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A step towards save the lives of many.....

Dear Readers,

Thank you for your continuous support. Double Helical has been making a difference in the lives of the socially and economically disadvantaged groups through raising awareness as well making voluntary contributions in the areas of education, health, human rights and social services. The magazine provides a platform to recognize innovation, people, products and services that are helping to transform the healthcare sector in the country and ushering in affordable, high quality and inclusive healthcare for masses.

Keeping this in mind, Double Helical once again organises Double Helical Health Conclave and National Health Awards 2021 on **12th December in New Delhi** to paying homage to Covid-19 warriors who laid down their lives in line of duty, On the release of our special edition we shall also be giving awards to all those organizations who played pivotal role in providing COVID-19 care in difficult time.

In the current issue, we focus on current trends of Covid-19. As you know that the Covid-19 pandemic has turned into a seemingly unending cross country run with unexpected twists and turns. It started in Wuhan, China in December 2019. Overcoming all obstacles of lockdowns, social distancing and masks, the virus has spread from China to all parts of the globe. The initial pace has slowed down but for occasional bursts of speed. From a pandemic, the dynamics of the disease seems to be settling down to an endemic state, at least in countries like India with high population density. Sprint is sharp and short.

A trotting pace is more suited for a cross country run. While the virus is in its second wind, we can take time out to adjust our strategy according to this paradigm shift. Taking stock of the ruins left in the aftermath of the initial impact of this virus can enable us to calibrate our response better.

The early sprint as with most new pathogens, the initial impact was severe. Many factors contribute to such phenomena. The initial strains of a pathogen are usually more virulent. As they circulate, these strains are replaced by more benign ones due to the laws of natural selection. Secondly, emerging pathogens give rise to large number of cases in short time due to low levels of population immunity – it literally runs through the population causing high morbidity and mortality. And lastly, clinicians and public health experts grope in the dark as to the best way to manage and mitigate such occurrences. One of the major issues is the lack of high-quality real-time data to provide a comprehensive image of the events unfolding in India. Lack of data transparency, underreports, the number or fudges the data is the major problem to the scientific and medical fraternity to fight against Covid-19. Rely on anecdotal reports or simply on conjecture and hope cannot solve the problem.

According to report, two more variants have emerged that have a significant influence on this situation, which is cause for concern. We should assume any wave can hit anyone who is not vaccinated so we cannot take things for granted. Vaccination is still protective against viruses.

But sometimes there is an immune escape. We already learned lessons from the unfolding of the epidemic during the second wave of Covid-19 so there is an urgent need for an hour to take proper actions to mitigate the upcoming Covid-19 crisis.

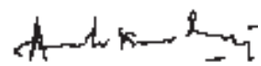
Earlier in the day, the Prime Minister Narendra Modi told in a virtual meeting that the country is administering a record 1.25 crore Covid-19 vaccination doses per day. PM Modi pointed out that this quantity is greater than the population of some countries. Today our country has administered more than a billion Covid jabs since it started its vaccination drive in January this year. It achieved this milestone in 278 days - the first vaccine was given on 16 January.It has fully vaccinated about 30% (291 million) of the eligible population and 707 million have had the first dose. India aims to fully vaccinate about a billion people by the end of 2021 but experts say the drive needs to pick up pace further to meet the target. This milestone makes India the second country to reach the one billion mark - China crossed it in June. Reaching the one billion mark in 278 days means that India, on an average, administered 3.6 million doses per day. However, the number of doses actually administered each day since January was not consistent, and varied widely.

On 17 September, India administered more than 20 million doses in a day in a record-breaking effort to mark Prime Minister Narendra Modi's 71st birthday. In October, India administered an average of 5.3 million doses per day. From 19 September to 18 October, the average daily doses given slightly improved to six million. India had a slow start when vaccinations were opened for some 960 million eligible people. Logistical problems and supply bottlenecks, vaccine hesitancy and a debilitating second wave of Covid-19 during this period made the rollout harder.

India is still around 900 million jabs away from a fully vaccinated adult population, with little less than two-and-a-half-months to spare on the target. Much will depend on levels of vaccine hesitancy and the availability of doses in the coming months. From a sluggish start, India massively ramped up its vaccination drive, with more than 61,000 public and private health facilities offering the jab.

There is more such interesting and thought-provoking stuff to savour in this issue. So, happy reading!

