate.com/contents/pathophysiology-clinical-manifestations-and-diagnosis-of-migraine-in-adults?search=migraineaura-triggered Seizures&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1. Accessed March 4, 2024.
3. Becker WJ, Findlay T, Moga C, Scott NA, Harstall C, Taenzer P. Guideline for primary care management of headache in adults. Can Fam Physician. 2015;61(8):670-9.
4. Gilmore B, Michael M. Treatment of acute migraine headache. Am Fam Physician. 2011;83(3):271-80.
5. Martin VT, Feoktistov A, Solomon GD. A rational approach to migraine diagnosis and management in primary care. Ann Med. 2021;53(1):1979-90.
6. Plato BM. Rare complications of migraine with aura. Headache. 2016;56(8):1373-9.
7. Ashina M, Buse DC, Ashina H, Pozo-Rosich P, Peres MFP, Lee MJ, et al. Migraine: integrated approaches to clinical management and emerging treatments. Lancet. 2021;397(10283):1505-18.
8. Lipton RB, Buse DC, Nahas SJ, Tietjen GE, Martin VT, Löf E, et al. Risk factors for migraine disease progression: a narrative review for a patient-centered approach. J Neurol. 2023;270(12):5692-710.
9. Vallis M, Piccinini-Vallis H, Sharma AM, Freedhoff Y. Clinical review: modified 5 As: minimal intervention for obesity counseling in primary care. Can Fam Physician. 2013;59(1):27-31.
10. Islam MA, Shaikh AK, Alam SkM, Sultana D, Islam MS, Rashid MM. Safety & efficacy of propranolol and amitriptyline combination therapy in migraine prophylaxis: a randomized control trial. J Natl Instit Neurosci Bangladesh. 2018;4(1):3-7.

11. Eigenbrodt AK, Ashina H, Khan S, Diener HC, Mitsikostas DD, Sinclair AJ, et al. Diagnosis and management of migraine in ten steps. Nat Rev Neurol. 2021;17(8):501-14.
12. The Health Foundation. Person-centred care made simple: What everyone should know about person-centred care. 2016.
13. Haghdoost F, Togha M. Migraine management: non-pharmacological points for patients and health care professionals. Open Med (Wars). 2022;17(1):1869-82.
14. Peters M, Abu-Saad HH, Vydelingum V, Dowson A, Murphy M. Patients' decision-making for migraine and chronic daily headache management. A qualitative study. Cephalalgia. 2003;23(8):833-41.

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Clinical Outcomes of Early Discharge after Cessation of Oxygen Therapy

Early discharge of patients, within 4 hours, after stopping oxygen therapy reduced the time to discharge and was associated with shorter hospitalizations with no increase in rate of readmissions. Early discharge was also safe. These findings were published in *The Journal of Paediatrics and Child Health*[1].

This retrospective single-center study aimed to investigate the safety of discharging bronchiolitis patients 4 hours after cessation of oxygen therapy. For this they included 884 children, aged 0 to 24 months, admitted with bronchiolitis to the single center during 2018 and 2019. Of these, 462 were admitted in 2018 and 422 were hospitalized in 2019. Relevant data for the study was collated retrospectively from medical records. The rate of readmissions and clinical reviews/rapid responses after discharge were compared to the pre-implementation period in 2018.

There was a significant reduction in the median time to discharge post-oxygen cessation in 2019 compared to the pre-implementation period in 2018. The median time decreased by 87 minutes (vs. 423 minutes). Similarly, there was a significant reduction in the median duration of hospitalization in 2019 compared to 2018. The median length of stay decreased by 6.7 hours (vs. 1.83 days).

However, there were no significant differences in the rate of readmissions between 2018 and 2019 (0.6% vs. 1.4%). In both 2018 and 2019, there were instances of clinical reviews or rapid responses post-cessation of oxygen therapy, respectively.

In 2018, 18 patients were discharged within 4 hours of oxygen therapy cessation, while in 2019, 71 were discharged within this time period. Among the patients discharged within 4 hours of oxygen therapy cessation, there were no readmissions, clinical reviews, or rapid responses in the 2019 cohort.

The findings of this study suggest that implementing a protocol recommending discharge home 4 hours after cessation of supplemental oxygen therapy for bronchiolitis patients was safe and did not lead to an increased risk of adverse events. Despite the shorter length of hospital stay and faster discharge process in the early discharge group in the post-implementation period, there was no significant difference in the rate of readmissions between the two cohorts.

The feasibility of the new protocol may impact clinical practice leading to more efficient utilization of health care resources while ensuring patient safety. However, these findings need to be further validated in future studies.

Reference

1. Gilbert Y, et al. Duration of monitoring after cessation of oxygen therapy in infants with bronchiolitis. J Paediatr Child Health. 2023;59(11):1223-9.

CASE REPORT

A Rare Relapse of Kikuchi-Fujimoto Disease from Tertiary Care Hospital in Southern Rajasthan

VIRENDRA KUMAR GOYAL*, HARSAA VARDHAN†, SANJAY GEHLOT†, VISHWAJEET MITTAL†, SHREY SONI†

ABSTRACT

Kikuchi-Fujimoto disease (KFD), also known as histiocytic necrotizing lymphadenitis, is a rare condition of unknown etiology presenting with cervical lymphadenopathy along with associated symptoms of fever, weight loss. It is often misdiagnosed due to rare existence. We report a case of a 21-year-old female who presented with painful cervical lymphadenopathy and low-grade fever on and off for 6 months. Examination revealed left-sided multiple, tender, matted lymph nodes measuring maximum 2 cm in size, firm and mobile. Patient underwent a panel of investigations including cervical biopsy, which revealed findings of KFD.

Keywords: Kikuchi-Fujimoto disease, recurrent histiocytic necrotizing lymphadenitis, systemic lupus erythematosus

Kikuchi-Fujimoto disease (KFD) is a rare form of painful lymphadenopathy, which is more common in Southeast Asia. KFD is not very well described in Africa, with very few reports described in the literature. The lymphadenopathy is usually cervical with associated nonspecific symptoms of fever and night sweats, which makes the diagnosis more challenging as the differential diagnosis is wide.[1] We describe the case of a young female, who presented with painful multiple cervical lymphadenopathy in cervical region and later confirmed to have KFD on lymph node biopsy.

CASE PRESENTATION

A 21-year-old female presented with features of multiple, tender, soft to firm, mobile, nonadherent to adjacent tissue, matted, left cervical lymph node enlargement for about 6 months duration, and associated low-grade fever off and on. There was no history of weight loss, night sweats, cough, breathlessness, any swellings in other sites, generalized weakness and fatigue, butterfly rash, photosensitivity, oral ulcers, hair loss, palpitations, heat intolerance or dry mouth. Examination revealed enlarged lymph nodes in the left cervical region measuring maximum 2 cm in size, firm and mobile. There was no pallor, icterus, and clubbing.

Respiratory system examination revealed no abnormality and on per abdomen examination no hepatosplenomegaly was found. Patient underwent a panel of investigations including complete blood count (CBC) with peripheral smear, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and thyroid profile. Mantoux test was found to be indeterminate. Urine routine was normal, and microscopy showed no sediments.

Ultrasonography (USG) of abdomen did not show any lymphadenopathy. USG left cervical region showed few enlarged level V cervical lymph nodes. Patient underwent cervical lymph node biopsy, which revealed histiocytic necrotizing lymphadenitis suggestive of KFD (Figs. 1 and 2).

On detailed history, it was found that patient had a similar complaint 1.5 years ago for which she underwent excisional biopsy that showed KFD and the patient was treated for it. The disease subsided after treatment with complete regression of lymph nodes. We report this case of relapse of KFD, as there are very few reports of relapse (3%) making it rare.

Patient was started on nonsteroidal anti-inflammatory drugs (NSAIDs) along with oral corticosteroids, hydroxychloroquine and leflunomide with symptomatic improvement.

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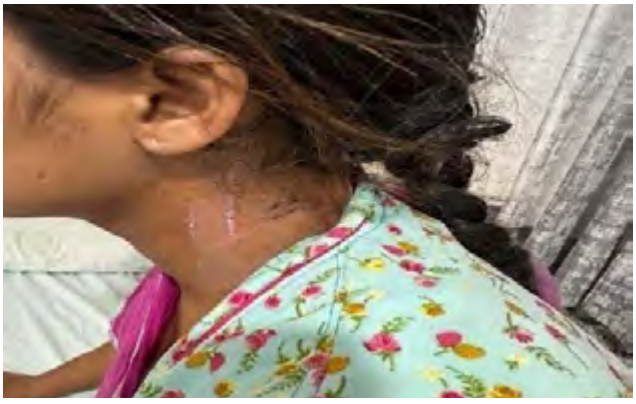

Figure 1. Profile picture of patient showing scar mark on lateral side of neck (post-excisional).

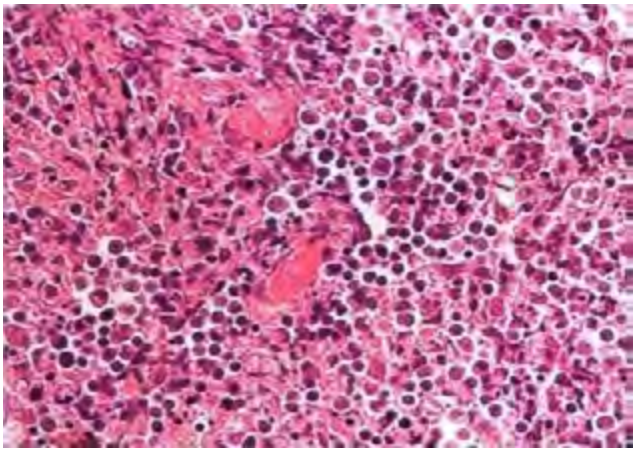

Figure 2. Lymph node biopsy showing numerous foci of necrosis with apoptotic bodies and scattered histiocytes. Absence of acute inflammatory infiltrate and hematoxylin bodies are suggestive of Kikuchi's disease.

DISCUSSION

Kikuchi-Fujimoto disease, also known as histiocytic necrotizing lymphadenitis, is commonly seen in females of 20 to 30 years age group with self-limiting lymphadenopathy (disappears within 1 to 4 months)[2]. A low but possible recurrence rate of 3% to 4% has been seen. Recurrence has been recorded over a period of 2 to 10 years after the initial presentation[3]. Our case represents a shorter recurrence course (within 1.5 years). The exact pathophysiology of KFD is not known, and postulated theories are of infectious and autoimmune origins. KFD is commonly found in association with systemic lupus erythematosus (SLE)[4], Still's disease, Grave's disease and Sjogren's disease. Clinical features include lymphadenopathy, fever, fatigue, joint pain, high ESR, CRP and erythematous rashes. Cervical region is the commonest site for lymphadenopathy and is usually painful[3,5].

The clinical picture is often nonspecific and should be differentiated from tuberculosis (TB)[2,4], infectious mononucleosis, lymphoma, and metastatic cancer. Due to the frequent association with SLE (30%)[4], regular follow-ups and screening for diagnosis of SLE is recommended. The diagnosis is confirmed on histopathology showing architecture of follicular hyperplasia and necrotic abundant karyorrhectic nucleardebris. Histiocytes are positive for lysozyme, myeloperoxidase, CD68, CD163, and CD4 cells.

Patients with mild disease respond to supportive care with antipyretics and NSAIDs[1,6]. Treatment options for aggressive and recurrence cases include use of corticosteroids and immunosuppressors[3]. Symptomatic treatment is the main medical intervention but there are documented cases of recurrence, who need treatment with corticosteroids and other immunosuppressant drugs.

CONCLUSION

Kikuchi's disease can present with infective lymphadenopathy and therefore should be considered in the differential diagnoses of enlarged lymph nodes. Histological examination is the gold standard to diagnose the condition and to avoid unnecessary treatment. Usually, complete regression of disease occurs, but it can rarely recur in 3% cases. A high degree of clinical suspicion is required to make the diagnosis and detailed history with lymph node biopsy reports should not be missed out.

REFERENCES

1. Sharma K, Otieno F, Shah R. Case report of Kikuchi-Fujimoto disease from Sub-Saharan Africa: an important mimic of tuberculous lymphadenitis. Case Rep Med. 2020;2020:4385286.
2. Dhukiya R. Kikuchi's disease: a case report from west India. Int J Allied Med Sci Clin Res. 2020;2(4):322-5.
3. Singhania P, Paul R, Maitra S, Banerjee A, Hashmi M. Kikuchi-Fujimoto disease from eastern India. J Glob Infect Dis. 2010;2(3):305-6.
4. Achappa B, Herath NC, Sebastian B, Dsouza NV, Raghuram PM, Holla R, et al. Kikuchi- Fujimoto disease in a tertiary care teaching hospital in Coastal South India: a 8-year retrospective study. F1000Res. 2022;11:492.
5. Pai VD, Jadhav RR. Kikuchi's disease: a diagnostic dilemma. Indian J Surg. 2015;77(Suppl 1):164-5.
6. Wilson MR, Milne G, Vryonis E. Kikuchi-Fujimoto disease: a rare cause of fever in the returning traveler. Case Rep Med. 2014;2014:868190.

CASE REPORT

Subarachnoid Hemorrhage as a Rare Presentation of Gestational Trophoblastic Neoplasia

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ABSTRACT

Introduction: Gestational trophoblastic neoplasia (GTN) is a rare group of malignancy that has varied clinical presentations. Hence, diagnosis is difficult, but if diagnosed on time, it has an excellent prognosis. **Case summary:** Here we present the case of a 24-year-old female who presented with recurrent intracranial hemorrhages. She was earlier misdiagnosed as tubercular cerebral vasculitic hemorrhage, but in her subsequent presentation after a thorough history, examination and investigation, she was diagnosed as GTN-choriocarcinoma. **Conclusion:** Subarachnoid hemorrhage is a rare complication of choriocarcinoma and any female in the reproductive age group with a prior history of abortion and who presents with bleeding manifestations of any organ system, should be suspected for choriocarcinoma.

Keywords: Recurrent intracranial hemorrhages, pregnancy-related malignancies, GTN-choriocarcinoma, history of abortion, rising hCG titers

Gestational trophoblastic neoplasia (GTN) denotes a rare group of pregnancy-related malignancies that are caused by abnormal proliferation of placental trophoblasts[1]. Although rare, it shows excellent response to chemotherapy even in advanced stages. Hence, it is crucial to diagnose it accurately and as early as possible. A number of choriocarcinoma cases are often misdiagnosed due to the atypical symptoms of the disease and a lack of clear radiographical evidences[2]. With increased education in low level facilities to enhance quick referral and centralizing GTN care, there is a possibility of improving overall survival.The diagnosis of GTN does not require histopathology. The diagnosis is made on the basis of an elevated human chorionic gonadotropin (hCG) plateau or rising hCG titers over a period of several weeks. Histologic choriocarcinoma and/or the appearance of metastases with a persistently raised serum hCG level is an absolute indication for chemotherapy[2,3]. The aim of this case report is to present a case with an atypical presentation, which was initially misdiagnosed as tubercular cerebral vasculitis but was later diagnosed as GTN-FIGO IV Stage.

CASE REPORT

A 24-year-old married female, presented to Emergency Department of RNT Medical College with chief complaints of 1 episode of abnormal body movement followed by altered sensorium. She was then admitted in medical intensive care unit (ICU).

The patient had been well about 5 months back when she developed cough without expectoration, her chest X-ray revealed multiple heterogeneous opacities in bilateral lower zones (Fig. 1). Multiple sputum samples were obtained by inducing sputum production using 3% sodium chloride (NaCl) and were sent for microscopy, culture and cartridge-based nucleic acid amplification test (CBNAAT), but they were inconclusive. She was then started on directly observed treatment short-course (DOTS) antituberculosis treatment (ATT) empirically. There was no improvement in her symptoms but she continued ATT.

About 1.5 months back she had suffered an episode of generalized tonic-clonic seizures (GTCS) followed by loss of consciousness, she was admitted in some other

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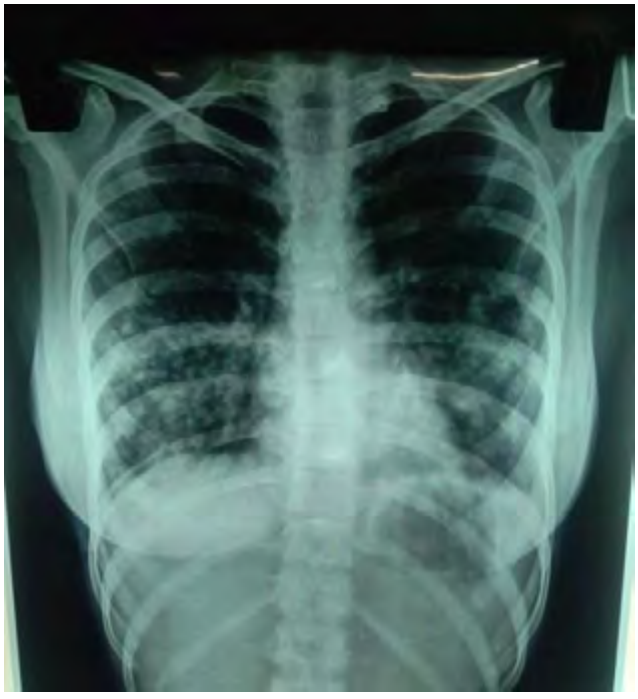

Figure 1. Chest X-ray (PA) - showing bilateral heterogeneous opacities in lower zones.

hospital. An NCCT (non-contrast computed tomography) head (Fig. 2) was done which showed an acute intracranial hemorrhage in right parieto-occipito-temporal region. Considering it as vasculitis, the following investigations- antinuclear antibodies (ANA), double-stranded deoxyribonucleic acid (dsDNA), complete blood count (CBC), liver function test (LFT), renal function test (RFT), cerebrospinal fluid (CSF) adenosine deaminase (ADA) and a neuropanel of CSF for central nervous system (CNS) infections were also done. All the reports were normal except for moderate anemia. She was also diagnosed as primary hyperthyroidism for which she was put on antithyroid medications. She was started on steroids and DOTS ATT was continued, her condition improved and she was discharged after 20 days with tapering dose of steroids, antithyroid medications and iron supplements.

Presently, the patient presented with similar complaints of 1 episode of generalized abnormal body movement and altered sensorium. There was no history of fever according to her relatives. Her family history was insignificant in terms of any similar presentation in family members and of tuberculosis. Detailed history was taken and it was revealed that she had been having irregular menstrual cycles from the last 1 year. She had periods of amenorrhea followed by menstruation lasting for 1 to 2 days. On further probing, it was found that she had a spontaneous abortion after 2 months

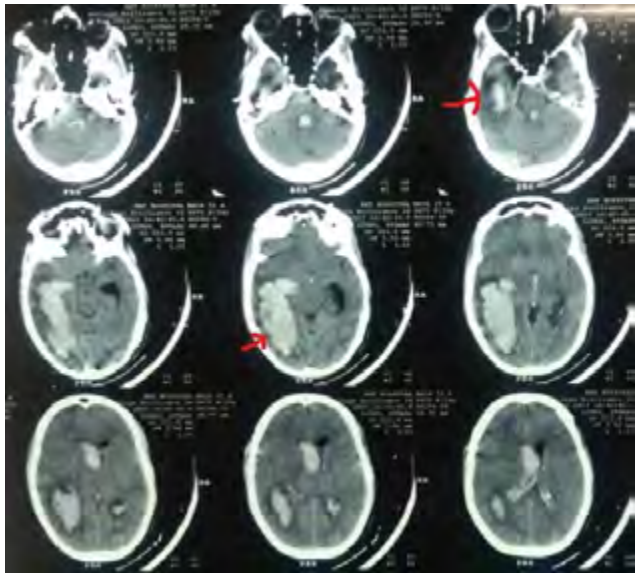

Figure 2. NCCT head showing intracranial hemorrhage in right parieto-temporal-occipital region (*red arrows*).

of pregnancy 1 year back. Following which she had abnormal menstrual cycles, but she did not seek any medical advice.

Her examination presently revealed pulse of 130/min, blood pressure (BP) - 60/40 mmHg, respiratory rate (RR) - 26/min, with normal oral temperature. Her Glasgow Coma Scale (GCS) was 10, which improved to 15 over next 24 hours. There was severe pallor. There was no icterus, clubbing or lymphadenopathy. On chest auscultation, bilateral generalized crepitations were present. Cardiovascular auscultation revealed loud S1 with pansystolic murmur of Grade II over the apex region. Per abdominal examination revealed a large lower abdominal mass that was firm in consistency, nontender. There was no evidence of ascites, or any organomegaly.

NCCT head revealed new subarachnoid hemorrhage (SAH) in left parietal lobe region with old intracerebral hemorrhage (ICH) changes (Fig. 3). Routine investigations were sent including CBC, LFT, RFT, thyroid profile. Chest X-ray showed multiple heterogeneous opacities in bilateral lung fields (Fig. 4). Bedside USG abdomen and pelvis showed heterogeneously enlarged uterus with echogenic mass seen in pelvis and bilateral adnexa are not visualized separately. There was also mild right-sided hydroureteronephrosis. Other investigations like serum vitamin B12, human immunodeficiency virus (HIV) enzyme-linked immunosorbent assay (ELISA); sputum for culture, acid fast bacilli (AFB), CBNAAT; ANA, cytoplasmic- antineutrophil cytoplasmic antibodies (cANCA), perinuclear-ANCA, antiphospholipid

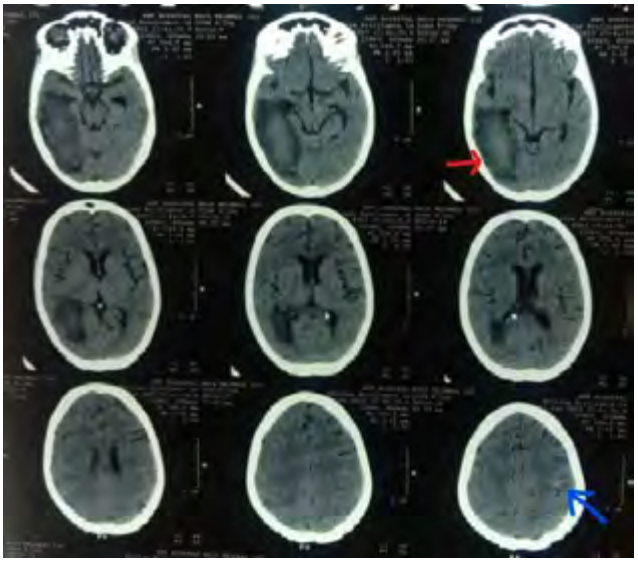

Figure 3. NCCT head showing mild linear hyperdensity in left parietal region (*blue arrow*). Old ICH changes are also seen (*red arrow*).

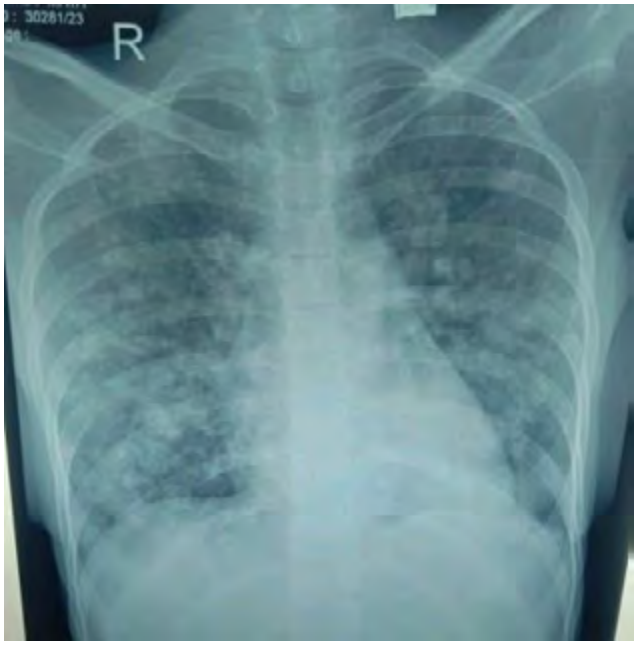

Figure 4. Chest X-ray PA view showing nodular opacities in bilateral lung fields suggestive of metastatic lesion.

antibodies (APLA), coagulation profile, peripheral blood smear (PBS) were sent. The results are shown in Table 1.

A provisional diagnosis of GTN-choriocarcinoma with metastases of lungs and brain with severe anemia and chronic heart failure was made.

She was started on steroids, 5 units of blood were transfused with inotropic support and as the patient's condition improved a contrast-enhanced computed

Table 1. Laboratory Investigations

Test name	Result
Hemoglobin	1.8 g/dL
TLC	24,300/μL
Platelet count	2.23 lakhs/μL
Peripheral smear	Normochromic normocytic RBCs, neutrophilic leukocytosis
INR	1.3
PT/aPTT	17 seconds/36 seconds
Urea	25 mg/dL
Serum creatinine	0.48 mg/dL
Total bilirubin	0.4 mg/dL
SGOT/SGPT	45/94 U/L
ALP	76 U/L
Serum sodium/potassium	132/3.2 mEq/L
T3	1.8 nmol/L
T4	126 nmol/L
TSH	0.0 uIU/mL
Beta-hCG	10,000 mIU/mL
Vitamin B12	1,206 pg/mL
ANA	0.10 AI (<1.0 - Negative)
Anti-cardiolipin Ab (IgG) ELISA	1.7 (<12 - Negative)
Anti-cardiolipin Ab (IgM) ELISA	0.8
Anti-phospholipid Ab (IgG) ELISA	2.9 (<12 - Negative)
Anti-phospholipid Ab (IgM) ELISA	1.6
Anti-dsDNA Ab	0.16 (<0.91 - Negative)
c-ANCA	0.31 (<0.35 - Negative)
p-ANCA	0.26 (<0.35 - Negative)
HIV ELISA	Nonreactive
Sputum culture	No growth after 48 hours of incubation
Sputum AFB and CBNAAT	Negative

TLC = Total leukocyte count; INR = International normalized ratio; PT = Prothrombin time; aPTT = Activated partial thromboplastin time; SGOT = Serum glutamic-oxaloacetic transaminase; SGPT = Serum glutamic-pyruvic transaminase; ALP = Alkaline phosphatase; T3 = Triiodothyronine; T4 = Thyroxine; TSH = Thyroid-stimulating hormone; hCG = Human chorionic gonadotropin; ANA = Antinuclear antibodies; Ab = Antibodies; IgG = Immunoglobulin G; IgM = Immunoglobulin M; ELISA = Enzyme-linked immunosorbent assay; dsDNA = Double-stranded deoxyribonucleic acid; ANCA = Antineutrophil cytoplasmic antibodies; HIV = Human immunodeficiency virus; AFB = Acid fast bacilli; CBNAAT = Cartridge-based nucleic acid amplification test.

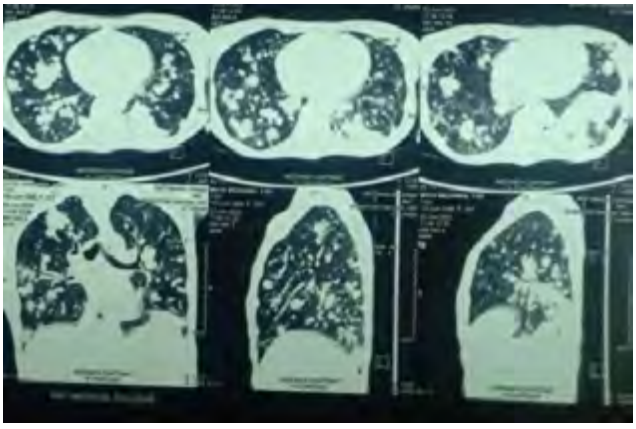

Figure 5. CECT thorax (lung window) showing multiple nodular opacities of varying sizes in both lung fields suggestive of metastases.

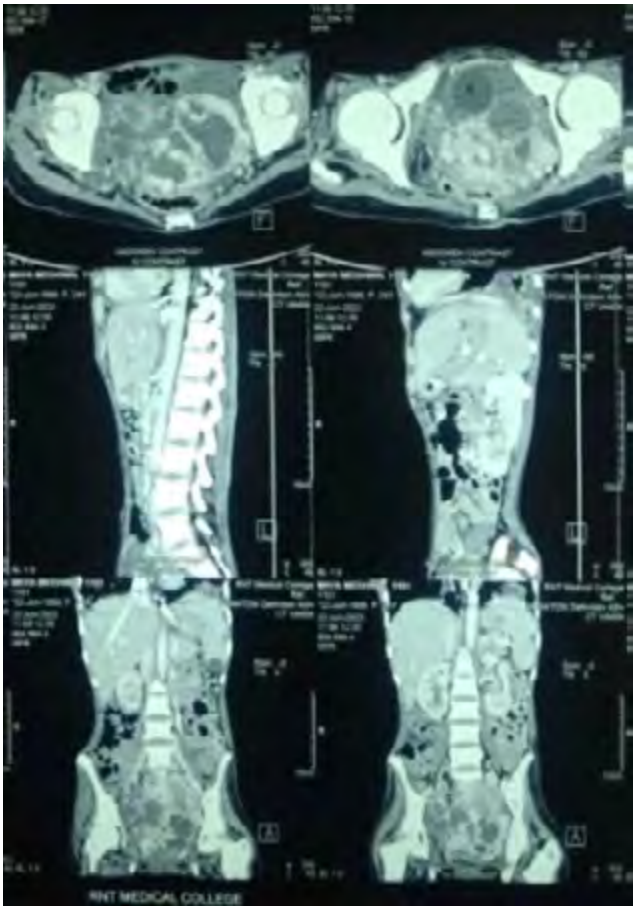

Figure 6. CECT abdomen and pelvis showing heterogeneously enhancing soft tissue density mass in pelvic cavity with nonseparate visualization of bilateral adnexa.

tomography (CECT) thorax and abdomen was planned. Heterogeneously enhancing soft tissue mass in pelvic cavity with nonseparate visualization of bilateral adnexa with multiple heterogeneous opacities of varying sizes in both lung fields were visualized (Figs. 5 and 6). Serum beta-hCG was sent immediately, which was found to be elevated to 10,000 mIU/mL. However, CA-125 and alpha fetoprotein (AFP) levels were within normal limits.

Considering her classical history, examination and lab findings, a provisional diagnosis of GTN with brain and lung metastases was made. She was clinically graded as FIGO Stage IV GTN and classified as high-risk GTN, according to WHO/FIGO risk score, which was 8.[4] A biopsy was planned but the patient's relatives did not give consent for it. The patient was then referred to oncology department for further management.

DISCUSSION

Gestational trophoblastic neoplasia (GTN) is a rare and highly malignant group of neoplasms arising from the trophoblastic cells of the placenta. Choriocarcinoma is a rare, highly malignant neoplasm of the gestational trophoblasts of the placenta. This tumor often demonstrates rapid hematogenous spread to multiple organs, and is associated with persistently high beta-hCG levels, usually more than 1 lakh mIU/mL, beta-hCG has both diagnostic and prognostic value in GTN[3,5]. Persistently low levels of hCG in patients without any prior history of trophoblastic disease may be misleading and hence, diagnosis requires high index of suspicion. Approximately 30% of choriocarcinoma patients have already metastasized at the time of diagnosis, and this is because the trophoblastic cells have high affinity towards blood vessels. Lungs (80%) are the most common site of metastasis, followed by vagina (30%) and liver (10%). Metastatic choriocarcinoma of the brain is seen in 3% to 28% of patients[2,6].

Maximum number of patients in the reported cases came to clinical attention due to cardiopulmonary complaints like cough, chest pain, hemoptysis, diffuse alveolar hemorrhage and sometimes congestive heart failure. This is followed by gastrointestinal manifestations like hematemesis, melena and intestinal perforation. CNS involvement is present in 10% of cases with stroke like lesions[7], focal neurological deficits, intra- or extra-axial hemorrhage, rarely SAH due to neoplastic cerebral aneurysms or oncotic aneurysms involving mainly the middle cerebral artery[8-10]. GTN is associated with features of hyperthyroidism as thyroid-stimulating hormone (TSH) and beta-hCG have identical alpha subunits.

In our case, the patient presented with recurrent intracranial hemorrhage and persistent cough despite taking ATT for 5 months. Also her irregular menstrual cycles were attributed to hyperthyroidism and the fact that it

could be linked to the above mentioned complaints was completely overlooked by the treating physician. The majority of GTN patients present at tertiary centers late, when they are in the advanced stages of the disease. Additionally, due to the high cost of laboratory and imaging evaluations, along with poor health seeking behavior of such patients, they suffer tragically. Loss of follow-up after a molar pregnancy is another reason for presentation of patients into the advanced stages.

Despite the fact that GTN is a highly treatable cancer with good prognosis, it becomes lethal because of the challenges faced in diagnosis and treatment. With increased education in primary health care workers, good referral services and proper follow-up after a molar pregnancy with beta-hCG can improve the overall possibility of survival in these patients[7,11].

CONCLUSION

The main aim of this case report is to sensitize physicians about the atypical presentations of GTN. They should keep this rare possibility of bleeding manifestations involving any organ systems in mind especially in women of reproductive age group even with low levels of beta-hCG. This helps in early diagnosis and reduces the overall morbidity and mortality of the disease.