Thanks and regards



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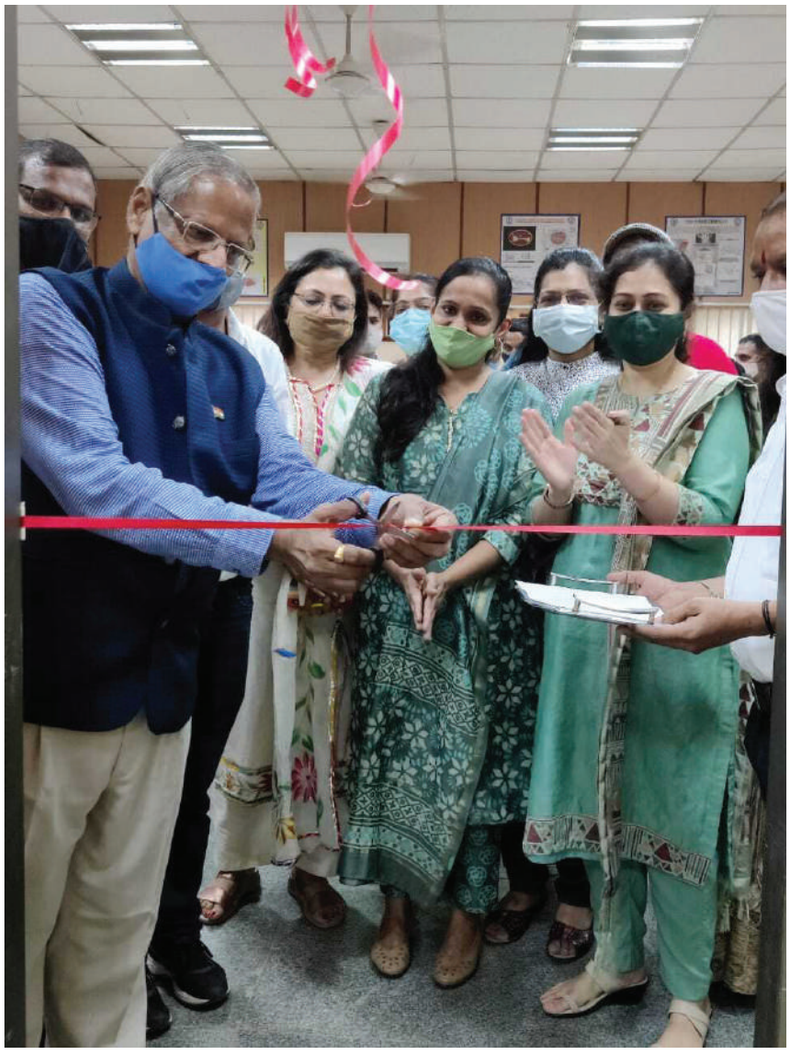


Free Vaccination Drive in DPSRU

Delhi Pharmaceutical Sciences and Research University (DPSRU), Govt. of NCT of Delhi, in association with Integrated District Health Society (IDHS), South District, Directorate of Health Services, Govt. of NCT of Delhi, organized a free vaccination drive (COVISHIELD VACCINE) for faculty / staff members and their families recently.

The vaccination drive was inaugurated by the Prof. Ramesh K Goyal,Vice-Chancellor, Delhi Pharmaceutical Sciences and Research University Prof. Goyal, in his inaugural speech emphasized that DPSRU has followed the safety guidelines and taken all measures to keep the campus safe during the pandemic. The vaccination programme is scheduled in 3 more phases, one day each in the months of October, November and December 2021.Dr. Nitin, Medical Officer, two ANMs and four vaccination officers were deployed by IDHS for the smooth conduction of the vaccination. They were also felicitated by the university authorities for their contribution and support.

Around 150 people were vaccinated in vaccination drive camp which was coordinated by Dr. Priyanka Sonam, Medical officer, Dr. Jaseela Majeed, Head of School of Allied Health Sciences and Dr. Shilpa Jain, Head of School of Physiotherapy, DPSRU.

Free Health Check Up Camp

Double Helical, a leading national health magazine, in association with SPARSH, recently organised Free Health Check Up Camp at Hanuman temple premise in Sector 1, Vaishali (Ghaziabad) with renowned doctors of reputed hospitals. SPARSH is a non-profitable, selfless, voluntary organization dedicated to the education and health of people especially children

According to Dr Sachin Bhargav, Senior Child Specialist and Convener, SPARSH, a free health check up camp is set up with a sacred aim to bring awareness and provide completely free medical checkup including all medical services which are available nowadays in hospitals like ECG, OPD, MRI, CT Scan, Diagnosis, Blood Test, Gastroenterology, Gynecology, Maternity, Nephrology, Oncology, Radiotherapy, Radiology, Physiotherapy, Urology amongst the deprived population and poor people of the country who have no access to basic healthcare services or knowledge about the diseases they are suffering from.

The free health checks up camp provided free

medical advice, medicine to the people and refer for specialized treatment or surgery whenever it is required. These camps make sure people are getting healthcare at the right time, and seeing the doctor early enough before a small health problem turns serious.

"We are driven by strong ethics of medicine who believe that it is the moral responsibility and obligation to treat each patient regardless of their income, race or social status. The main

objective of a medical camp is to provide initial care to people in life-threatening conditions which reflect the unique strengths and goals of medical ethics", Dr Sachin Bhargav, said.

Double Helical in association with SPARSH has undertaken a major initiative of organizing free health check camps dedicated to ensuring the health of expecting mothers by following the pledge of scores of doctors from renowned hospitals. Free cgeck up camp isdedicated to secure healthcare services and completely free medical health checkup for poor people urban, semi-urban and rural areas of India. Basically the free medical camps are conducted in every year on the occasion of Durga Puja. Whenever a preventive service is offered to a defined group of people there will be those who are the professionals who will naturally seek reasons for this.

The objective of the camp was to provide information regarding diet, exercise and weight control during Covid-19.

COVID-19 VACCINE CERTIFICATE

The impact of COVID-19 has posed numerous unprecedented challenges to humanity and the long journey of this pandemic has taught the mankind many lessons. Now the only way left to avoid the devastating effect of COVID-19 is vaccination and people have also realized its importance. People traveling from one country to another are facing many problems…...…

BY DR NK PRASANNA/ DR SK VARSHNEY

The vaccination certificate has further added to their ordeal. Although this is not something unusual however, the changing guidelines have created confusions among travelers. A COVID Vaccine Certificate (CVC) issued by the government gives assurance to the recipient about the immunization, the type of vaccine used and the next vaccination due date. It also serves as proof for the citizen to provide to any entity that may demand proof of immunization, particularly while travelling.