REFERENCES

1. Jareemit N, Benjapibal M. Gestational trophoblastic neoplasia with gum metastasis: a case study and literature review. Case Rep Oncol. 2020;13(2):485-90.
2. Yang L, Xu P, Xi M, Wang H. FIGO stage IV gestational choriocarcinoma misdiagnosed as pulmonary tuberculosis: a case report. Oncol Lett. 2015;10(3):1924-6.
3. Konar H. DC Dutta's Textbook of Obstetrics: Including Perinatology & Contraception. 10th Edition. New Delhi, India: Jaypee Brothers Medical; 2023.
4. Ngan HYS, Kohorn EI, Cole LA, Kurman RJ, Kim SJ, Lurain JR, et al. Trophoblastic disease. Int J Gynecol Obstet. 2012;119S2.(FIGO CANCER REPORT 2012):S130-6.
5. Mchome BL, Masenga GG, Taylor P. A recurrent gestational choriocarcinoma case complicated by a silent postpartum ruptured uterus: a unique presentation. Tanzan J Health Res. 2018;20(2).
6. Shetty SK, Polnaya R. Atypical presentation of choriocarcinoma: a report of two cases. J South Asian Feder Obst Gynae. 2020;12(4):265-6.
7. Mangla M, Singla D, Kaur H, Sharma S. Unusual clinical presentations of choriocarcinoma: a systematic review of case reports. Taiwan J Obstet Gynecol. 2017;56(1):1-8.
8. Borella F, Cosma S, Ferraioli D, Preti M, Gallio N, Valabrega G, et al. From uterus to brain: an update on epidemiology, clinical features, and treatment of brain metastases from gestational trophoblastic neoplasia. Front Oncol. 2022;12:859071.
9. Ito Y, Araki Y, Izumi T, Okamoto S, Kimura M, Wakabayashi T. Case of subarachnoid hemorrhage from ruptured oncotic fusiform aneurysms from choriocarcinoma metastasis treated with aneurysmectomy and vessel reconstruction. World Neurosurg. 2018;113:98-102.
10. Fiste O, Mavrothalassitis E, Markellos C, Rodolakis A, Zagouri F, Dimopoulos MA, et al. Subarachnoid hemorrhage in a postpartum mother: a rare manifestation of an uncommon disease. Gynecol Oncol Rep. 2022;44 (101092):101092.
11. Bishop BN, Edemekong PF. Choriocarcinoma. [Updated 2023 Feb 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK535434/

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VIEWPOINT

Kabaddi and Health

MANPREET SINGH*, SATBIR SINGH DAGAR†, SANJAY KALRA‡

ABSTRACT

Kabaddi is a team sport, which is said to be an amalgam of seven different sports. It promotes the entire spectrum of health- musculoskeletal, sensorimotor, cardiorespiratory, autonomic, endocrine and metabolic, psychosocial, and financial- while ensuring that injuries and other hazards are minimized. Kabaddi represents a useful tool for promotion of health, and should be incorporated into all fitness regimens. In this article, the authors explore how the game of kabaddi offers an opportunity to optimize holistic health.

Keywords: Exercise medicine, social health, sports endocrinology, sports medicine

Kabaddi is an ancient game, which enjoys the status of national sport of Bangladesh, as well as official state sport of many Indian states[1]. A contact team sport, it is played by seven-member strong teams. In recent years, kabaddi has witnessed a great surge in popularity. In this opinion piece, we review how kabaddi is a perfect way of experiencing and enhancing holistic health.

Kabaddi involves one player, a raider, entering the opposing side of the court, aiming to touch as many opponents as possible, and returning to his/her side, white uttering 'kabaddi kabaddi kabaddi' continuously, without losing breath. How does this help the player achieve comprehensive health?

MUSCULOSKELETAL HEALTH

The sport requires flexibility and fitness, as well as energy, coupled with endurance, to succeed. Training for kabaddi, therefore involves focus on both aerobics, and resistance exercises, involving the trunk as well as all limbs. Kabaddi, thus, becomes a perfect way to achieve comprehensive physical fitness, ensuring balanced development of all muscle groups, acting at all joints.

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CARDIORESPIRATORY HEALTH

The game of kabaddi involves continuous vocalization of the word 'kabaddi', for a period of up to 30 seconds. This promotes cardiorespiratory endurance, and encourages aerobic strength and stamina. One may wish to measure "single breath kabaddi counting time" as a means of assessing cardiorespiratory reserve. This can be used as a person-friendly, socially acceptable concept in respiratory rehabilitation as well as general health promotion.

SENSORIMOTOR HEALTH

Success at kabaddi requires excellent coordination between the various senses - eyes, ears, touch and the locomotor system. Mind-body and eye-limb coordination is also needed. Kabaddi practice enhances these processes and leads to holistic health.

AUTONOMIC HEALTH

One important aspect of health is autonomic hygiene, or autonomic balance[2]. By this, we imply a state of balance between sympathetic and parasympathetic tone, leading to optimization of autonomic response. Kabaddi is a unique game, in that it expects both sympathetic (running, tackling) and parasympathetic (defending, breath-holding) activities from its players. This leads to a perfect autonomic balance.

PSYCHOSOCIAL HEALTH

Being a team sport, kabaddi fosters the spirit of teamwork, and contributes to social and emotional well-being. At the same time, each player gets equal opportunity to raid and thus, individual sportsmanship is also

nurtured. This is in contradistinction to other sports, where one-upmanship may be a desired quality, or where forward players are given more attention than others. By promoting collaboration and cooperation, kabaddi can contribute to societal peace and well-being.

FINANCIAL HEALTH

One aspect of health that is often missed is financial well-being. Sports can be an expensive pastime for some. Kabaddi, however, is a game which places no financial demands on its players. No expensive kit or maintenance is required to excel in the game. Rather, kabaddi has served as a vehicle for financial upliftment of many of its enthusiasts, who have turned professional, or secured well-paying jobs on the basis of their performance.

ENDOCRINE AND METABOLIC HEALTH

There is an upper cap of 85 kg (for men) and 75 kg (for women) to participate in competitive kabaddi. This enjoins the player to maintain his or her baro-metabolic health, by adhering to a balanced diet and following a regular exercise regimen. Kabaddi players work hard to prevent and manage obesity.

As in other sports, playing kabaddi is associated with the release of "happy hormones", such as dopamine, oxytocin, serotonin, and endorphins. It is noteworthy that kabaddi is the state game of Haryana, and "Happy Hormones" is the name of Haryana's team at the annual Colors of India event organized during the annual Endocrine Society of India conference (personal communication, SK).

Substance abuse is a major threat to health. Kabaddi is a drug-free sport and its coaches and leaders have set an exemplary no-tolerance policy for drugs, which is followed by all players.

NATIONAL HEALTH

Kabaddi is an ancient India sport, with roots in Tamil Nadu, which is mentioned in the Mahabharata (Abhimanyu's story) as well. In recent times, kabaddi has succeeded in bridging the urban-rural divide, as well as gender bias, to create a feeling of national pride across all strata of society. Kabaddi has spread its wings for beyond India[3], and beyond South Asia as well. In this manner, it contributes to national prestige and health.

CHALLENGES

No game is without its challenges to health, and this is true for kabaddi as well. Being a contact sport, kabaddi may lead to physical injury[4,5]. Musculoskeletal injuries, especially at the knee and ankle joints, may occur in kabaddi players. Competitive players therefore undergo regular rehabilitative sessions. Guidance of expert sports medicine specialists and coaches is required to minimize and mitigate the effect of such injuries. Though a competitive sport, kabaddi does not exhibit the kind of sledging, fighting or unruly behavior that is often noticed in some other sports. This bonhomie extends to kabaddi fans and aficionados as well, who do not indulge in destructive activities that seem to be a part and parcel of some other games.

THE WAY FORWARD

Kabaddi, as a game, has made great strides in recent years. Its true potential; however, still remains to be unlocked. An amalgam of multiple sports, including athletics, gymnastics, judo, wrestling, boxing and rugby, kabaddi is a game which addresses the entire spectrum of health. More efforts are needed to spread awareness about the benefits of this game. Our policymakers and administrators do work hard to accomplish this goal.

Health care professionals can contribute by practicing, promoting and propagating this team sport, at all platforms possible, as a vehicle for comprehensive health[6]. Kabaddi can easily be incorporated into medical programs, including those for cardiorespiratory rehabilitation; weight loss diabetes and hypertension management, psychosocial rehabilitation, and general health promotion. It can be a value addition in team-building exercises, and can be used to promote reconciliation and harmony. All this can be achieved without the need for expensive gadgets, equipment, or ancillary supplies. Health care professionals should also promote healthy nutrition as a means of achieving better performances on the sports field[7]. Systematic research on these, and other facets of kabaddi will help understand the strength of this game. This, in turn, will allow us to utilize it effectively to accomplish our goal: fitness and functionality for all health and happiness for all.

REFERENCES

1. Rehal S. The sportification and internationalization of Kabaddi: a sociological understanding. Int J Sport Soc. 2022;13(2):49-64.
2. Kalra S, Arora S, Kapoor N. Autonomic hygiene and diabetes. J Pak Med Assoc. 2023;73(2):424-5.
3. Hussain U, Cunningham GB. These are "our" sports': Kabaddi and Kho-Kho women athletes from the Islamic Republic of Pakistan. Int Rev Sport Sociol Sport. 2021;56(7):1051-69.

4. Dhillon MS, John R, Sharma S, Prabhakar S, Behera P, Saxena S, et al. Epidemiology of knee injuries in Indian Kabaddi players. Asian J Sports Med. 2017;8(1): e31670.
5. Pal S, Kalra S, Kumar S, Pawaria S, Rishi P. A literature review on common injuries and their prevention in Kabaddi. Eur J Sports Exerc Sci. 2020;9(1):01-9.
6. Kalra S, Sahoo A, Das S, Kumar KVSH, Baliarsinha AK, Mohanty B, et al. The Bhubaneswar Declaration on Sports Endocrinology, 2018. Indian J Endocrinol Metabol. 2018;22(Suppl 1):S14-6.
7. Kalra S, Sharma HB. Winning Gold for India: The role of health and health care providers. Indian J Clin Pract. 2022;33(3):8-10.

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Screen All Men with Metabolic Syndrome and Type 2 Diabetes for Hypogonadism

Testosterone therapy may improve insulin sensitivity in men with higher baseline insulin resistance levels and adult-onset testosterone deficiency, suggests a study recently published in the journal *Diabetes, Obesity and Metabolism*[1].

This study designed as a randomized, placebo-controlled, double-blind randomized controlled trial (RCT) enrolled 184 men who had metabolic syndrome and hypogonadism. Of these, 113 received testosterone undecanoate and 71 received a placebo. Following the RCT, all men were given TU in an open-label phase. The analysis focused on men who were not taking antiglycemic agents, with 81 men in the testosterone undecanoate group and 54 men in the placebo group. Inter-group comparison of homeostasis model assessment of insulin resistance (HOMA-IR) was conducted at 30 weeks within the RCT, while intra-group comparison was done on men who received testosterone during the RCT and open-label phases (study cohort) and men who initially received placebo during the RCT and later switched to testosterone during the open-label phase (confirmatory cohort). The objective of the study was to examine and report on the alterations in the ΔHOMA-IR after testosterone therapy in men diagnosed with hypogonadism and metabolic syndrome.

There was a significant reduction in median HOMA-IR levels at various time points, after 18 weeks, compared to baseline in men receiving testosterone, both in the study and confirmatory cohorts. "Baseline HOMA-IR was significantly associated with ΔHOMA-IR in both cohorts, whilst baseline waist circumference (WC) (not ΔWC) was significantly associated only in the study cohort." There was also a marked reduction in median fasting glucose (30 weeks: –2.1%; 138 weeks: –4.9%) and insulin levels (30 weeks: –10.5%; 138 weeks: –35.5%) after testosterone treatment. Men in the placebo group did not show significant changes in HOMA-IR. Baseline HOMA-IR was identified as the main predictor of decrease in HOMA-IR following testosterone treatment.

The study findings indicate that baseline HOMA-IR levels and not baseline WC or change in WC better predict changes in HOMA-IR over time, with a greater percentage change observed in insulin levels compared to fasting glucose levels. The decline in HOMA-IR was evident only after 18 weeks of testosterone and was maintained for the study duration. In men with metabolic syndrome or type 2 diabetes who are not on antiglycemic therapy, improvements in HOMA-IR may be more significant than what is reflected by changes in fasting glucose levels alone. Those who had higher baseline HOMA-IR tended to experience greater reductions in HOMA-IR after receiving testosterone.

Therefore, it is recommended to include screening for hypogonadism in the management of men with metabolic syndrome or central obesity or type 2 diabetes, conditions marked by insulin resistance. Interventions targeting insulin sensitivity, such as testosterone therapy for hypogonadism, may have a more significant impact on overall metabolic health beyond what can be assessed through changes in fasting glucose alone.

Reference

1. Tishova Y, et al. Testosterone therapy reduces insulin resistance in men with adult-onset testosterone deficiency and metabolic syndrome. Results from the Moscow Study, a randomized controlled trial with an open-label phase. Diabetes Obes Metab. 2024 Mar 3.

BRIEF COMMUNICATION

Dermato-Metabolic Syndrome

SANJAY KALRA*, KIRTI KALRA†, KIRAN BAJAJ‡

ABSTRACT

We define the term 'dermato-metabolic syndrome' as the dermatologic (skin, hair, and nail) conditions associated with metabolic syndrome. These abnormalities can be classified as metabolic (hyperinsulinism, hyperandrogenism, hyperuricemia), mechanical (involvement of epidermal, dermal, sebaceous and sweat glands, subcutaneous tissue), mitogenic, miasmatic (infections) and microvascular/venous insufficiency. This construct highlights the importance of skin, and its related appendages, as a site of target organ damage in metabolic syndrome. The concept underscores the need for team-based approach towards dermato-vigilance in metabolic patients, metabolic vigilance in dermatologic patients, and management of both dermatological and metabolic manifestations of dermo-metabolic syndrome.

Keywords: Acanthosis, acne, diabetes, dermatology, dry skin, hirsutism, polycystic ovary syndrome, psoriasis, obesity, Tinea

Metabolic syndrome, with its component diseases of diabetes mellitus, obesity, hypertension, and dyslipidemia, is a major cause of morbidity and mortality. Newer associations of metabolic syndrome are being understood, including the dermatological manifestations of the disease[1].

We use the term 'dermato-metabolic syndrome' to describe the dermatologic (skin, hair, and nail) conditions associated with metabolic syndrome; to highlight the fact that the skin is a site of target organ damage in metabolic disorders; and to reinforce the need for metabolic vigilance and optimization in these situations.

DERMO-METABOLIC SYNDROME

Metabolic syndrome changes the structure and function of the skin and related tissues including the epidermis, dermis, sebaceous glands, sweat glands, and subcutaneous fat. Skin diseases are commonly classified according to the anatomic layers that are predominantly affected. We share a unique classification that highlights the various ways in which metabolic dysfunction can impact the skin.

The metabolic, mechanical, mitogenic, miasmatic, and (micro)vascular conditions that make up the dermo-metabolic syndrome represent a wide spectrum of pathophysiological abnormalities that constitute the syndrome.

INSULIN RESISTANCE – THE CONNECTING LINK

Elevated insulin concentration or hyperinsulinemia is a key pathophysiologic feature of metabolic syndrome[2]. Keratinocytes and fibroblasts express receptors for insulin and insulin-like growth factor-1 (IGF-1) and hyperinsulinemia exerts a mitogenic effect on these cells[3]. Insulin resistance is also linked to hyperandrogenism and is responsible for many features of excess androgen such as hirsutism and acne[4].

Additionally, insulin resistance is characterized by a state of chronic inflammation, which can contribute to development of inflammatory skin conditions[5].

SIGNIFICANCE

Knowledge about dermatological manifestations is important, as the skin is a mirror of metabolic health.

Both dermatologists and physicians should be aware of the intricate relationship between the skin and metabolic health, and be able to evaluate and address clinically significant issues as a team.

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Table 1. The **5M** Classification of Dermato-Metabolic Syndrome

Metabolic manifestations

Hyperinsulinism
- Acanthosis nigricans
- Acrochordons
- Scleredema diabeticorum
- Ichthyosiform skin changes
- Maturational hyperpigmentation

Hyperandrogenism
- Acne
- Hirsutism
- Patterned alopecia

Hyperlipidemia
- Xanthelasma
- Necrobiosis lipoidica
- Xanthomas (Tendinous, planar, tuberous, eruptive)

Hyperuricemia
- Gouty tophi
- Gouty panniculitis

Mitogenic
- Psoriasis vulgaris
- Plantar hyperkeratosis
- Keratosis pilaris
- Granuloma annulare
- Lichen planus
- Atopic dermatitis

Mechanical manifestations

Epidermal/dermal
- Striae distensae
- Intertrigo
- Diabetic bullae
- Acquired reactive perforating collagenosis

Sebaceous blockage
- Hidradenitis suppurativa

Subcutaneous
- Lipodystrophy
- Cellulite

Miasma (infections)
- Folliculitis, furunculosis, carbuncles
- Cellulitis
- Erythrasma
- Fungal infection: Candidiasis, dermatophytosis, mucormycosis

Microvascular and venous insufficiency
- Dry skin (xerosis)
- Diabetic pruritus
- Diabetic dermopathy
- Lymphedema
- Venous ulcers
- Peripheral neuropathy

REFERENCES

1. Ambalal SM. Metabolic syndrome and skin: interactions and implications. Indian J Dermatol. 2022;67(2):138-45.
2. Thomas DD, Corkey BE, Istfan NW, Apovian CM. Hyperinsulinemia: an early indicator of metabolic dysfunction. J Endocr Soc. 2019;3(9):1727-47.
3. Hermanns-Lê T, Scheen A, Piérard GE. Acanthosis nigricans associated with insulin resistance : pathophysiology and management. Am J Clin Dermatol. 2004;5(3): 199-203.
4. Xu Y, Qiao J. Association of insulin resistance and elevated androgen levels with polycystic ovarian syndrome (PCOS): a review of literature. J Healthc Eng. 2022;2022:9240569.
5. Matulewicz N, Karczewska-Kupczewska M. Insulin resistance and chronic inflammation. Postepy Hig Med Dosw (Online). 2016;70(0):1245-58.

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Blooming Resilience: Chaconia and Obesity

The urgent call to address the obesity pandemic continues as there could be 4 billion overweight or obese persons globally by 2035[1]. As waistlines expand and health risks mount, policymakers face a conundrum: how to protect their citizens while balancing economic interests.

The complexity of obesity has been likened to the majestic Banyan tree that graces the landscapes of India[2]. However, I am drawn to the vibrant metaphor presented by the National Flower of Trinidad and Tobago—the Chaconia or *Warszewiczia coccinea* from the family Rubiaceae[3]. There are parallels between its unfolding petals and the multifaceted dimensions of obesity.

The fiery red hue of the Chaconia is a poignant symbol of our endurance and vitality. The struggle against obesity mirrors the Chaconia's tenacity as communities grapple with the challenges posed by sedentary lifestyles, processed foods, digital screens, lack of sleep, stress, hormonal influences and cultural beliefs.

The Chaconia's journey, from bud to blossom, parallels the stages of addressing obesity from prevention to intervention. Just as the flower requires careful tending, the battle against obesity necessitates a comprehensive approach of awareness and support.

The Chaconia reminds us to plant the seeds of change and nurture a future where health blossoms. Education stands as a foundational root in public health for dietary changes and active lifestyles. As our National Flower endures adverse conditions, those battling obesity are often faced with stigma and biases. We must acknowledge the individuality of each struggle.

The Chaconia's presence in Trinidad and Tobago's landscape is a symbol of pride and unity. Similarly, addressing obesity requires a collective effort that spans communities, health care systems and governments. Nutritional labeling, taxation of sugar-sweetened beverages, and public awareness campaigns are strategies to address the deleterious impact of the fast food industry[4].

My parents, with unwavering dedication, water, prune and ensure the optimal conditions for the Chaconia's growth at our family's home. The management of obesity also demands a holistic approach as its physical and emotional aspects are tended with the same meticulous care. Just as the Chaconia thrives under their watchful eyes, the journey towards a healthier weight flourishes when met with compassion and commitment.

REFERENCES

1. World Obesity Federation Global Obesity Observatory. (2024). World Obesity Day Atlases - Obesity Atlas 2024 [online]. Available at: https://data.worldobesity.org/publications/. Accessed April 1, 2024.
2. Kalra S, Verma S, Kapoor N. Obesity and the banyan tree. Indian J Clin Pract. 2023;34(6):8-9.
3. National symbols. The Office of the President of the Republic of Trinidad and Tobago; 2024. Available at: https://otp.tt/trinidad-and-tobago/national-emblems/. Accessed April 1, 2024.
4. Cominato L, Di Biagio GF, Lellis D, Franco RR, Mancini MC, de Melo ME. Obesity prevention: strategies and challenges in Latin America. Curr Obes Rep. 2018;7(2):97-104.

Consent and Capacity Assessment

The patient has a right to choose his/her treatment; however, the physician also has a duty of care towards his patient while following the principle of first do no harm or *primum non nocere*. The answer to this conundrum lies in the principle of informed consent.

TYPES OF CONSENT

The meaning of the word consent as described by the Oxford dictionary is "permission for something to happen or agreement to do something". But, in the context of a doctor-patient relationship, consent means the grant of permission by the patient on his volition for an act such as a diagnostic, surgical or therapeutic procedure to be carried out by the doctor[1].

When a patient enters a doctor's consultation room and relates his complaints to the doctor, this is implied consent for examination and routine diagnostic tests, which is implied by action. In circumstances such as arranging an appointment with a doctor, keeping the appointment, answering questions relating to history and to submit without objection to physical examination, consent is clearly implied. Express consent (verbal/written) is that which is declared by the patient. But, for complex diagnostic investigations and interventional procedures, which involve risks, a written informed consent is necessary[2].

Informed consent is not just an ethical obligation, it is also a legal pre-requisite today. Patient autonomy constitutes the legal and ethical basis for informed consent, which gives the patient the right to make decisions about their health based on the information given. Failure to give all the necessary facts to the patients regarding their treatment is a violation of their rights. Not taking consent is therefore a gross negligence.

Battery is any act, which is done without permission. It comprises "unpermitted, unprivileged, intentional contact with another's person". Evidence of a bodily harm is not mandatory, "the intended contact itself is the harm"[3]. Hence, battery is a punishable offence[2].

PRINCIPLES OF CONSENT

The three judges' Constitution Bench of the Supreme Court summarized the principles relating to consent in the landmark judgment on consent in the matter of Samira Kohli versus Dr Prabha Manchanda & Anr on 16 January, 2008.

"(i) A doctor has to seek and secure the consent of the patient before commencing a 'treatment' (the term 'treatment' includes surgery also). The consent so obtained should be real and valid, which means that: the patient should have the capacity and competence to consent; his consent should be voluntary; and his consent should be on the basis of adequate information concerning the nature of the treatment procedure, so that he knows what is consenting to.

(ii) The 'adequate information' to be furnished by the doctor (or a member of his team) who treats the patient, should enable the patient to make a balanced judgment as to whether he should submit himself to the particular treatment as to whether he should submit himself to the particular treatment or not. This means that the Doctor should disclose (a) nature and procedure of the treatment and its purpose, benefits and effect; (b) alternatives if any available; (c) an outline of the substantial risks; and (d) adverse consequences of refusing treatment. But there is no need to explain remote or theoretical risks involved, which may frighten or confuse a patient and result in refusal of consent for the necessary treatment. Similarly, there is no need to explain the remote or theoretical risks of refusal to take treatment which may persuade a patient to undergo a fanciful or unnecessary treatment. A balance should be achieved between the need for disclosing necessary and adequate information and at the same time avoid the possibility of the patient being deterred from agreeing to a necessary treatment or offering to undergo an unnecessary treatment.

(iii) Consent given only for a diagnostic procedure, cannot be considered as consent for therapeutic treatment. Consent given for a specific treatment procedure will not be valid for conducting some other treatment procedure. The fact that the unauthorized additional surgery is beneficial to the patient, or that it would save considerable time and expense to the patient, or would relieve the patient from pain and suffering in future, are not grounds of defence in an action in tort for negligence or assault and battery. The only exception to this rule is where the additional procedure though unauthorized, is necessary in order to save the life or preserve the health of the patient and it would be unreasonable to delay such unauthorized procedure until patient regains consciousness and takes a decision.

(iv) There can be a common consent for diagnostic and operative procedures where they are contemplated. There can also be a common consent for a particular surgical procedure and an additional or further procedure that may become necessary during the course of surgery.

(v) The nature and extent of information to be furnished by the doctor to the patient to secure the consent need not be of the stringent and high degree mentioned in Canterbury but should be of the extent which is accepted as normal and proper by a body of medical men skilled and experienced in the particular field. It will depend upon the physical and mental condition of the patient, the nature of treatment, and the risk and consequences attached to the treatment."

COMPONENTS OF A VALID CONSENT

A valid consent must fulfil the following three essential components:

- Disclosure: Provision of relevant information by the clinician and its comprehension by the patient.
- Capacity: Ability of the patient to understand the relevant information and to appreciate those consequences of his or her decision that might reasonably be foreseen.
- Voluntariness: Right of the patient to come to a decision freely, without force, coercion or manipulation.

Consent is not valid if it is given under fear of injury/intimidation, misconception or misrepresentation of facts is an invalid consent[1].

Blanket consent is not legal. This denotes that the consent given by the patient for a diagnostic procedure cannot be extended to a therapeutic procedure unless there is a potentially life-threatening emergency.

This was also the position held by the Supreme Court of India in the matter of Samira Kohli vs Dr. Prabha Manchanda & Anr on 16 January, 2008 Appeal (civil) 1949 of 2004, where the Apex Court said, "*We therefore hold that in Medical Law, where a surgeon is consulted by a patient, and consent of the patient is taken for diagnostic procedure/surgery, such consent cannot be considered as authorisation or permission to perform therapeutic surgery either conservative or radical (except in life-threatening or emergent situations). Similarly, where the consent by the patient is for a particular operative surgery, it cannot be treated as consent for an unauthorized additional procedure involving removal of an organ, only on the ground that such removal is beneficial to the patient or is likely to prevent some danger developing in future, where there is no imminent danger to the life or health of the patient.*"

EXCEPTIONS TO INFORMED CONSENT

If the patient is in a critical condition and is unable to give consent and/or the proxy is not available, then the patient can be treated without his/her consent.

INFORMED REFUSAL

Informed refusal is when a competent patient refuses a recommended medical test or procedure. It is the duty of the treating doctor to ensure that the patient understands the potential adverse consequences of refusal. Like informed consent, informed refusal must also be documented. Failing to obtain an informed refusal before accepting a patient's decision to forego a test or procedure may make the doctor liable to negligence.

ASSESSING PATIENT CAPACITY FOR DECISION-MAKING

Besides clinical examination of the patient, assessment of patient capacity for decision-making also constitutes an important part of the doctor-patient communication. Capacity is determined by cognition and cognitive impairment may also impair decision-making capacity of the patient[4].

Patients with traumatic brain injury or any psychiatric illnesses such as schizophrenia, bipolar disorder and unipolar major depression or neurodegenerative diseases like Alzheimer's disease and Parkinson's disease are likely to have ineffective capacity for decision-making. Older adults, the elderly and inpatients are also at higher risk of having impaired cognition due to underlying chronic medical conditions or aging or delirium[4]. Stress, pain, medication effects and intoxication can also compromise decision-making capacity in healthy people[5]. Hence, respecting the patient's autonomy is important in cognitively impaired patients; at the same time, it is also important to act in the best interest of the patient[4].

Capacity vis a vis Competency

Although decision-making capacity and competence appear similar terms, they are not interchangeable. Competence is a legal notion decided by courts and judges, whereas decision making capacity is clinically judged by a clinician[6].

Four abilities are assessed when determining decision-making capacity[7]:

- **Understanding:** The ability to fully grasp information related to diagnosis and treatment.

- **Appreciation:** Being able to personalize the information given i.e., relating it to one's own situation by evaluating the information.
- **Reasoning:** Being able to rationally compare the treatment options
- **Expressing a choice:** Being able to convey the choice of treatment.

Clinical Tools to Measure Capacity

- Mini-Mental Status Examination (MMSE): A bed-side test which measures cognitive function; scores range from 0 to 30.
- MacArthur Competence Assessment Tools for Treatment (MacCAT-T): It is the gold standard test for assessment of capacity.
- Capacity to Consent to Treatment Instrument (CCTI): Uses hypothetical clinical vignettes to assess capacity across all aforementioned four domains.

Documentation

The observations of the examination and the reasoning employed when judging the capacity must be documented in the medical record of the patient. A summary of the questions asked and answers should be duly recorded. The clinical tools to measure capacity must also be mentioned.

What to do When a Patient Lacks Capacity

If the patient is found deficient in capacity to make decision regarding their treatment, then advanced directives must be taken into consideration. In absence of an advanced directive, a surrogate must be involved in decision-making. If there is no surrogate, then the court may appoint a legal guardian to take decisions on behalf of the patient[6].

Advance Medical Directive

In the landmark judgment "Common Cause versus Union of India, 2018 (5) SCC 1" delivered in 2018, the Hon'ble Supreme Court of India held that the Right to die with dignity is now a fundamental right under Article 21 of Constitution of India. It has legalized passive euthanasia and advance medical directive/ living will. It affords the terminally ill patient the right to die with dignity by allowing them to draft a living will specifying refusal of medical treatment including withdrawal from life-saving devices.

In the said judgment, the Hon'ble Apex Court has laid down certain guidelines and directions w.r.t. advance medical directives which shall remain in force till the Parliament makes legislation on this subject. The Hon'ble Supreme Court has held that:

> *"191. In our considered opinion, Advance Medical Directive would serve as a fruitful means to facilitate the fructification of the sacrosanct right to life with dignity. The said directive, we think, will dispel many a doubt at the relevant time of need during the course of treatment of the patient. That apart, it will strengthen the mind of the treating doctors as they will be in a position to ensure, after being satisfied, that they are acting in a lawful manner. We may hasten to add that Advance Medical Directive cannot operate in abstraction. There has to be safeguards. They need to be spelt out. We enumerate them as follows:*
>
> *(a) Who can execute the Advance Directive and how?*
>
> *(i) The Advance Directive can be executed only by an adult who is of a sound and healthy state of mind and in a position to communicate, relate and comprehend the purpose and consequences of executing the document.*
>
> *(ii) It must be voluntarily executed and without any coercion or inducement or compulsion and after having full knowledge or information.*
>
> *(iii) It should have characteristics of an informed consent given without any undue influence or constraint.*
>
> *(iv) It shall be in writing clearly stating as to when medical treatment may be withdrawn or no specific medical treatment shall be given which will only have the effect of delaying the process of death that may otherwise cause him/her pain, anguish and suffering and further put him/her in a state of indignity.*
>
> *(b) What should it contain?*
>
> *(i) It should clearly indicate the decision relating to the circumstances in which withholding or withdrawal of medical treatment can be resorted to.*
>
> *(ii) It should be in specific terms and the instructions must be absolutely clear and unambiguous.*
>
> *(iii) It should mention that the executor may revoke the instructions/authority at any time.*
>
> *(iv) It should disclose that the executor has understood the consequences of executing such a document.*
>
> *(v) It should specify the name of a guardian or close relative who, in the event of the executor*

becoming incapable of taking decision at the relevant time, will be authorized to give consent to refuse or withdraw medical treatment in a manner consistent with the Advance Directive.

(vi) In the event that there is more than one valid Advance Directive, none of which have been revoked, the most recently signed Advance Directive will be considered as the last expression of the patient's wishes and will be given effect to.

(c) How should it be recorded and preserved?

(i) The document should be signed by the executor in the presence of two attesting witnesses, preferably independent, and countersigned by the jurisdictional Judicial Magistrate of First Class (JMFC) so designated by the concerned District Judge.

(ii) The witnesses and the jurisdictional JMFC shall record their satisfaction that the document has been executed voluntarily and without any coercion or inducement or compulsion and with full understanding of all the relevant information and consequences.

(iii) The JMFC shall preserve one copy of the document in his office, in addition to keeping it in digital format.

(iv) The JMFC shall forward one copy of the document to the Registry of the jurisdictional District Court for being preserved. Additionally, the Registry of the District Judge shall retain the document in digital format.

(v) The JMFC shall cause to inform the immediate family members of the executor, if not present at the time of execution, and make them aware about the execution of the document.

(vi) A copy shall be handed over to the competent officer of the local Government or the Municipal Corporation or Municipality or Panchayat, as the case may be. The aforesaid authorities shall nominate a competent official in that regard who shall be the custodian of the said document.

(vii) The JMFC shall cause to handover copy of the Advance Directive to the family physician, if any.

(d) When and by whom can it be given effect to?

(i) In the event the executor becomes terminally ill and is undergoing prolonged medical treatment with no hope of recovery and cure of the ailment, the treating physician, when made aware about the Advance Directive, shall ascertain the genuineness and authenticity thereof from the jurisdictional JMFC before acting upon the same.

(ii) The instructions in the document must be given due weight by the doctors. However, it should be given effect to only after being fully satisfied that the executor is terminally ill and is undergoing prolonged treatment or is surviving on life support and that the illness of the executor is incurable or there is no hope of him/her being cured.

(iii) If the physician treating the patient (executor of the document) is satisfied that the instructions given in the document need to be acted upon, he shall inform the executor or his guardian/close relative, as the case may be, about the nature of illness, the availability of medical care and consequences of alternative forms of treatment and the consequences of remaining untreated. He must also ensure that he believes on reasonable grounds that the person in question understands the information provided, has cogitated over the options and has come to a firm view that the option of withdrawal or refusal of medical treatment is the best choice.

(iv) The physician/hospital where the executor has been admitted for medical treatment shall then constitute a Medical Board consisting of the Head of the treating Department and at least three experts from the fields of general medicine, cardiology, neurology, nephrology, psychiatry or oncology with experience in critical care and with overall standing in the medical profession of at least twenty years who, in turn, shall visit the patient in the presence of his guardian/close relative and form an opinion whether to certify or not to certify carrying out the instructions of withdrawal or refusal of further medical treatment. This decision shall be regarded as a preliminary opinion.

(v) In the event the Hospital Medical Board certifies that the instructions contained in the Advance Directive ought to be carried out, the physician/hospital shall forthwith inform the jurisdictional Collector about the proposal. The jurisdictional Collector shall then immediately constitute a Medical Board

comprising the Chief District Medical Officer of the concerned district as the Chairman and three expert doctors from the fields of general medicine, cardiology, neurology, nephrology, psychiatry or oncology with experience in critical care and with overall standing in the medical profession of at least twenty years (who were not members of the previous Medical Board of the hospital). They shall jointly visit the hospital where the patient is admitted and if they concur with the initial decision of the Medical Board of the hospital, they may endorse the certificate to carry out the instructions given in the Advance Directive.

(vi) The Board constituted by the Collector must beforehand ascertain the wishes of the executor if he is in a position to communicate and is capable of understanding the consequences of withdrawal of medical treatment. In the event the executor is incapable of taking decision or develops impaired decision-making capacity, then the consent of the guardian nominated by the executor in the Advance Directive should be obtained regarding refusal or withdrawal of medical treatment to the executor to the extent of and consistent with the clear instructions given in the Advance Directive.

(vii) The Chairman of the Medical Board nominated by the Collector, that is, the Chief District Medical Officer, shall convey the decision of the Board to the jurisdictional JMFC before giving effect to the decision to withdraw the medical treatment administered to the executor. The JMFC shall visit the patient at the earliest and, after examining all aspects, authorise the implementation of the decision of the Board.

(viii) It will be open to the executor to revoke the document at any stage before it is acted upon and implemented.