The COVID Vaccine Certificate (CVC) is anticipated to become an essential instrument for tracking and managing vaccine rollouts and reviving national economies. A certificate like this will be required to enable the safe movement of people across borders, as well as to revitalize the tourist sector, which is vital for many developing nations. The countries are currently using similar schemes in the absence of an internationally recognized credential for COVID-19 immunization. Denmark has stated that COVID-19 passports would be issued and printed through the unified Danish e Health Portal. Those who have been vaccinated in Israel will be issued a "green passport," which will give them entry to eateries and cultural events, also exempting them from quarantine regulations and the requirement of a virus test before travel.

Greece and Israel have previously agreed to recognize the green passports of each other. Everyone who has been vaccinated in India will receive an electronic certificate based on a QR code on their smart phone, with the option to download a print copy. According to the reports, European nations are considering to introduce a "Digital Green Certificate" that will permit safe and unrestricted mobility within the EU during the epidemic. According to the plan a Digital Green Certificate, which can be used across all EU Member States, will prove that a person has been vaccinated against Covid-19, has gotten a negative test result, or has recovered from Covid-19.

Experts believe that a 'natural

certificate' will be far more effective than a negative RT-PCR test or oral vaccine certificate because a vaccinated person can very well carry infection from one place to another, but there is a high probability that the virus will not cause any serious disease to that individual. This has led to the development of the idea of Digital Documentation of COVID-19 Certificates (DDCC). The idea of Digital Documentation of COVID-19 Certificates (DDCC) is presented in the context of the corona virus disease (COVID-19) pandemic as a mechanism by which a person's COVID-19-related health data may be digitally recorded via an electronic certificate. A digital vaccination certificate that details a person's current COVID-19 vaccination status may subsequently be utilized for continuity of care or as proof of immunization for non-healthcare purposes. The Digital Documentation of COVID-19 Certificates: Vaccination Status (DDCC: VS) is the resultant artifact of this method.

The specification of the Smart Vaccination Certificate is renamed to the specification "Digital Documentation of COVID19 Certificates (DDCC)". In addition, WHO recognizes the importance of digitizing the International Certificate for Vaccination and Prophylaxis on paper (i.e. yellow card) over time and has decided to take a longer-term perspective in this regard to examine the various options. The scope and technical requirements for the digital documentation of COVID19 certificates (DDCC) are no longer coordinated with the mandate of the Smart Vaccination Certificate working group when it was founded; therefore the "Smart Vaccination Card Working Group" will be dissolved in its current form.

Dr. Sanjay Rai, Professor of Community Medicine, AIIMS, Delhi., said, "There is global evidence showing that people naturally recovered from COVI-19 are well protected and the risks of infection from these people are very low." Although, naturally cured should not need testing or a vaccination certificate. I suggest that these people receive a special certificate, which one can call a "natural certificate" and be honored as a negative RT-PCR test, he added. Experts believe that a "natural certificate" will be much more effective than RT-PCR negative and according to them, a vaccinated person can very well transmit the virus from one place to another; however, there is a good chance that the virus will not cause any severe illness in that individual."

Prime Minister Narendra Modi at the Global COVID summit, hosted by US President Joe Biden on September 23, 2021, said that India wants international travel to be made easier through mutual recognition of vaccine certificates. Many international flyers are facing uncertainties because of last-minute changes to flight cancelations because of the Covid Vaccination certificate. Disruptions hit from India to other countries like London Dubai Italy etc. For sure some clarity on vaccines and international travel is needed for a common global system, a significant interaction, cooperation, flexibility in adjusting to the "new normal", during the COVID-19 pandemic are need of the hour. Sometimes many crucial public health policy questions remain unanswered .

Unprecedented episodes led to extraordinary initiatives, where mutual cooperation is required. The journey was not easy for all of us its always seems impossible until it was done . But it was never impossible, together we have beaten this deadly virus before and we will continue to combat it further with the spirit of solidarity. We need to develop harmonious system and enhanced international cooperation is required to strengthen coordination and collaboration for building sustainable and resilient world.

(The authors are Scientist at CSIR-National Institute of Science Communication and Policy Research, New Delhi/ Head, International Cooperation, Department of Science and Technology, New Delhi)

EMERGING VARIANTS PO S

Dr N K Prasanna

The outbreak of the corona virus pandemic plaguing the humanity completely upended and changing the world from its forms by day by day. The flood is already continuing and alarming in the respective countries with new variants like delta and proving to be a game-changer and creating a world markedly different than before. The unanswered questions are much more complex than either or the new and old variants, the known and unknown……

DR N.K. PRASANNA / DR S.K. VARSHNEY

SE INCREASING CONCERN

At the same time emergence of a new type of virus and outbreak of infections: has led to public health emergencies and makes people confusing. Two new strains of the corona virus have emerged, putting health experts on high alert. B.1.621, which was initially discovered in Colombia, has previously been classified by the World Health Organization (WHO) as a Variant of Interest (VOI) and given the name Mu. Another C.1.2 variant was first identified as a potential variant of Interest (VOI) of covid-19 and the strain which has been assigned to the PANGO lineage (C.1.2) NICD (National Institute of communicable diseases of south Africa first spotted the new variant of corona virus C.1.2 in May 2021 by scientists from Kwauhu-Natal Research innovation and sequencing platform (KRISP)

Recently, the variant has been extended to China, Congo, Mauritius, England, New, Democratic Republic, New Zealand, Portugal, Switzerland, Africa, Europe, Asia, and Oceania. Researchers have found that newly emerging virus is much more prone to mutations and more transmissible than previously recognized when compared to the frightening variants identified so far.