(e) What if permission is refused by the Medical Board?

(i) If permission to withdraw medical treatment is refused by the Medical Board, it would be open to the executor of the Advance Directive or his family members or even the treating doctor or the hospital staff to approach the High Court by way of writ petition under Article 226 of the Constitution. If such application is filed before the High Court, the Chief Justice of the said High Court shall constitute a Division Bench to decide upon grant of approval or to refuse the same. The High Court will be free to constitute an independent Committee consisting of three doctors from the fields of general medicine, cardiology, neurology, nephrology, psychiatry or oncology with experience in critical care and with overall standing in the medical profession of at least twenty years.

(ii) The High Court shall hear the application expeditiously after affording opportunity to the State counsel. It would be open to the High Court to constitute Medical Board in terms of its order to examine the patient and submit report about the feasibility of acting upon the instructions contained in the Advance Directive.

(iii) Needless to say that the High Court shall render its decision at the earliest as such matters cannot brook any delay and it shall ascribe reasons specifically keeping in mind the principles of "best interests of the patient".

(f) Revocation or inapplicability of Advance Directive

(i) An individual may withdraw or alter the Advance Directive at any time when he/she has the capacity to do so and by following the same procedure as provided for recording of Advance Directive. Withdrawal or revocation of an Advance Directive must be in writing.

(ii) An Advance Directive shall not be applicable to the treatment in question if there are reasonable grounds for believing that circumstances exist which the person making the directive did not anticipate at the time of the Advance Directive and which would have affected his decision had he anticipated them.

(iii) If the Advance Directive is not clear and ambiguous, the concerned Medical Boards shall not give effect to the same and, in that event, the guidelines meant for patients without Advance Directive shall be made applicable.

(iv) Where the Hospital Medical Board takes a decision not to follow an Advance Directive while treating a person, then it shall make an application to the Medical Board constituted by the Collector for consideration and appropriate direction on the Advance Directive."

"192. It is necessary to make it clear that there will be cases where there is no Advance Directive. The said class of persons cannot be alienated. In cases where there is no Advance

Directive, the procedure and safeguards are to be same as applied to cases where Advance Directives are in existence and in addition there to, the following procedure shall be followed:

(i) In cases where the patient is terminally ill and undergoing prolonged treatment in respect of ailment which is incurable or where there is no hope of being cured, the physician may inform the hospital which, in turn, shall constitute a Hospital Medical Board in the manner indicated earlier. The Hospital Medical Board shall discuss with the family physician and the family members and record the minutes of the discussion in writing. During the discussion, the family members shall be apprised of the pros and cons of withdrawal or refusal of further medical treatment to the patient and if they give consent in writing, then the Hospital Medical Board may certify the course of action to be taken. Their decision will be regarded as a preliminary opinion.

(ii) In the event the Hospital Medical Board certifies the option of withdrawal or refusal of further medical treatment, the hospital shall immediately inform the jurisdictional Collector. The jurisdictional Collector shall then constitute a Medical Board comprising the Chief District Medical Officer as the Chairman and three experts from the fields of general medicine, cardiology, neurology, nephrology, psychiatry or oncology with experience in critical care and with overall standing in the medical profession of at least twenty years. The Medical Board constituted by the Collector shall visit the hospital for physical examination of the patient and, after studying the medical papers, may concur with the opinion of the Hospital Medical Board. In that event, intimation shall be given by the Chairman of the Collector nominated Medical Board to the JMFC and the family members of the patient.

(iii) The JMFC shall visit the patient at the earliest and verify the medical reports, examine the condition of the patient, discuss with the family members of the patient and, if satisfied in all respects, may endorse the decision of the Collector nominated Medical Board to withdraw or refuse further medical treatment to the terminally ill patient.

(iv) There may be cases where the Board may not take a decision to the effect of withdrawing medical treatment of the patient on the Collector nominated Medical Board may not concur with the opinion of the hospital Medical Board. In such a situation, the nominee of the patient or the family member or the treating doctor or the hospital staff can seek permission from the High Court to withdraw life support by way of writ petition under Article 226 of the Constitution in which case the Chief Justice of the said High Court shall constitute a Division Bench which shall decide to grant approval or not. The High Court may constitute an independent Committee to depute three doctors from the fields of general medicine, cardiology, neurology, nephrology, psychiatry or oncology with experience in critical care and with overall standing in the medical profession of at least twenty years after consulting the competent medical practitioners. It shall also afford an opportunity to the State counsel. The High Court in such cases shall render its decision at the earliest since such matters cannot brook any delay. Needless to say, the High Court shall ascribe reasons specifically keeping in mind the principle of 'best interests of the patient'."

CONSENT-RELATED CHALLENGES[8]

- **Consent must be procedure specific:** A consent taken for a diagnostic procedure, cannot be considered as consent for a therapeutic procedure. Hence, a common consent for both diagnostic and ensuing therapeutic procedures can be taken where they are anticipated. Likewise, consent for a particular treatment procedure is not valid for any other procedure. If required, the other procedure can be done without consent only if it would be life-saving or waiting for the patient to regain consciousness and take a decision is not reasonable option.
- **Consent obtained during the course of surgery is invalid:** Dealing with the allegation of performing sterilisation without consent in the matter of Dr Janaki S Kumar and Anr versus Mrs. Sarafunnisa, the Kerala State Consumer Disputes Redressal Commission held that the patient could not comprehend the associated risks as she was under anesthesia. Hence, she could not have given a valid consent.
- **Consent for blood transfusion:** A written consent for blood transfusion must be taken where it is being contemplated. A consent is not required in emergency cases where blood transfusion may be life-saving.
- **Consent for examining or observing a patient for educational purpose:** Valid consent of the patients must be taken before examining them for the purpose of education.
- **Blanket consent is not valid:** Consent must be specific to the procedure being undertaken. An all-inclusive consent is not valid.

- **Fresh consent should be taken for a repeat procedure:** A fresh written informed consent must be obtained before any surgery including re-explorations.
- **Consent for surgery does not cover anesthesia care:** Informed consent for anesthesia must be taken only by the anesthetist. The consent must be recorded either alongside the surgical consent form or on a separate anesthesia consent form.
- **Patient can refuse treatment:** Competent patients with decision-making capacity have the right to refuse treatment, even in life-threatening emergency situations. Informed refusal must be obtained and documented in such situations.
- **Consent should be properly documented:** The informed consent taking procedure can be video-recorded; however, the patient must consent to this, which should be documented. The patient must sign the consent form.
- **Patient can withdraw his consent anytime:** If the patient withdraws his consent during a procedure, it must be stopped. The procedure should be stopped. The doctor may continue with the procedure after satisfying the apprehensions of the patient, if he agrees. But if discontinuing with the procedure may be potentially life-threatening, it may be continued "till such a risk no longer exists".

TELEMEDICINE GUIDELINES

The Government of India has issued Telemedicine Practice guidelines on 25th March, 2020 which provide a robust framework for practice of telemedicine[9].

These guidelines comprehensively prescribe norms and protocols covering all aspects of telemedicine practice like physician-patient relationship; issues of liability and negligence; management and treatment; informed consent; continuity of care; medical records; privacy and security of the patient records, exchange of information, etc.

The guidelines also provide detailed information on technology platforms and tools to be utilized for effective health care delivery (Press Information Bureau, Ministry of Health and Family Welfare, July 31, 2021).

"*Patient consent is necessary for any telemedicine consultation (3.4). The consent can be implied or explicit depending on the following situations[9]:*

- *If the patient initiates the telemedicine consultation, then the consent is implied (3.4.1).*
- *An explicit patient consent is needed if: A health worker, RMP or a Caregiver initiates a Telemedicine consultation (3.4.2).*
- *An Explicit consent can be recorded in any form. Patient can send an email, text or audio/video message. Patient can state his/her intent on phone/video to the RMP (e.g., "Yes, I consent to avail consultation via telemedicine" or any such communication in simple words). The RMP must record this in his patient records (3.4.3).*"

"*Prescribing medications, via telemedicine consultation is at the professional discretion of the doctor. It entails the same professional accountability as in the traditional in-person consult. If a medical condition requires a particular protocol to diagnose and prescribe as in a case of in-person consult then same prevailing principle will be applicable to a telemedicine consult. The doctor may prescribe medicines via telemedicine ONLY when he/she is satisfied that he/she has gathered adequate and relevant information about the patient's medical condition and prescribed medicines are in the best interest of the patient. Prescribing medicines without an appropriate diagnosis/provisional diagnosis will amount to a professional misconduct[9].*"

TELEMEDICINE: DOS AND DON'TS FOR DOCTORS[9,10]

- Patient identification is mandatory during the first consultation.
- Confirmation of patient's identity however is not mandatory during follow-up; this should be done only as per need.
- The identity of the caregiver and authorization should be verified.
- Doctors should themselves to the patient before proceeding with the teleconsultation.
- The registration number must be displayed on prescriptions, website, electronic communication (email or WhatsApp), including receipts.
- Doctor should not continue with teleconsultation if it not appropriate.
- Doctor should maintain patient records of tele-consultation.
- Patient's personal data should not be disclosed or transferred without written consent of the patient.
- Emergency teleconsultation should be restricted to first aid or immediate assistance.
- There is a limitation on prescribing medicines to patients via telemedicine.

REFERENCES

1. Aggarwal KK. Real consent and not informed consent applicable in India. Indian J Clin Pract. 2014;25(4):392-3.
2. Satyanarayana Rao KH. Informed consent: an ethical obligation or legal compulsion? J Cutan Aesthet Surg. 2008;1(1):33-5.
3. Raab EL. The parameters of informed consent. Trans Am Ophthalmol Soc. 2004;102:225-30; discussion 230-2.
4. Karlawish J. Assessment of decision-making capacity in adults. Available at: https://medilib.ir/uptodate/show/98592
5. Institute of Medicine (US) Committee on Crossing the Quality Chasm: Adaptation to Mental Health and Addictive Disorders. Improving the Quality of Health Care for Mental and Substance-Use Conditions: Quality Chasm Series. Washington (DC): National Academies Press (US); 2006. 3, Supporting Patients' Decision-Making Abilities and Preferences. Available from: https://www.ncbi.nlm.nih.gov/books/NBK19831/
6. Jones RC, et al. A guide to assessing decision-making capacity. Cleve Clin J Med. 2004;71(12):971-5.
7. Moye J, et al. Assessment of capacity to consent to treatment: challenges, the "ACCT" approach, future directions. Clin Gerontol. 2007;31(3):37-66.
8. Kumar A, et al. Consent and the Indian medical practitioner. Indian J Anaesth. 2015;59(11):695-700.
9. Telemedicine Practice Guidelines, 25 March 2020. Available at: https://www.mohfw.gov.in/pdf/Telemedicine.pdf
10. Shukla A, Updadhyay A. India's new Telemedicine Practice Guidelines - Analysis and Do's and Don'ts for Doctors offering teleconsultation. Available from: https://www.lexology.com/library/detail.aspx?g=a1d76ffa-1853-4c7a-84e8-f8ef37d44525

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Diabetic Distress and Glycemic Control in Type 2 Diabetes

Type 2 diabetes patients with high distress have high levels of glycated hemoglobin (HbA1c) indicating poor glycemic control. They also have a higher likelihood of diabetic neuropathy compared to those without distress. These findings from a recent study were published online March 6, 2024 in *Scientific Reports*[1]. This study included 1,862 participants from the Korean National Diabetes Program. They completed diabetic complication assessments and responded to the Korean version of the Problem Areas in Diabetes Survey (PAID-K), which is a validated tool used to assess emotional burden and distress associated with managing diabetes. A total PAID-K score of 40 or higher was considered indicative of high distress. Based on this, participants with score <40 were categorized as having low distress, while those with score ≥40 were classified as having high distress.

By analyzing the data collected, researchers aimed to investigate the association between diabetes distress levels, as measured by the PAID-K, and glycemic control and the presence or severity of diabetic complications. A total of 589 participants were found to have high distress levels. They had significantly higher levels of HbA1c (7.4%) compared to those without distress (7.1%). This difference was statistically significant at baseline and also throughout the 3-year follow-up period. The study also identified factors associated with high distress. These included younger age, female patients, long-standing diabetes and higher intake of carbohydrate. Participants experiencing high distress had a higher likelihood of developing neuropathy compared to those without distress. This association remained significant even after adjusting for potential confounding factors with an adjusted OR of 1.63. However, no significant associations were found between distress levels and other diabetes-related complications, such as retinopathy, nephropathy, and carotid artery plaque. To conclude, this analysis of data from the Korean National Diabetes Program highlights the significant association between high levels of diabetes distress and adverse outcomes in patients with type 2 diabetes. Specifically, it has shown that high diabetic distress was linked with poor glycemic control and increased odds of diabetic neuropathy. It has also identified factors associated with high distress. Persons with diabetic distress may struggle to manage their disease on a day-to-day basis. It is therefore essential to recognize and address the emotional burden associated with diabetes in addition to the traditionally used clinical parameters. Effective strategies to support patients experiencing high levels of diabetes distress may not only improve their psychological well-being but also lead to better glycemic control potentially reducing the risk of diabetic complications. Hence, clinicians managing patients with type 2 diabetes should routinely screen them for distress and offer appropriate interventions as part of standard diabetes care so that patients can better cope with their disease.

Reference

1. Park HS, et al. Impact of diabetes distress on glycemic control and diabetic complications in type 2 diabetes mellitus. Sci Rep. 2024;14(1):5568.

HCFI Dr KK Aggarwal Research Fund

Round Table Environment Expert Zoom Meeting on "Swachh Survekshan 2023 of Swachh Bharat Mission"

January 14, 2024 (Sunday, 12 noon-1 pm)

- The Hon'ble President of India conferred the 2023 Swachh Sarvekshan (cleanliness survey) Awards on 11th January. Indore and Surat were jointly awarded the top rank as the cleanest cities. For Indore, this was the seventh successive award.
- Navi Mumbai took the second place. Other cities in the top 10 included Visakhapatnam, Bhopal, Vijayawada, New Delhi (NDMC), Tirupati, Greater Hyderabad and Pune.
- The theme for the year 2023 was "waste to wealth". This encompasses various issues such as legacy waste dump site, management of plastic waste, implementation of principles of 3Rs (Reduce, Reuse, Recycle) and ensuring safety of Safai Mitras.
- The G20 Declaration has also committed to enhance environmentally sound waste management and substantially reduce waste generation by 2030 and highlight the importance of zero waste initiative.
- In the theme "waste to wealth", surplus waste management is followed and the circular economy process of recycling and reusing is proving helpful for sustainable development.
- Waste management rules have also changed towards circular economy with focus on extended producer responsibility.
- The theme for Swachh Sarvekshan 2024 is "Reduce, Reuse & Recycle".
- Steel slag has been used in Surat to build roads (all layers). This road has 30% more strength than other roads.
- India's first national highway steel slag road on NH-66 (Mumbai-Goa highway) was inaugurated on 13th January.
- Steel slag is also a waste product. It may do away with the need of using aggregates for road construction.
- While states have been ranked as clean, none of the cities in the state feature among the list of cleanest cities. Some cities have gone down in the ranking, while some improved their ranking.
- The Ministry of Housing and Urban Affairs (MOHUA) has classified cities into different categories based on their population.
- Source segregation is the responsibility of the waste generator. But preprocessing centers (secondary storage) should be available for collection of segregated waste.
- The most important parameter, which affects ranking is perception. Peoples' perception change if they see that all facilities are there.
- The second phase of the Swachh Bharat Mission emphasized on biomining and removal of garbage dumps across the city. But where will the city put the recovered material is not being assessed.
- The parameters for comparison need a review. Different brackets must be created for comparison. Old cities cannot be compared with new planned cities.
- Delhi has always ranked near the bottom despite good infrastructure. This year it has improved its ranking.
- Assessment should be done by technical experts.
- Infrastructure is not the only criterion to get ranking.
- The survey is done on 3 parameters: service level improvement (solid waste management, waste water management, legacy waste, construction and demolition waste management), certification (ODF, garbage-free city) and citizens' feedback.
- Availability and proper utilization of funds is important. Political will is very important.
- There should be some mechanism to address the carrying capacity system of cities. Implementation will not help, unless this is done. If it goes beyond the unmanageable, it becomes impossible to manage.
- NIMBY (Not In My Back Yard) syndrome often impedes development of infrastructure in local areas.
- Unless there is public participation with source segregation and 3Rs, waste cannot be managed efficiently. This may hamper achievement of high rank in the survey list.

- Several factors influence ranking such as cleaning of roads and collection of waste every day. The city should have good drainage with no water logging.
- There should be designated spaces in the city for parking of public transport vehicles. Management of hawkers is very important.
- Vehicles parked on roads prevent proper road cleaning.
- Cities should have proper plantation on road sides or other green areas. This will improve air quality.
- The public toilets should be clean and hygienic.
- In addition, traffic should be managed with the help of traffic policemen in place of depending on traffic lights, especially on all crossroads or bottleneck areas. Noise reduction in cities is very important.
- These parameters are very important from the citizens' point of view.