PREVALENCE OF MUTATIONS AT WIDESPREAD

However, based on the available information of C.1.2 sequencing so far, the prevalence of virus around the world and South Africa have not been estimated accurately. However, scientist and researchers have reported, the rapid increase in mutations are similar to the beta and delta variants. According to the latest study, researchers found that the mutation rate of the virus was 41.8 (mutations) per year which is almost twice as fast as the global mutation rate when compared to the other types of mutation shown currently by other variants. According to the experts, this faster spread of variants for a short period of time is consistent with the evolution of Alpha, Beta, and Gamma variants, and that a single evolution event has alerted the world, which could mean that the faster rate of mutation was caused by a spike in Covid-19 caseload.

Variant of Concern (VOC)		Variant of Interest (VOI)	
Variant	WHO label	Variant	WHO label
B.1.1.7	Alpha	B.1.525	Eta
B.1.351	Beta	B.1.526	Iota
P.1	Gamma	B.1.617.1	Kappa
B.1.617.2	Delta	C.37	Lambda
		B.1.621	Mu

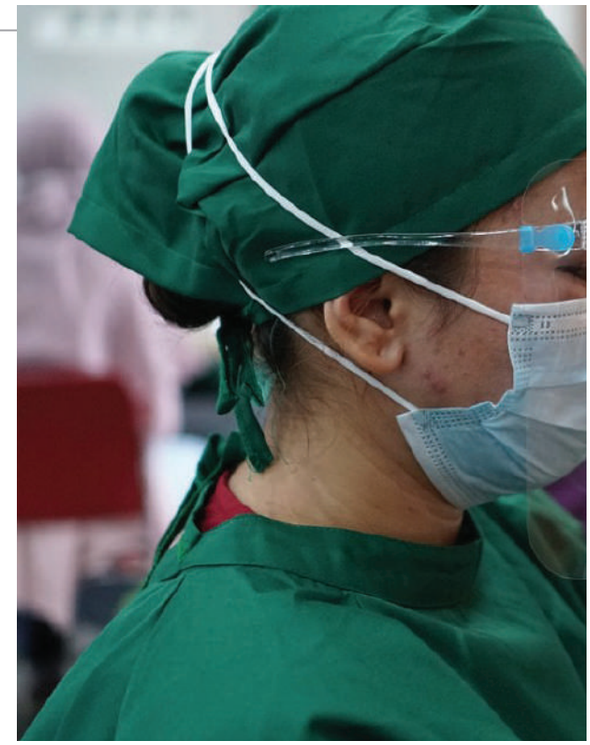
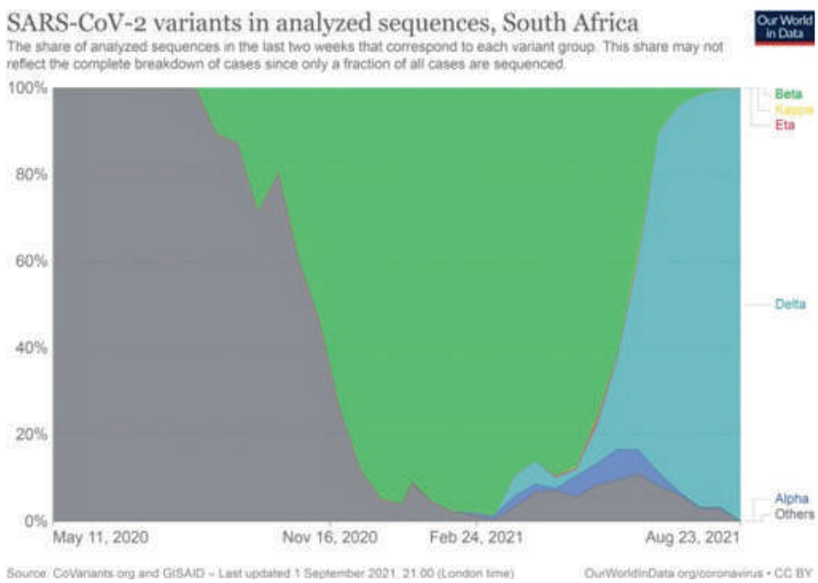


Figure 1: Recent update on variants in South Africa by GISAID 1 September 2021



INCREASED INFECTIVITY AND ABILITY TO ESCAPE ANTIBODIES:

Mutations such as N440K and Y449H have been already been reported these mutations confer immune escape and increase infectivity. The variant Mu possesses a slew of mutations that point to possible immune-evasion characteristics.

It has been discovered to be able to avoid antibodies created by illness or vaccination, with WHO stating that preliminary result "suggest a decrease in neutralization ability of convalescent and vaccine sera," but it added that these findings "need to be verified by additional investigations." According to the WHO, B.1.621 is the most recent variation of interest, and it was given the classification and a catchier Greek alphabet-based moniker, "mu" on August

The variation was originally discovered in Colombia in January, and since then, hundreds of instances have been recorded in the nation, as well as in 39 other countries across the world.

INCOMPLETE OR UNCLEAR REPORTING:

One of the major issues is the lack of high-quality real-time data to provide a comprehensive image of the events unfolding in India. Lack of data transparency, underreports, the number or fudges the data is the major problem to the scientific and medical fraternity to fight against Covid-19. Rely on anecdotal reports or simply on

Sanjeev Kumar Varshney

conjecture and hope cannot solve the problem. It will only harm rather than help. Before taking any decision first we must prioritize our objectives, whether proper data is available or not? Because we don't really know how many people are infected, how many people have clinical complications?