Participants: Dr Anil Kumar, Dr SK Gupta, Dr M Dwarakanath, Dr Ravindra Kumar, Mr Pradeep Khandelwal, Mr Sanjiv Kumar

Minutes of an International Weekly Meeting on "Extracorporeal Shock Wave Therapy: Kidney Stones and Beyond"

Speaker: Dr Satyajeet P Pattnaik, *MBBS, MS (Gen Surgery), DNB (Gen Surgery), MCh (Urology), FMAS. Consultant Urologist, Andrologist, Sexologist and Transplant Surgeon, SS. Urological Institute and Dr Pattnaik's Hitech Urology Hospital, Mumbai, Maharashtra, India*

March 23, 2024 (Saturday, 9.30-10.30 am)

- Electromagnetic waves originated 150 years ago when James Clerk Maxwell, an English scientist, developed a scientific theory to explain the electromagnetic waves.
- Electromagnetic waves are propagated by simultaneous periodic variations of electric and magnetic intensity.
- Shock waves are propagative and concentric waves, which are targeted towards a focal point, which is the kidney stone and not the kidney.
- Shock waves are acoustic waves, which carry high energy, which is useful in regeneration and reparative processes of the bones, tendons, and other soft tissues.
- The lithotripter was first used in Germany. Its use in India began in the 1980s. The water bath system was used from 1984 to 1986, where the patient was immersed in a water bath. The kidney stones were localized with the help of X-rays.
- Extracorporeal shock wave lithotripsy (ESWL) is a noninvasive procedure. The waves are focused on the kidney stones, which are fragmented into dust-like particles, which are expulsed in urine.
- There are some misconceptions about shockwaves. ESWL damages renal parenchyma, ESWL cannot be used for too big, too small, too hard, or too soft stones. ESWL can be used only for kidney stones.
- There is lack of awareness about other uses of shockwaves.
- A urologist should always be in-charge of the machine. No technician should deliver the treatment.
- ESWL is a daycare procedure. There is a bias towards retrograde intrarenal surgery and percutaneous nephrolithotomy as they are more expensive treatments.
- ESWL is a daycare procedure. It is completely noninvasive, requires no anesthesia (occasionally only sedation), USG-guided procedure. Pelvi-ureteric junction stones, ureter stones, urinary bladder stones, vesicoureteric calculi can be treated with shockwaves.
- In chronic calcific pancreatitis, pancreatic calculi, biliary calculi, ESWL can be given pre-/post-ERCP (endoscopic retrograde cholangiopancreatography) + stenting.
- Most lithotripters used nowadays are piezoelectric lithotripters.
- Every fragment when measured with USG should be <3 mm for successful passage.
- Shockwaves have been used for the treatment of erectile dysfunction, chronic prostatitis, pelvic floor therapy in women suffering from urinary incontinence, hypocontractile bladder, tendonitis, plantar fasciitis, sports medicine. Low intensity shock waves have been used for single vessel coronary artery disease.
- Low intensity shock wave cause shear stress on blood vessels. The intra- and extracellular responses stimulate endothelial nitric oxide synthase, which causes release of vascular endothelial cell growth factor and production of proliferating cell nuclear antigen, thereby promoting neovascularization. The vessel condition and diameter improve as the atherosclerotic plaques are removed.

- In diabetic foot ulcers, shock wave therapy (SWT) helps save the foot from amputation. It targets the vessel block and the peripheral vascular disease using CT angio and color Doppler. SWT at various points unblocks the blood vessels resulting in improved blood flow and neoangiogenesis.
- SWT is a novel treatment for lateral epicondylitis. Its effectiveness has been demonstrated in cases refractory to other nonsurgical therapeutic procedures.
- Application of shock waves to trigger points is a new therapy for the treatment of temporomandibular joint disorder. Initially 2 to 3 sessions are given. If no response then Botox is given in masseter and temporalis and both pterygoids followed by SWT sessions again. The recovery is painless.
- Although there is no documented evidence, SWT definitely helps in skin tightening.
- Acoustic wave therapy for cellulite, body shaping and fat reduction is also possible with SWT.
- There is a need for a dedicated SWT department with multidisciplinary approach. Specialists like urologists/andrologists, sports medicine specialists, physiotherapists, gynecologists, orthopedic surgeons, hepatobiliary surgeons, all come together to treat the patient.
- SWT has been used in limb venous stasis along with graduated pressure stockings. SWT tightens the fascia and improves venous return. This requires real-time monitoring.

Participants – Member National Medical Associations: Dr Yeh Woei Chong, Singapore, Chair of Council-CMAAO; Dr Angelique Coetzee, South Africa; Dr Akhtar Hussain, South Africa; Dr Benito Atienza, Philippines; Dr MuktiShreshtha, Nepal

Invitees: Dr Monica Vasudev, USA; Dr P Lata Anand; Dr B Kapoor; Dr Amar Singh Choudhary; Dr S Sharma, Editor-IJCP Group

Moderator: Mr Saurabh Aggarwal

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Early Puberty Increase in India: ICMR's Nationwide Study

The National Institute for Research in Reproductive and Child Health (NIRRCH) in Mumbai, under the Indian Council of Medical Research (ICMR), is planning the first national-level survey to assess the degree of prevalence of precocious puberty in India.

This is particularly concerning after the COVID-19 pandemic, as the condition is more likely to be detected in girls due to the appearance of secondary sex characteristics such as breasts, public hair, and the onset of menstruation. In boys, the condition can be characterized by enlarged testicles and penis, deepening of the voice, and facial hair, mainly on the upper lip.

Puberty, the adolescent stage of sexual maturity, typically occurs between ages eight and 13. However, factors like obesity, lack of sleep, stress, anxiety, and hormone-disrupting chemicals can lead to early puberty. This can cause premature bone maturation, shorter adult height, and emotional and psychological challenges like low self-esteem and anxiety.

A 2017 study in Kerala found a 10.4% prevalence of precocious puberty among 11- to 15-year-old girls, which was considered high by experts, highlighting the limited empirical evidence on this topic.

The global prevalence of precocious puberty was one in 4,000 kids in 2020, but clinicians report a rise in cases, primarily of the first type. Precocious puberty can be categorized into central or gonadotropin-dependent precocious puberty, where the brain releases hormones too early, and peripheral precocious puberty or gonadotropin-independent precocious puberty, where sex organs trigger the condition.

ICMR scientists explain that early puberty cases are incomplete precocious, with secondary sex characteristics not progressing to full puberty. The current diagnostic test lacks a recognized GnRH cut-off range, aiming to provide a precise reference range for better patient treatment.

(*Source: https://theprint.in/health/rate-of-early-puberty-rising-in-india-icmr-plans-nationwide-project-to-find-answers/2011194/*)

31st Annual Scientific Meeting of Indian National Association for Study of the Liver (INASL 2023)

BIOMARKER STRATEGIES FOR SIGNIFICANT AND ADVANCED LIVER DISEASE AT THE PRIMARY AND SECONDARY HEALTH CARE LEVELS

Dr Quetin Anstee, UK

Metabolic dysfunction-associated steatotic liver disease (MASLD), is a chronic, asymptomatic, progressive condition affecting about 38% of the global population. It is characterized by substantial interpatient variability in disease severity and outcomes. MASLD is caused by a build-up of fat in the liver and includes a range of disease states, from isolated lipid accumulation or steatosis (metabolic dysfunction-associated steatotic liver, MASL) to its active inflammatory form, metabolic dysfunction-associated steatohepatitis (MASH).

Some points should be noted while setting the goal for diagnostic tests for advanced liver disease at the primary and secondary health care levels, such as:

- In primary care, there is a low prevalence of advanced (F3-4) diseases. So, severe cases should be excluded.
- On the other hand, the prevalence of advanced disease is increasing in secondary care.
- Hence, it is important to identify patients with ≥F2 for therapy and monitoring.
- Patients with F(3)4 should be identified for intensive therapy and surveillance.

Diagnosis and identification of the patients at different stages of the disease can be done with the help of biomarkers, which can be categorized into two groups, i.e., indirect and direct serum biomarkers and imaging biomarkers.

For example, in the enhanced liver fibrosis (ELF) test in MASLD, three direct markers of fibrosis are combined, such as procollagen III N-terminal peptide, hyaluronic acid and tissue inhibitor of metaproteinase 1 (TIMP1). Some other key biomarker strategies that can help in diagnosing are:

- At present, the staged application of available 'simple panel' biomarkers, such as NFS, and FIB-4 followed by noninvasive tests, such as fibroscan, ELF and MR elastography helps to rule out cases that are unlikely to have significant disease.
- The biomarker field is developing rapidly, therefore, the objective assessment of biomarker performance for specific predefined context of use is important to understand their utility. There is an urgent need for more sensitive and specific, independently validated, and qualified biomarkers for use in MAFLD.
- Promising experimental biomarkers, include direct biomarkers related to extracellular matrix turnover, metabolomic profiling and miRNAs. However, they all require further validation.

HCC STAGING: WHAT IS NEW IN INASL GUIDELINES (2023)

Dr Subrat K Acharya, Bhubaneswar

INASL modification provides improvement over the previous Barcelona-Clinic Liver Cancer (BCLC) staging in terms of:

- ALBI (Albumin-Bilirubin) score: It is the further clinical assessment of liver reserve which had documented to influence outcome (prognostication to therapy)—transarterial radioembolization (TARE) for BCLC-A (option) - single lesion >5 cm.
- Categorizing BCLC-B: into three groups (B1, B2, B3) based on results of therapeutic response- included expanded criteria for transplant in B1 (more burden than A).
- Defined treatment stage migration and UTP: to allocate further treatment with a possibility of further benefit.
- Down staging in BCLC-B an option: end point successful - Transplant.
- Systemic therapy: for BCLC B3/ALL BCLC-C - 1st line/2nd line/3rd line.

MANAGEMENT OF LEAN PATIENTS WITH NAFLD (MASLD)

Dr Arka De, Chandigarh

- Lean nonalcoholic fatty liver disease (NAFLD) can progress to clinically significant liver disease without becoming obese.

- Lean NAFLD patients have an improper lifestyle with more sedentary hours and higher dietary intake of free sugars and fructose. Exercise improves insulin resistance in these patients. A healthy diet with curtailed free sugars is advised. It is difficult to recommend specific calorie restrictions in this group due to the scarcity of data.
- Weight loss is the central pillar of NAFLD management in general, however, lean patients have normal body mass index (BMI). They need a lesser degree of weight loss to attain NAFLD remission compared to obese patients.
- Indications for pharmacotherapy in lean NAFLD (MASLD) is likely similar to non-lean ones. Drugs like vitamin E, pioglitazone and saroglitazar can be used.

OUTCOMES AND FOLLOW-UP AFTER HEPATITIS C ERADICATION WITH DAAs

Dr Fransesco Paolo Russo, Italy

EASL Guidelines advise hepatitis C virus (HCV) RNA in PW1bs or men who have sex with men with ongoing risk behavior (A1). Current direct-acting antivirals (DAAs)-based regimens are highly effective and safe. Early treatment halt the progression to cirrhosis and allow for a decrease in health care costs. HCV eradication can prevent the complications of liver cirrhosis and extrahepatic manifestations. Noninvasive tests can predict the onset of complications. Ideal follow-up after sustained virologic response in patients with advanced liver disease and cirrhosis is still debated.

RIFAXIMIN ALONE VS. COMBINATION WITH NORFLOXACIN FOR SECONDARY PROPHYLAXIS OF SPONTANEOUS BACTERIAL PERITONITIS WITH HEPATIC ENCEPHALOPATHY: RANDOMIZED CONTROLLED TRIAL

Dr Tarana Gupta, Rohtak

Gut dysbiosis is the emerging concept that has been linked with complications of cirrhosis, such as spontaneous bacterial peritonitis (SBP) and hepatic encephalopathy (HE). These events portend a poor prognosis for the patients.

Several studies have shown that rifaximin can reduce the oralisation of the gut microbiome and mucin degradation species in the gut. This helps in improving the gut microenvironment by reducing systemic inflammation caused by neutrophils and downregulation of TLR4 expression. On the other hand, due to the emergence of multidrug-resistant organism (MDRO), gut-selective antibiotics with minimal systemic effects are needed.

Therefore, in this study, the effect of rifaximin vs. a combination of rifaximin with norfloxacin for secondary prophylaxis of patients of cirrhosis presenting with SBP and HE was evaluated. The primary outcomes of the study included recurrent episodes of SBP and HE at 6-month and 28-day, 90-day and 6-month mortality. Secondary outcomes included the number of rehospitalizations, new episodes of upper gastrointestinal (UGI) bleed, acute kidney injury and child-turcotte-pugh (CTP) and model for end-stage liver disease (MELD) over 6 months.

The key results and conclusion drawn from this study were: The mortality rates at 28 days, 90 days, and 6 months were comparable between the two groups. Rehospitalization was higher in the combination group. Patients of cirrhosis with SBP and HE have a high in-hospital mortality rate of up to 40%. Both the groups showed no significant difference in the recurrence rate of SBP and HE. Rifaximin has similar efficacy as a combination of rifaximin and norfloxacin for secondary prophylaxis of patients with SBP and HE.

PATIENTS WITH ACLF SHOULD RECEIVE PRIORITY ON THE LIVER TRANSPLANT WAITING LIST

Dr Sanjiv Saigal, New Delhi

There is a lack of specific drug for a comprehensive medical treatment for acute-on-chronic liver failure (ACLF). Moreover, the novel treatment options are in premature stage. There is no cure for ACLF on the background of high short-term mortality, making liver transplantation (LT) desirable in this group. Balance between the dynamics of ACLF and the allocation of the organs has not been found in the actual clinical practice. Timely evaluation and admission to the LT waiting list and prioritization of patients with ACLF within the narrow window of opportunity improves outcome and reduces futility. Careful selection of patients and timely LT saves precious life. Hence, ACLF patients should receive priority on LT wait list.

DIGITAL HEALTH INTERVENTIONS IN THE MANAGEMENT OF MASLD

Prof Jeffrey V Lazarus, Spain

Globally, the use of digital health interventions (DHIs) is expanding, along with growing scientific evidence of their effectiveness to help in caring for people with or at risk of liver diseases, such as metabolic dysfunction-associated liver disease and MASH. However, this

shift in caregiving is not uniform among all health care providers.

For instance, a survey showed that despite a high level of familiarity with DHIs among physicians, most of them do not recommend these tools for patient care management. In the survey, it was seen that out of 295 participant physicians, 56% of physicians never recommend DHIs to their patients. It was also seen that although, 91% of the physicians understood the functioning of DHIs, only 25% of them received DHI education/training. Additionally, 51% of the participant commented that they will recommend DHIs to their patients if they have evidence of their utility.

When we look at artificial intelligence (AI), it has several applications in MASLD, or liver disease in general, such as: Potential to augment the exploitation of massive multiple parametric data; Creating models that enable machines to learn from data, recognize patterns, make decisions and solve complex problems; Enhance accuracy compared to traditional methods; Personalized clinical decisions for patients; Streamline patient care.

However, there are some challenges in applying AI, such as: Need for good quality datasets for algorithm development; Data availability: address the need for large and diverse datasets for training reliable AI models; A flawed algorithm can cause harm. Hence, systemic amendments, extensive simulation and validation are required; Need for randomized controlled trials to compare AI-based approaches with non-AI-based approaches.

NONINVASIVE TESTS FOR HEPATIC FIBROSIS (NITS)

Dr Meena B Bansal, New York

- For screening high risk-populations FIB-1 is the First-line of Defense. Sequential or combination testing can be done to address the Grey Zone.
- For identification of at-risk NASH, use the FibroScan-AST (FAST), MRI-aspartate aminotransferase (MAST), MR elastography combined with FIB-4 (MEFIB) or Agile 3t (F3 fibrosis).
- To assess response to Resmetirom - check for a 30% reduction in MRI proton density fat fraction (MRI-PDFF), Pro-C3/C3M ratio and vibration-controlled transient elastography (VCTE). For evaluating progression to cirrhosis check for VCTE >16.6 kPa, ELF >9.75.
- For predicting MALO check if ELF >11.27, VCTE >30.7 kPa, cT1 >875 ms, MAST >0.24, ME-FIB + (MRE ≥3.3 and FIB-4 ≥1.6). Longitudinal changes over time are more important than a single cross-sectional view. Use FIB-4, VCTE and MR elastography.

DIAGNOSTIC AND PROGNOSTIC ROLE OF BIOMARKERS IN PATIENTS WITH CIRRHOSIS AND AKI

Dr Paolo Angeli, Italy

Patients with cirrhosis have a high prevalence of renal dysfunction. The susceptibility to renal dysfunction is due to both the severe splanchnic arterial vasodilation and the systemic inflammation observed in these patients. An accurate assessment of renal function is recommended in all patients with cirrhosis.

Meanwhile, despite its limitations, serum creatinine is still the most used biomarker for the estimation of glomerular filtration rate (GFR) and the assessment of acute kidney injury (AKI) in patients with cirrhosis. New renal biomarkers such as cystatin C, neutrophil gelatinase-associated lipocalin (NGAL), IL-18, TIMP-2, etc. can improve the assessment of GFR and the prognostic stratification in these patients.

AKI is a life-threatening complication and needs timely management. AKI can be further categorized into four types in patients with cirrhosis and ascites, including: Acute tubular necrosis (ATN-AKI) - 41.7%.; Prerenal failure (Prerenal-AKI) - 38%; Hepatorenal syndrome (HRS-AKI) - 20%; Post-renal failure (Post-renal AKI) - 0.3%.

The differential diagnosis between HRS and ATN is tricky in clinical practice. The nature of HRS can be predominantly functional or associated with some degree of parenchymal damage in a continuum spectrum of kidney injury from prerenal-AKI to ATN-AKI. New biomarkers of kidney injury, such as neutrophil gelatinase-associated lipocalin and IL-18, represent useful tools in refining the discrimination between HRS and ATN.

A study has shown that the sensitivity and specificity of IL-18 and NGAL for the diagnosis of ATN were 0.8, 0.86 and 0.88, 0.82, respectively.

Due to its higher sensitivity, NGAL is seen as a promising tool in phenotyping AKI and predicting its evolution in patients with cirrhosis.

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News and Views

Another Feather in the Cap: Semaglutide may Soon be the First GLP-1 Treatment for Type 2 Diabetes Patients with CKD

Semaglutide reduced the progression of kidney disease, major adverse cardiovascular events (MACE) and kidney-related mortality in patients with type 2 diabetes patients with chronic kidney disease (CKD), according to topline results from the FLOW trial[1].

The trial met the primary composite end point by showing a significant and superior reduction in kidney disease progression, cardiovascular and kidney-related mortality by 24% in patients treated with once-weekly injectable semaglutide 1.0 mg compared to placebo. However, only the top line results have been released for now. The complete data is expected to be shared later this year.

The trial was halted early in October 2023 on the recommendation of the trials independent data monitoring committee last October after the results of an interim analysis showed superior efficacy[2].

The double-blind international superiority trial was launched in 2019 with the objective to compare injectable semaglutide 1.0 mg with placebo along with standard treatment for prevention of progression of kidney dysfunction and risk of death due to kidney and cardiovascular disease (CVD) in 3,533 patients with type 2 diabetes and CKD.

The primary end point consisted of five components assessing CKD progression and the risk of kidney and cardiovascular mortality, with both CKD and cardiovascular factors contributing to the risk reduction. These included: onset of persistent ≥50% reduction in estimated glomerular filtration rate (eGFR) according to the CKD-EPI3 equation compared with baseline, onset of persistent eGFR (CKD-EPI) <15 mL/min/1.73 m^2, initiation of chronic kidney replacement therapy (dialysis or kidney transplantation), death from kidney disease or death from CVD.

The secondary end points were yearly rate of change in eGFR1 (CKD-EPI), MACE (nonfatal myocardial infarction, nonfatal stroke, cardiovascular death) and all-cause mortality. CKD is a common complication of type 2 diabetes and according to the Centers for Disease Control and Prevention (CDC) 1 in 3 adults with diabetes have CKD. These encouraging results therefore come as a glimmer of hope for these patients. Martin Holst Lange, Executive Vice President Novo Nordisk said, in a press release, "*… the positive results from FLOW demonstrate the potential for semaglutide to become the first GLP-1 treatment option for people living with type 2 diabetes and chronic kidney disease*."

Semaglutide is currently FDA approved for the treatment of type 2 diabetes and obesity.

References

1. https://www.novonordisk.com/content/nncorp/global/en/news-and-media/news-and-ir-materials/news-details.html?id=167028. Published March 5, 2024. Accessed March 7, 2024.
2. Gragnano F, et al. FLOW trial stopped early due to evidence of renal protection with semaglutide. Eur Heart J Cardiovasc Pharmacother. 2024;10(1):7-9.

No One Solution Works for All: Patient Selection for Renal Denervation to Treat Hypertension

Hypertension is usually managed through a combination of lifestyle changes and antihypertensive medications. But these are often wrought with challenges such as nonadherence to the prescribed treatment plan, side effects of medications, complex treatment regimens, comorbidities and cost of treatment, which hamper effective management of hypertension. Interventional approaches for treating hypertension are indeed emerging as potential options for patients who are struggling to control their blood pressure (BP) with lifestyle modifications and/or pharmacotherapy. These include renal denervation, baroreflex activation and cardiac neuromodulation.

Renal denervation has been shown to be a safe and effective method for treating hypertension, with BP-lowering effects comparable to antihypertensive medications. But does it work for all patients? The answer is no because no one solution works for all patients. Since it is an emerging therapeutic option, the specific populations that are most likely to benefit from renal sympathetic denervation (RDN) are still being defined.

In an article published in the journal *Blood Pressure*, Melvin Lobo and coauthors discuss the selection criteria of patients for renal denervation[1]. They note that the decision between using radiofrequency energy RDN or ultrasound RDN, depends on the preference of the operator conducting the procedure.

RDN has shown efficacy in a wide range of patients, including those who are unmedicated and those with more severe or resistant hypertension, who are at highest risk of cardiovascular events. Its role in isolated systolic hypertension is indeterminate with sham-controlled trials like the SPYRAL HTN-OFF MED Pivotal, RADIANCE-HTN SOLO, and RADIANCE-HTN TRIO excluding this patient group and Global SYMPLICITY Registry and the RADIOSOUND trial showing similar efficacy in patients with and without isolated systolic hypertension[2].

RDN is contraindicated in certain groups of patients. Notably secondary hypertension. Currently, there is no evidence supporting the use of RDN in patients with secondary forms of hypertension. Therefore, it is crucial to evaluate and rule out secondary causes before considering RDN as a treatment option. Other contraindications include impaired kidney function (eGFR <40 mL/min), renovascular disease, structural renal abnormalities, small renal arteries (diameter <3 mm), primary aldosteronism, valvular heart disease and pregnancy. Presently, there is insufficient data to recommend use of RDN in obstructive sleep apnea (OSA) patients.

It is essential to first confirm the diagnosis of hypertension before considering more invasive procedures like RDN as a treatment option, not just through office BP measurement, but also by ambulatory BP monitoring (ABPM) and standardized home BP monitoring. While RDN has demonstrated efficacy in lowering BP in individuals with established hypertension, its safety and efficacy in masked hypertension or white coat hypertension have not been conclusively established. ABPM can diagnose both masked hypertension and white coat hypertension.

It is also essential to first fully optimize lifestyle modification and drug therapy to boost BP control before they are selected for RDN. Here, single pill combinations, wherever possible, can play a role in improving patient adherence to treatment.

Sounding a note of caution, the authors say that uncontrolled hypertension during the workup for interventional therapy such as RDN, puts the patients at significant risks of cardiovascular events and death. Initiating antihypertensive medications or intensifying therapy during the assessment period must not be delayed to mitigate these risks.

To conclude, RDN is a multidisciplinary care pathway with hypertension specialists, interventionists and imaging specialists who have been trained in the procedure. Since shared decision-making, with the patient as an equal partner, is now central to patient care, they should be adequately informed about the potential benefits, risks and alternatives to RDN. This patient-centered approach ensures that individual preferences and values are taken into consideration, leading to more personalized and effective care. RDN should be offered to those who opt for the procedure provided it is the "most pragmatic route" to achieve control of their hypertension.

References

1. Lobo MD, et al. Selecting patients for interventional procedures to treat hypertension. Blood Press. 2023;32(1):2248276.
2. Barbato E, et al. Renal denervation in the management of hypertension in adults. A clinical consensus statement of the ESC Council on Hypertension and the European Association of Percutaneous Cardiovascular Interventions (EAPCI). Eur Heart J. 2023;44(15):1313-30.

Impact of Microplastics on Cardiovascular Health

Carotid artery disease patients found to have microplastics or nanoplastics (MNPs) in the atheromatous plaques were more than fourfold likely to experience a heart attack, stroke or death due to any cause over the next 3 years compared to those without MNPs, suggests a new study published March 7, 2024 in the *New England Journal of Medicine*[1].

For this prospective, observational study, researchers enrolled patients who were undergoing carotid endarterectomy for asymptomatic carotid artery disease and who were enrolled in the North American Symptomatic Carotid Endarterectomy Trial (NASCET). Their average age was 72 years and one-quarter of them were female. Over 50% of the participants were hypertensive, 33% had CVD and almost all were taking statins and antiplatelet drugs.

By analyzing the excised carotid plaque specimens for the presence of MNPs using sophisticated techniques such as pyrolysis-gas chromatography-mass spectrometry, stable isotope analysis, and electron microscopy as well as assessing inflammatory biomarkers with enzyme-linked immunosorbent assay and immunohistochemical assay, they aimed to understand the potential impact of MNPs on cardiovascular health. The primary end point, a composite of myocardial infarction, stroke or mortality, was compared between patients with and without evidence of MNPs in plaque.

A total of 304 patients with carotid artery disease were enrolled in the study; of these, 257 completed a mean

follow-up period of 33.7 months. Polyethylene, a plastic used in packaging such as plastic bags, plastic wraps, etc., was detected in the excised carotid artery plaque of 150 patients (58.4%). The average level of polyethylene detected was 21.7 μg/mg of plaque. In addition to polyethylene, measurable amounts of polyvinyl chloride (PVC) were detected in 31 patients (12.1%), with an average level of 5.2 μg/mg of plaque.

Electron microscopy revealed the presence of "visible, jagged-edged foreign particles among plaque macrophages and scattered in the external debris" in the carotid artery plaque, along with radiographic evidence of chlorine-containing particles, suggesting the presence of microplastics in the carotid artery plaque. Radiographic examination revealed that some of these particles included chlorine, which is commonly used to disinfect swimming pool water and is also present in household cleaning products.

At 33.7 months, 7.5% of patients without MNPs met the composite primary end point of nonfatal myocardial infarction, nonfatal stroke, or death from any cause compared to 20% of those with MNPs.

After adjusting for age, sex, body mass index, cholesterol, comorbidities, and prior cardiovascular events, in multivariable analysis, patients with detectable MNPs within the atheroma were found to be at a significantly higher risk for experiencing a primary end-point event compared to those without these substances, with a hazard ratio (HR) of 4.53.

Microplastics and nanoplastics are minute plastic particles that are ubiquitous in the environment. They can enter the body either through the skin, inhalation or ingestion. It is speculated that MNPs trigger inflammation, oxidative stress, cytotoxicity in the body affecting various systems including the heart[2].

This study highlights the association between MNPs within the carotid artery plaque and the elevated risk of adverse cardiovascular events. Since this association was noted over a period of 34 months, it is suggestive of the long-term effects of microplastics on cardiovascular health. This was an observational study and so does not prove cause and effect; yet, these are critical and decisive observations, which add to the fast emerging evidence of the environmental impact on human health. Further research is required to corroborate these findings and conclusively establish their causative role.

Encourage patients to reduce their use of single-use plastics to reduce exposure to microplastics. This is also how doctors can contribute to a healthier environment.

References

1. Marfella R, et al. Microplastics and nanoplastics in atheromas and cardiovascular events. N Engl J Med. 2024;390(10):900-10.
2. Sangkham S, et al. A review on microplastics and nanoplastics in the environment: Their occurrence, exposure routes, toxic studies, and potential effects on human health. Mar Pollut Bull. 2022 Aug:181:113832.

Hepatic Steatosis and CKD risk

Individuals with metabolic dysfunction-associated fatty liver disease (MAFLD) and metabolic dysfunction-associated steatotic liver disease (MASLD) with more severe hepatic steatosis, are at a higher risk of developing CKD compared to those with mild or moderate hepatic steatosis. And even after remission of MAFLD/MASLD, those who had prior moderate to severe hepatic steatosis still were at a higher risk of CKD than those with mild steatosis. These findings were published March 5, 2024 in the *Journal of the American Heart Association*[1].

This study aimed to explore the relationship between hepatic steatosis, specifically in the context of MAFLD/MASLD and occurrence of CKD in the Chinese population. A total of 79,540 participants from the Kailuan cohort were included in the study. Hepatic steatosis was identified using ultrasound and the combination of hepatic steatosis with metabolic dysfunction was defined as MAFLD/MASLD. In addition, MASLD specifically excluded alcohol or other causes of liver disease. CKD was defined based on criteria such as an eGFR <60 mL/min/1.73 m^2 or positive proteinuria (≥1+).

After a median follow-up of 12.9 years, CKD occurred in 20,465 participants. After adjusting for potential confounders, there was an association between MAFLD and MASLD with CKD. The risk of CKD was higher in individuals with MAFLD and MASLD compared to those without these conditions. The HR for CKD among those with MAFLD was 1.12. The risk of CKD increased with increasing severity of hepatic steatosis. Similarly, consistent findings were observed when MASLD was used as the exposure.

Compared with persistent non-MAFLD, there was no statistical difference found in the risk of CKD in MAFLD remission (HR 1.04). However, MASLD remission still had a higher risk of CKD compared with persistent non-MASLD (HR 1.15). On subgroup analysis, based on the prior severity of hepatic steatosis, participants with mild MAFLD or MASLD who achieved remission did not show a statistically significant difference in the risk of CKD compared to those without MAFLD/MASLD. However, those with moderate/severe MAFLD/MASLD

who achieved remission still had a higher risk of CKD. These results suggest a potential link between liver diseases and the development of CKD in due course of time. The severity of hepatic steatosis may play a role in the association between liver diseases and CKD risk even after achieving remission.

The findings emphasize the importance of monitoring the risk of CKD in patients with MAFLD/MASLD. It suggests that more frequent CKD screening and early interventions may be necessary in individuals with hepatic steatosis, particularly those with moderate to severe hepatic steatosis.

Reference

1. Gao J, et al. Severity and remission of metabolic dysfunction-associated fatty/steatotic liver disease with chronic kidney disease occurrence. J Am Heart Assoc. 2024;13(5):e032604.

Impact of Induction Timing on Maternal and Neonatal Outcomes

About half of the women with prelabor rupture of membrane (PROM) experience spontaneous labor following induction of labor at 24 hours compared to 12 hours. But they were at higher risk of chorioamnionitis, suggests a retrospective study published in the *American Journal of Obstetrics & Gynecology*[1].

This study was conducted at a single tertiary center between 2020 and 2023 to investigate the maternal and neonatal morbidity outcomes between induction of labor at 12 hours in 802 women versus 24 hours in 962 women following PROM. Women presenting with complications necessitating immediate delivery and multiple pregnancies were excluded from the study group. The study protocol was updated on July 1, 2021 to extend the conservative management duration by administering oxytocin after 24 hours instead of 12 hours post-PROM. The rate of chorioamnionitis was compared between two induction protocols for women at term with PROM and who did not show signs of active labor upon admission.

Several differences were observed between the two groups. Half of the women (50.4%) in the 24-hour protocol group experienced spontaneous labor compared to the 12-hour protocol group (41.5%). They also had a higher rate of chorioamnionitis (7.5% vs. 4.7%). Cesarean deliveries occurred at similar rates between the two groups (16.3% vs. 17%).

A higher percentage of neonates born after the 24-hour protocol required intensive care with neonatal intensive care unit admission rate of 6.2% versus 3.6% in the 12-hour protocol group. They also required more antibiotics 5.7% vs. 2.9%) and also experienced respiratory distress (4.2% vs. 1.0%).

In the study, it was observed that among women with a previous vaginal delivery, the rate of inductions was lower following the 24-hour protocol compared to the 12-hour protocol (46.5% vs. 57.3%). However, maternal and neonatal outcomes were found to be similar between the two groups. On the other hand, among women with a previous cesarean delivery, the rates were lower following the 24-hour protocol compared to the 12-hour protocol, for oxytocin use (20.3% vs. 43.2%) and cesarean delivery (28.9% vs. 48.6%).

These findings suggest potential differences in induction practices and maternal and neonatal outcomes based on previous delivery history. These have potential implications for the management of term PROM. Hence, "shared decision-making" is crucial in the management of term PROM, state the authors. Women should be informed about the lower chance for induction and the higher risk of chorioamnionitis associated with the 24-hour induction protocol. They further suggest that parous women and those with a history of previous cesarean delivery may benefit from longer expectant management. Hence, past delivery history must be taken into consideration when making management decisions for term PROM.

Reference

1. Shqara RA, et al. 97. Induction of labor at 12 vs. 24-hours for prelabor rupture of membranes: a retrospective study. Am J Obstet Gynecol. 2024;230(1 Suppl):S71.

Not Just Sugar, Also Avoid High Salt Intake to Ward Off Risk of Type 2 Diabetes

Individuals who consume a proinflammatory diet containing processed foods, sugary drinks, refined carbohydrates, and unhealthy fats are at an 18% higher risk of developing type 2 diabetes compared to those who ate an anti-inflammatory diet. Those who habitually add salt to their food are also at a higher risk of type 2 diabetes, according to a study reported in the journal *Diabetes, Obesity and Metabolism*[1].

This study was conducted to investigate the relationship between a proinflammatory diet, routine salt intake, and incidence of new-onset type 2 diabetes among 1,71,094 participants from the UK Biobank. None of the study subjects had diabetes at the start of the study. They completed at least one 24-hour dietary questionnaire for the study. The Energy-adjusted Diet Inflammatory Index (E-DII) was calculated on the basis of 28 food parameters, while habitual salt intake was established

by self-reported frequency of adding salt to foods. The incidence of type 2 diabetes was tracked through linked medical records.

During the 13.5-year median follow-up period, 6216 participants were diagnosed with type 2 diabetes. Those with a high E-DII, indicating a proinflammatory diet, were at an 18% higher risk of developing type 2 diabetes compared to those with a low E-DII representing an anti-inflammatory diet. The relationship between E-DII and type 2 diabetes appeared to be linear after adjusting for major confounders. Interestingly, participants with a proinflammatory diet who also consistently added salt to their foods had the highest risk of type 2 diabetes incidence, with a HR of 1.60.