How many people are asymptomatic? How many children are infected? All we need is appropriate and authenticated data. In terms of vaccination coverage, India still is lagging behind other countries. We need some national guidelines on how to report the data Proper strategies and policy actions are needed to tackle the pandemic.

Two more variants have emerged that have a significant influence on this situation, which is cause for concern; we should assume any wave can hit anyone who is not vaccinated so we cannot take things for granted. Vaccination is still protective against viruses. But sometimes there is an immune escape. We already learned lessons from the unfolding of the epidemic during the second wave of Covid-19 so there is an urgent need for an hour to take proper actions to mitigate the upcoming Covid-19 crisis.

Earlier in the day, the Prime Minister told in a virtual meeting that the country is administering a record 1.25 crore Covid-19 vaccination doses per day. PM Modi pointed out that this quantity is greater than the population of some countries. PM urges people to get vaccinated. Vaccines are still effective and help's in preventing hospitalization. Having two doses of Covid vaccine remains the best way to protect against from the variants

CONCLUSION:

The identification of specific Variants of Interest (VOIs) and Variants of Concern (VOCs) in order to prioritize global monitoring and research, and ultimately to inform the ongoing response to the COVID-19 pandemic, was prompted by the emergence of variants that posed an increased risk to global public health. Complete genomic sequences and accompanying metadata should be submitted to a publicly accessible database, such as GISAID to increase the pace of research on these variants. According to experts, the only method to limit the creation of new variations is to reduce illness transmission through measures such as immunization or adherence to Covid-appropriate behavior. There is a basic requirement for constant reconnaissance of the viability of counter-acting agent reaction against new variations, and to continue to survey whether supporter antibody portions are required, or regardless of whether immunizations themselves should be refreshed. At the same time, a genomic observation of new variations must be preceded. The systems should have been built and are being strengthened on a worldwide scale to detect "signals" of probable VOIs or VOCs and analyze them based on the risk to global public health.

(The authors are Scientist at CSIR-National Institute of Science Communication and Policy Research/ Head, International Cooperation, Department of Science and Technology, New Delhi)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COVID-19: CURRENT TRENDS & POLICY IMPLICATIONS

The Covid-19 pandemic has turned into a seemingly unending cross country run with unexpected twists and turns. It started in Wuhan, China in December 2019. Overcoming all obstacles of lockdowns, social distancing and masks, the virus has spread from China to all parts of the globe....

BY DR AMITAV BANERJEE

The initial pace has slowed down but for occasional bursts of speed. From a pandemic, the dynamics of the disease seems to be settling down to an endemic state, at least in countries like India, with high population density. Sprint is sharp and short. A trotting pace is more suited for a cross country run. While the virus is in its second wind, we can take time out to adjust our strategy according to this paradigm shift. Taking stock of the ruins left in the aftermath of the initial impact of this virus can enable us to calibrate our response better.

The Early Sprint As with most new pathogens, the initial impact was severe. Many factors contribute to such phenomena. The initial strains of a pathogen are usually more virulent. As they circulate, these strains are replaced by more benign ones due to

the laws of natural selection. Secondly, emerging pathogens give rise to large number of cases in short time due to low levels of population immunity – it literally runs through the population causing high morbidity and mortality. And lastly, clinicians and public health experts grope in the dark as to the best way to manage and mitigate such occurrences.

Chaos and Anarchy in Management and Mitigation in the early days

The initial months of the pandemic were chaotic. Going by past experience of severe acute respiratory syndrome outbreaks a large number of acutely ill patients of SARS-CoV-2 were put on ventilators. Besides, a number of repurposed drugs had their moments of popularity only to be found ineffective during trials subsequently. Some of the initial mortality can be attributed to these well meaning but misguided efforts at management of individual patients. By trial and error the clinical management of patients improved and so did their survival rates. Judicious use of oxygen and steroids contributed to better outcomes.

Anarchy leading to panic influenced the initial public health response. Mathematical models predicted gloom and doom. Inputs from countries like Italy with very high death rates due to an aging and frail population grossly overestimated the impact of the virus. 2 The transmission due to contaminated surfaces was also overestimated in the early days. There were hysterical attempts to disinfect all inanimate and even animate things including humans by spraying bleach. Thankfully, transmission from contaminated surfaces was found to play a much lesser role and such drastic and obsessive measures became less frequent. Some of the most restrictive and draconian measures in public health history, such as country wide lockdowns and closure of educational institutions were adopted by most countries.

The rationale of these measures was based on computer models to "break

the chain of transmission." These models overlooked the fact that human beings are not "inert units" but are social beings difficult to insulate from their surroundings. These measures had no impact in "breaking the chain of transmission" as evidenced by the global spread with high levels of community transmission in countries with the strictest lockdowns. The Indian Covid-19 experience - An Epidemiological Enigma The enigma of Covid-19 is best illustrated by the Indian experience.

Being a large and densely populated country with different social and physical environments it is the Petri-dish for studying the epidemiology of Covid-19 with policy implications for the world. The Indian pandemic pattern illustrates textbook style the dynamics of communicable diseases epidemiology. It brings into sharp focus the interplay of the epidemiological triad of agent, host and environment. The novel agent first landed in Indian soil in late January 2020. It was brought to the state of Kerala by a young student returning from Wuhan, China. It is very likely that the infection slipped into India from other borders as well as most cases are asymptomatic and mild.