Anti-inflammatory diet includes plenty of fats and vegetables, whole grains, and healthy fats (omega-3 fatty acids). The association of high habitual salt intake with hypertension and kidney disease is well-established. To reduce these risks, it is important to monitor the daily salt intake and aim to consume no more than the World Health Organization (WHO) recommended daily limit <2,000 mg/day of sodium equivalent to <5 g/day salt, which is just under a teaspoon for most adults. Choosing fresh, whole foods over processed and packaged foods will help reduce intake of salt.

This study has emphasized the importance of promoting an anti-inflammatory diet and reducing salt intake as part of public health efforts to prevent onset of type 2 diabetes. By making healthier dietary choices, limiting intake of processed foods and reducing salt consumption, individuals may lower their risk of developing this chronic condition.

Reference

1. Shen W, et al. Associations of a proinflammatory diet, habitual salt intake, and the onset of type 2 diabetes: a prospective cohort study from the UK Biobank. Diabetes Obes Metab. 2024 Feb 26.

Greater Pre-eclampsia Risk Linked to Higher Preterm Spontaneous Birth Risk

Women at high risk of pre-eclampsia in the first trimester are at 41% higher risk of spontaneous delivery all through the pregnancy, suggests a recent study published in the *American Journal of Obstetrics and Gynecology*[1].

Paolo I Cavoretto and coauthors carried out a secondary analysis of data from the Screening Programme for Pre-eclampsia trial, which assessed the effectiveness of two different methods for screening for preterm pre-eclampsia, the Fetal Medicine Foundation model versus a traditional history-based risk scoring system. A subgroup of women with spontaneous onset of delivery was categorized into three groups based on their risk for preterm pre-eclampsia as assessed by the Fetal Medicine Foundation model at 11 to 13 weeks of gestation: Group 1 (low risk) included women with risk of preterm pre-eclampsia <1/100, Group 2 (intermediate risk) with risk between 1/50 and 1/100 and Group 3 (high risk) with risk >1/50. Through this study, the investigators aimed to examine whether the estimated risk of pre-eclampsia correlates with the gestational age at spontaneous delivery in cases without pre-eclampsia.

Out of the 16,451 participants in the Screening Programme for Pre-eclampsia trial, the present study included 10,820 cases with delivery after spontaneous onset of labor. Group 1 had 9,795 cases, Group 2 had 583 cases and Group 3 had 442 cases. The distribution of gestational age at delivery varied among the groups, with different percentages of cases delivering at <28, <32, <35, <37, and <40 weeks. In Group 1, the percentage of cases delivering at gestational ages <28, <32, <35, <37, and <40 weeks were 0.29%, 0.64%, 1.68%, 4.52%, and 44.97%, respectively. In Group 2, the corresponding figures were 0.69%, 1.71%, 3.26%, 7.72%, and 55.23% and in Group 3, they were 0.45%, 1.81%, 5.66%, 13.80%, and 63.12% of cases. The study found that the curve profile of gestational age at spontaneous birth was significantly different between the three groups in both overall and also in pairwise comparisons.

The risk of spontaneous delivery increased by 18% among women at intermediate risk (vs. women at low risk). The risk rose by 41% among women at high risk for pre-eclampsia compared with women at low risk.

Overall, these findings point out the significance of early assessment of the risk of premature pre-eclampsia and its potential impact on the timing of spontaneous onset of labor. They suggest that the timing of spontaneous birth varies significantly based on the first-trimester risk assessment for preterm pre-eclampsia. Women with a higher risk for pre-eclampsia in the first trimester may give birth earlier than those at lower risk. The risk for spontaneous birth is four times higher at gestational ages of 24 to 26 weeks, three times higher at 28 to 32 weeks and two times higher at 34 to 39 weeks. Hence, close monitoring and potentially earlier interventions may be warranted in these cases to mitigate the risks associated with spontaneous birth and complications related to pre-eclampsia.

Reference

1. Cavoretto PI, et al. First trimester risk of preeclampsia and rate of spontaneous birth in patients without preeclampsia. Am J Obstet Gynecol. 2024 Jan 18:S0002-9378(24)00022-X.

Types of Memory

The easiest way to remember types of memory is by understanding the concept of *Suno, Samjho, Jano,* and *Karo* (hearing, listening, knowledge, and wisdom). Hearing is the shortest lasting memory. We hear and we forget is the rule.

Once we listen and understand, the memory is longer lasting but the same memory becomes everlasting if we not only hear, understand and know but also incorporate the knowledge in our practice.

These principles have been used by marketing people in brand recall. I know many pharmaceuticals play a game and ask 100 doctors to enter into a competition in which they have to write the company's brand a number of times in 1 minute and the one who writes the maximum number of times is given a prize. By repeatedly writing the brand name, you create a permanent impact of their brand in the soul and it is unlikely that you will forget the brand and its recall value will increase every time you think about the molecule.

The same principle has been used by devotees of Rama and Shiva where they ask people to write the name of Rama repeatedly every day and the devotees of Shiva make people write Om Namaha Shivay on a piece of paper for years together. By doing so, you inculcate the teachings of Lord Rama and Shiva.

Many spiritual Gurus give a Mantra, which is also based on the same principle. A mantra is nothing but a positive affirmation which you have to follow every minute of your life throughout your life.

Once you start doing it, a time will come when it will become a part of your consciousness and you will start living and behaving in a way as of your positive affirmation.

For example, Brahma Kumaris say that always say a positive affirmation to yourself that I am a peaceful soul. After some time, you will start behaving like a peaceful soul and you will lose agitation, anger, and negative affirmations of life.

■■■■

Study: Link Between Vitamin D Levels and Peripheral Neuropathy

A cross-sectional study carried out by researchers at Beijing Hospital suggests a correlation between vitamin D deficiency and the susceptibility to diabetic peripheral neuropathy (DPN) in older adults diagnosed with type 2 diabetes (T2D).

The study involved 230 older patients who had been living with T2D for approximately 15 years, with 175 of them diagnosed with DPN and the remaining 55 without DPN. One hundred sixty-nine patients were found to have vitamin D deficiency, characterized by serum 25-hydroxyvitamin D levels below 20 ng/mL.

Large nerve fiber lesions were assessed using electromyography, while small nerve fiber lesions were evaluated by measuring skin conductance.

Results indicated a higher prevalence of DPN among patients having vitamin D deficiency compared to those without. Furthermore, vitamin D deficiency appeared to predominantly impact large fiber lesions, as evidenced by longer median sensory nerve latency, minimum latency of the F-wave, and median nerve motor evoked potential latency in the deficient group compared to the vitamin D-sufficient group.

The study also noted a correlation between vitamin D deficiency and large fiber neuropathy, with an increased likelihood of motor nerve latency prolongation. However, electrochemical skin conductance, indicative of small nerve fiber damage, showed no significant difference between patients with and without vitamin D deficiency.

Despite these findings, the study's implications remain limited. The cross-sectional design hindered establishing a causal relationship between vitamin D deficiency and diabetic nerve damage.

(*Source: https://www.medscape.com/viewarticle/vitamin-d-deficiency-linked-peripheral-neuropathy-2024a10005dm?src=*)

Points on How to Improve Your Life

PERSONALITY

- Don't compare your life to others. You have no idea what their journey is all about.
- Don't have negative thoughts of things you cannot control. Instead invest your energy in the positive present moment.
- Don't overdo; keep your limits.
- Don't take yourself so seriously; no one else does.
- Don't waste your precious energy on gossip.
- Dream more while you are awake.
- Envy is a waste of time. You already have all you need.
- Forget issues of the past. Don't remind your partner of his/her mistakes of the past. That will ruin your present happiness.
- Life is too short to waste time hating anyone. Don't hate others.
- Make peace with your past so it won't spoil the present.
- No one is in charge of your happiness except you.
- Realize that life is a school and you are here to learn. Problems are simply part of the curriculum that appear and fade away like algebra class but the lessons you learn will last a lifetime.
    - Smile and laugh more.
    - You don't have to win every argument. Agree to disagree.

COMMUNITY

- Call your family often.
- Each day, give something good to others.
- Forgive everyone for everything.
- Spend time with people over the age of 70 and under the age of 6.
- Try to make at least three people smile each day.
- What other people think of you is none of your business.
- Your job will not take care of you when you are sick. Your family and friends will. Stay in touch.

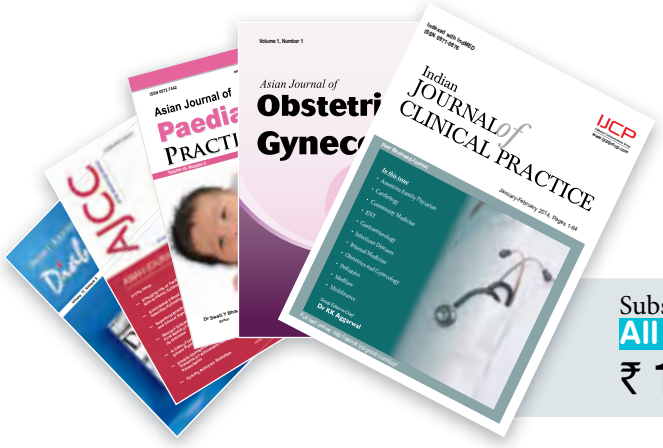
LIFE

- Put GOD first in anything and everything that you think, say and do.
- GOD heals everything.
- Do the right things.
- However good or bad a situation is, it will change.
- No matter how you feel, get up, dress up and show up.
- The best is yet to come.
- Get rid of anything that isn't useful, beautiful or joyful.
- When you awake alive in the morning, thank GOD for it.
- If you know GOD you will always be happy. So, be happy.

While you practice all of the above, share this knowledge with the people you love, people you school with, people you play with, people you work with and people you live with. Not only will it enrich YOUR life, but also that of those around you.

Remember, good things are for us to share……!!!!!!

■■■■



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Lighter Side of Medicine

HUMOR

STUDENT WHO OBTAINED 0% ON AN EXAM

Q. In which battle did Napoleon die?
A. His last battle.

Q. Where was the Declaration of Independence signed?
A. At the bottom of the page.

Q. River Ravi flows in which state?
A. Liquid

Q. What is the main reason for divorce?
A. Marriage

Q. What is the main reason for failure?
A. Exams

Q. How can a man go 8 days without sleeping?
A. No problem, he sleeps at night.

Q. How can you lift an elephant with one hand?
A. You will never find an elephant that has only one hand.

Q. How can you drop a raw egg onto a concrete floor without cracking it?
A. Any way you want, concrete floors are very hard to crack.

SIDE EFFECTS OF ALCOHOL.... AND REMEDIES!!!

Symptom: Cold and humid feet.

Cause: Glass is being held at incorrect angle (You are pouring the Drink on your feet).

Cure: Maneuver glass until open end is facing upward...

Symptom: The wall facing you is full of lights.

Cause: You're lying on the floor.

Cure: Position your body at a 90-degree angle to the floor.

Symptom: The floor looks blurry.

Cause: You're looking through an empty glass.

Cure: Quickly refill your glass!

Symptom: The floor is moving.

Cause: You're being dragged away.

Cure: At least ask where they're taking you!

Symptom: You hear echoes every time someone speaks.

Cause: You have your glass on your ear and trying to drink from it.

Cure: Stop making a fool of yourself!

Symptom: Your dad and all your brothers are looking funny.

Cause: You're in the wrong house.

Cure: Ask if they can point you to your house.

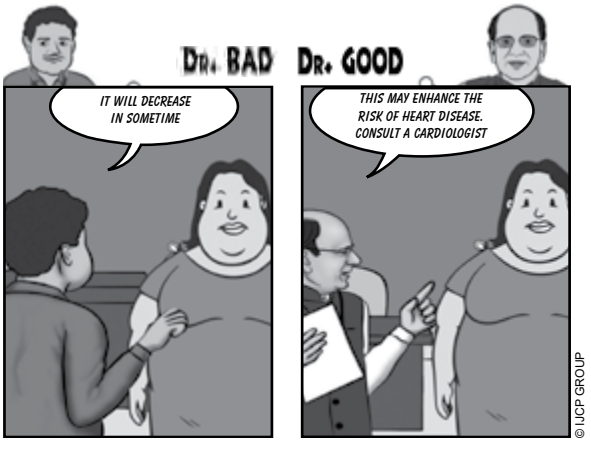
Symptom: The room is shaking a lot, everyone is dressed in white and the music is very repetitive.

Cause: You're in an ambulance.

Cure: Don't move. Let the professionals do their job!!!!

Dr. Good and Dr. Bad

SITUATION: An obese woman presented with high values of pulse wave velocity after her pregnancy and delivery which was complicated by gestational diabetes mellitus (GDM).



LESSON: According to a hospital-based cohort study, pulse wave velocity values are considerably higher after GDM in comparison with normoglycemic pregnancies. In addition, rise in this value is also associated with upregulation of prolonged TIMP-1. Moreover, it was found that cardiovascular risk factors were more prevalent in females with higher BMI in contrast to those with a history of GDM.

Cardiovasc Diabetol. 2017;16(1):49.

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- The introduction should state why the study was carried out and what were its specific aims/objectives.

Methods

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- Ethical guidelines followed by the investigations should be described.

Statistics

The following information should be given:

- The statistical universe i.e., the population from which the sample for the study is selected.
- Method of selecting the sample (cases, subjects, etc. from the statistical universe).
- Method of allocating the subjects into different groups.
- Statistical methods used for presentation and analysis of data i.e., in terms of mean and standard deviation values or percentages and statistical tests such as Student's 't' test, Chi-square test and analysis of variance or non-parametric tests and multivariate techniques.
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Results

- These should be concise and include only the tables and figures necessary to enhance the understanding of the text.

Discussion

– This should consist of a review of the literature and relate the major findings of the article to other publications on the subject. The particular relevance of the results to healthcare in India should be stressed, e.g., practicality and cost.

References

These should conform to the Vancouver style. References should be numbered in the order in which they appear in the texts and these numbers should be inserted above the lines on each occasion the author is cited (Sinha[12] confirmed other reports[13,14]...). References cited only in tables or in legends to figures should be numbered in the text of the particular table or illustration. Include among the references papers accepted but not yet published; designate the journal and add 'in press' (in parentheses). Information from manuscripts submitted but not yet accepted should be cited in the text as 'unpublished observations' (in parentheses). At the end of the article the full list of references should include the names of all authors if there are fewer than seven or if there are more, the first six followed by et al., the full title of the journal article or book chapters; the title of journals abbreviated according to the style of the Index Medicus and the first and final page numbers of the article or chapter. The authors should check that the references are accurate. If they are not this may result in the rejection of an otherwise adequate contribution.
Examples of common forms of references are:

Articles

Paintal AS. Impulses in vagal afferent fibres from specific pulmonary deflation receptors. The response of those receptors to phenylguanide, potato S-hydroxytryptamine and their role in respiratory and cardiovascular reflexes. Q. J. Expt. Physiol. 1955;40:89-111.

Books

Stansfield AG. Lymph Node Biopsy Interpretation Churchill Livingstone, New York 1985.

Articles in Books

Strong MS. Recurrent respiratory papillomatosis. In: Scott Brown's Otolaryngology. Paediatric Otolaryngology Evans JNG (Ed.), Butterworths, London 1987;6:466-470.

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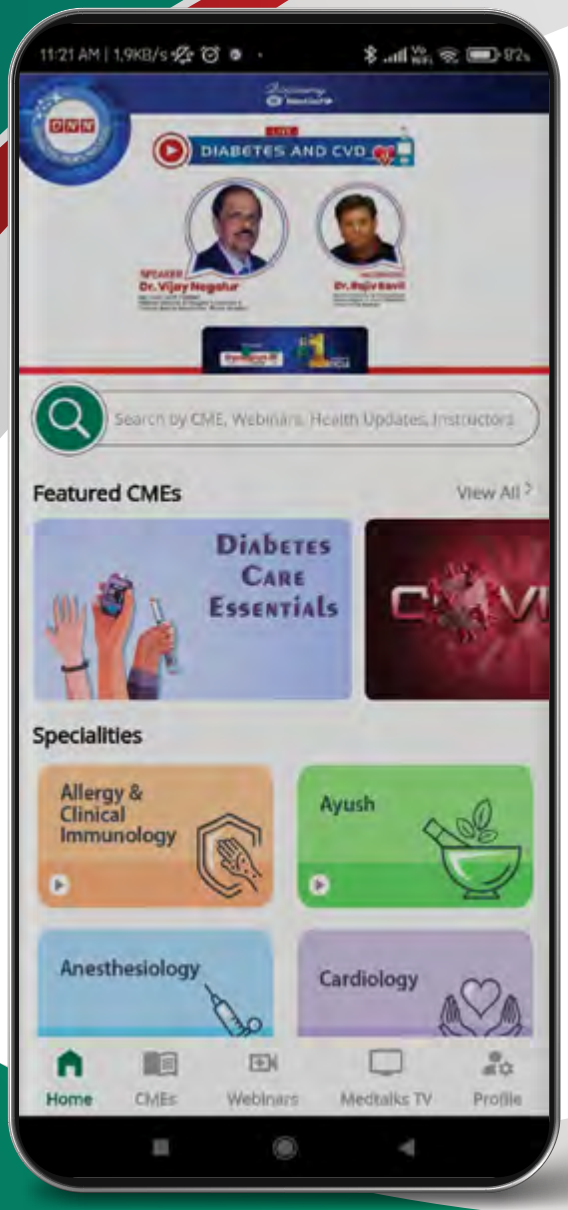

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