By end of March 2020, when the number of cases in India crossed 500 and deaths from Covid-19 were 10, India clamped the strictest countrywide lockdown in the world. This knee jerk reaction was due to the global panic precipitated by highly inflated inaccurate predictions of global catastrophe due to the so called lethal virus (initial estimates of lethality were derived from hospital cases of geriatric patients in the West; an early paper in the Lancet reported fatality rate of 20%). Besides, the authorities and their scientific advisers, without taking into account our demography, underestimated the silent transmission potential of the virus. They "overestimated the

Illustration by: Shradha Kotyan

lethality" and "underestimated the transmissibility" of SARS-CoV-2. This bias still persists in spite of hard evidence to the contrary. Subsequent, population level serosurveys revealed that the virus runs through populations silently, the bulk of the infections being asymptomatic.

This refined the infection fatality rate of the novel corona virus to less than 0.1% in India, many times lower than most of our endemic diseases. Did the restrictive measures work? India experienced two major waves, first between April and November 2020 and the second from February 2021 to June 2021. Paradoxically these were during the lockdown periods. On the other hand, during unlocking phases, first between November 2020 to February 2021 and subsequently after June 2021, the incidence kept on plummeting. What explains these perplexing phenomena? The first wave peaked around September 2020 touching a daily tally or about 1 lakh cases and 1200 deaths. After this first wave the countrywide serosurvey by the Indian Council of Medical Research (ICMR) indicated that 21% of the population had encountered the infection. Obviously, the lockdowns did not work. What caused the unexpected and vicious second wave? March 2021 onwards, cases spiked sharply and also more importantly, deaths. In record time cases peaked around first week of May 2021 recording 4 lakhs cases in a day.

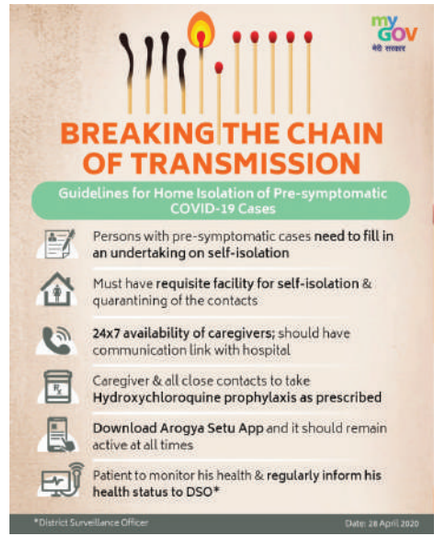
The cracks in our public health structure were laid bare. There were crises of beds, and more importantly, oxygen. Just when all predicted complete collapse, the cases started declining as rapidly as they had shot up. By end of May 2021 it halved to around 2 lakhs per day. Presently it is between 40, 000 daily cases with around 500 daily deaths. What is the explanation for the unexpected twists and turns?

The role of vaccination when the

peak declined sharply around end of May 2021 is minimal. Only 3.5% of our population was vaccinated at that point of time, far less than most countries which are struggling with far higher vaccination coverage. Iceland and Israel are experiencing spikes in spite of vaccination coverage of over 60-70% of their population. Basics of immunology and epidemiology can provide some answers. The pandemic is unfolding according to the classic dynamics of communicable diseases epidemiology, intercepted by restrictive measures such as lockdowns.

At the end of the first wave, according to the ICMR survey about 21% of our population had IgG antibodies against the SARS-CoV-2. They were mostly the working class at the lower socioeconomic spectrum, mostly living in slums and tenements as exemplified by the Dharavi experience of Mumbai and the slums of Pune, in Maharashtra, the hotspots of the Indian corona experience. In some of these pockets, the sero positivity reached 70-80% according to our study in Pune. The experience of the more affluent middle and upper classes comprising more than 70% of the population was different during the first wave. They could afford to work from home and meticulously follow "covid appropriate behaviour," effective in the short term but difficult to sustain indefinitely. The first wave subsided due to these two factors, herd immunity among the lower classes and "covid appropriate-behaviour" among the privileged – however, the latter was left vulnerable and contributed the critical mass for the second wave.

Lulled into lowering their guard, they started mixing and participating in all social gatherings. The second wave ran through this vulnerable mass like wildfire facilitated by the highly transmissible delta variant. While overwhelming the hospital services,



the wide circulation of this variant which according to some estimates can reach 30 times the detected cases brought about high population level immunity which sharply put the brakes on the second wave. This was confirmed by the fourth round of serosurvey by ICMR at the end of the second wave where the IgG levels was detected in 67% of the population.

The children were found equally to have experienced natural infection putting into question the rationale of closure of educational institutions. Will we have a third wave and the policy implications? Given this level of herd immunity across all age groups, the likelihood of an impactful third wave is negligible irrespective of the vaccination coverage of our population. In densely populated countries like India, natural infection contribute more towards herd immunity vis-s-vis mass vaccination, given the logistics and challenges of such a gigantic operation.

Moreover, recent reports of surges from countries like Iceland, Israel and to some extent from UK with very high rates of population vaccination should raise the question whether to go for mass or focused vaccination of vulnerable groups. Given the high level of herd immunity in our population and with recent research reports bringing out that natural infection confers long lasting and robust immunity against re-infections we can go for focused vaccination of vulnerable instead of mass vaccination. States like Kerala which checked the transmission in the early part of the pandemic are facing rising incidence when countrywide rates are falling. This is due to lower herd immunity in the state in the state due to interrupted transmission earlier on. One cannot prevent the full cross country run of the virus, one can only postpone it.

CONCLUSION

Policy should be guided by epidemiology. It is established that severity is hundredfold in the frail elderly and those with co-morbidities while the healthy and young usually have asymptomatic to mild infections. Children rarely suffer because of good immunity due to an active thymus gland, high melatonin levels and paucity of ACE receptors. Data from Sweden which kept the schools open throughout the pandemic also support this – no excess morbidity or mortality in children or school teachers were recorded, neither the schools precipitated community transmission. Given these dynamics it would be logical to go for focused protection of the vulnerable by vaccination instead of closing businesses and educational institutions and putting the whole population in quarantine with its collateral harms. Given the countrywide community transmission it also makes no epidemiological sense for aggressive testing and contact tracing or requirement of negative RT-PCR reports for inter-state travel.

(The author is Professor and Head, Department of Community Medicine, Dr D Y Patel Medical College, Hospital and Research Centre, Pune)

AUTISM SPECTRUM DISORDERS

Autism Spectrum Disorder (ASD) is increasing worldwide, the American Academy of Pediatrics (AAP) mentions that 1 in 54 children are diagnosed with ASD. About 1 in 100 children in India under the age of 10 has Autism spectrum Disorder (ASD.…….

BY DR NANDANI MUNDKUR

Autism spectrum disorder (ASD) refers to a group of complex neurodevelopment disorders characterized by repetitive and characteristic patterns of behavior and difficulties with social communication and interaction. The symptoms are present from early childhood and affect daily functioning. Autism Spectrum Disorder (ASD) associates with symptoms that include persistent deficits in social communication and social interaction across multiple contexts and restricted, repetitive patterns of behavior, interests, or activities. Deficits in social-emotional reciprocity is ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures to a total lack of facial expressions and nonverbal communication.

Deficits in developing, maintaining, and understand relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive), stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypes, lining up toys or flipping objects, echolalia, idiosyncratic phrases), insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).

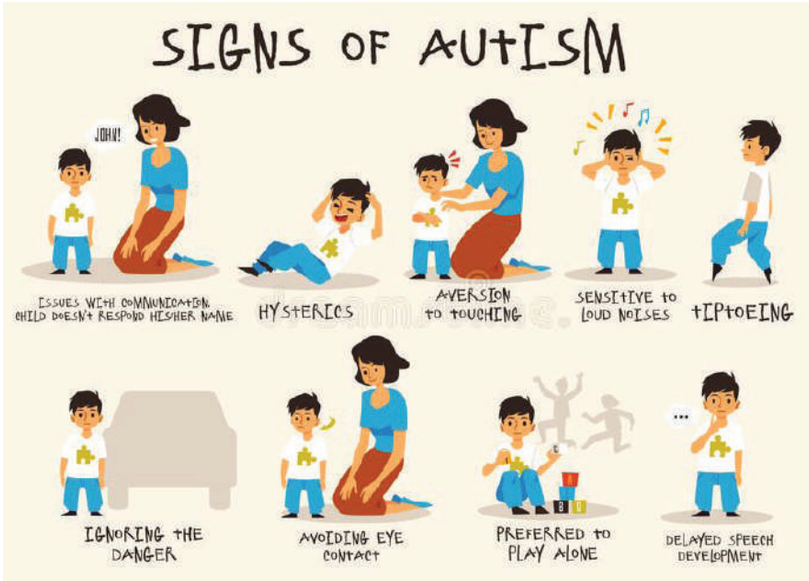
These symptoms result from underlying challenges in a child's ability to take in the world through his senses, and to use his body and thoughts to respond to it. When these challenges are significant, they interfere with a child's ability to grow and learn, and may lead to a diagnosis of autism.

WHAT IS AUTISM?

Autism or Autism Spectrum Disorder (ASD) is a disorder of brain development, characterized by difficulties in social interaction, social communication and repetitive behaviors.

AUTISM – AN OVERVIEW

IS THERE A MEDICAL TEST TO DIAGNOSE AUTISM? DO CHILDREN WITH AUTISM LOOK DIFFERENT?



The answer to these is NO; hence diagnosing autism spectrum disorder (ASD) can be difficult. Doctors look at the child's developmental history and behavior to make a diagnosis. With increasing awareness, the average age of diagnosis in India has come down to 2.5-3 years.

Pediatricians can detect the risk for developing ASD in toddlers as early as 16-18 months.

As a parent you are in the best position to spot the earliest signs of autism. The key is to educate yourself, observe your child, spot deviations from normal developmental milestones, and be aware of symptoms of autism and above all DO NOT ACCEPT A WAIT AND WATCH APPROACH.

REPETITIVE BEHAVIOURS:

- Engaging in restricted range of activities such as lining up of toys.
- Behaviours such as hand flapping, rocking, jumping.
- Insisting consistency in environment and daily routine.
- Preoccupations or obsessions.

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MYTHS AND FACTS ABOUT AUTISM SPECTRUM DISORDER (ASD)

MYTH - MY CHILD HAS LANGUAGE PROBLEMS BECAUSE I'M A WORKING MOTHER.

We have heard mothers, particularly working mothers, blame themselves countless times for speech problems in children. While it is true that parental interaction definitely enhances the breadth and richness of a child's language, it's not about the quantity of time you spend with your child; it depends on the quality of time you spend.

MYTH – MY CHILD WILL EVENTUALLY OUTGROW HIS DEVELOPMENTAL DELAYS

Track and Act is a developmental tool for children between the ages of 4 months and 5 years. You can screen your child's development in the various developmental domains. Depending on the score, the report generated provides exact information on what areas the skill development needs to be done.

This is a very commonly heard phrase. While it is true, that every child develops differently and a child might fall behind slightly as compared to others of his age, it is important to keep

track and act early. All developmental problems do not disappear with age – Parents must monitor milestones.

MYTH- AUTISM IS CAUSED BY BAD PARENTING SKILLS

While some parents are less interactive with their children, that is not the reason for developing the condition

MYTHS- VACCINES CAN CAUSE AUTISM

Many parents think that vaccination, especially MMR vaccination is the cause for Autism, this is not true

MYTH - BOYS OFTEN SPEAK LATE THAN GIRLS

It is true that boys produce their first words and sentences later than girls. However, these differences are only small just 1-2 months behind their girl peers but not more than that. These differences even out within a few

months.

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MYTH: SPEAKING IN MULTIPLE LANGUAGES AT HOME IS THE REASON FOR DELAYED LANGUAGE SKILLS

This is not true; in fact research shows that where two languages are spoken at home, children develop better language skills.

MYTH: CHILD IS NOT INTERACTING WITH OTHERS DUE TO PRESENT COVID PANDEMIC

The social interaction of children less than 2 –2 ½ years is mainly with parents and caregivers at home, child enjoys social games like peak-a-boo, imitates parents, action rhymes.

MYTH – SCREEN TIME IS THE CAUSE FOR AUTISM

This is not true, though the screen time can delay language skills due to less interaction, once the screen time is reduced; children pick up these skills well.

MYTH - AUTISTIC INDIVIDUALS CANNOT BUILD OR MAINTAIN RELATIONSHIPS

FACT – Individuals on the spectrum can form fulfilling and lasting relationships. While they commonly display differences in social interaction and communication, they do not characteristically prefer social isolation

MYTH - AUTISM CAN BE CURED WITH MEDICATION

FACT – Whereas many people believe that Autism can be cured with a certain set of medicines, there is no such medicine available, or even required to 'treat' Autism. While Autism cannot be 'cured', focusing on abilities empowers, Autistic individuals to lead happy, productive, and independent lives with the right support and intervention.

MYTH - INDIVIDUALS WITH AUTISM ARE INTELLECTUALLY INFERIOR

FACT – People with Autism may have the same range of intellect as the general population and can excel at one or more things just like everybody else. Different people can have different gifts. They may also have a lower intellectual ability, which needs to be evaluated.

MYTH - EVERYONE WITH AUTISM IS NON-SPEAKING

FACT – The reason why we call it the 'Autism Spectrum' is because it is just that – a range of different people, personalities, behavior patterns, interests, and abilities. Thus, to say that each Autistic individual is non-speaking would be entirely misguided. Some individuals on the spectrum merely have impaired social communication skills. Others may have difficulties in comprehension. Another percentage of individuals may not speak at all, yet interact through an assistive communication device, a letter board, or sign language. An Autism diagnosis is broad, which makes personalized interventions focused on individual needs critical.

MYTH - REPETITIVE TASKS SUIT AUTISTIC INDIVIDUALS THE BEST

FACT – Repetitive behavior is seen in a lot of people on the Autism spectrum. However, as established above, there are diverse behavior patterns seen in Autistic individuals.

MYTH: FAMILY MEMBERS SPOKE LATE, AND THEY ARE VERY GOOD IN ACADEMICS AND PROFESSIONAL SKILLS

FACT While it is very difficult to remember this exactly, family members would have had excellent social skills and other areas of development would have been normal

DIAGNOSTIC ODYSSEY

While the parents suspect that something is abnormal with the child by 1 year of age, however they do not discuss this with their pediatricians. Further, adding to the problem, the social communication milestones are easily overlooked by the primary physicians. Therefore, it is seen that the average age of diagnosis is usually around 3 – 4 years. This delay should be avoided, as intervention at the earliest before 2 years of age gives best outcomes as we are working with the neuroplastic brain. Parents also take time to accept the diagnosis, even if referred by primary physicians on time. This further adds to the delay in seeking early attention. Building awareness about benefits of early diagnosis and intervention, both the parents and primary physicians should monitor social, cognitive and communication milestones and consult a developmental pediatrician at the earliest.

(The author is Director, Centre for Child Development and Disabilities, Bangluru)

ADVANCES IN BACK PAIN MANAGEMENT

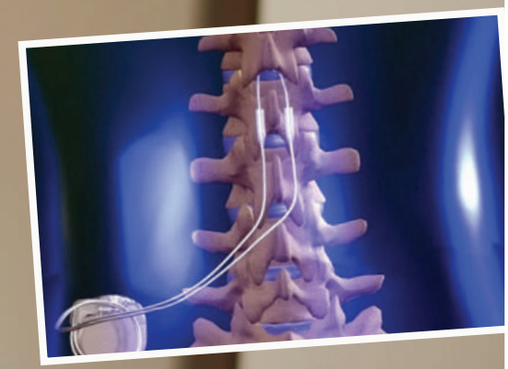
Low back pain still remains a mystery for most people. It often starts without any warning and without any obvious reason, interferes with daily activities and a comfortable night's sleep, and then just as unexpectedly the pain subsides……..

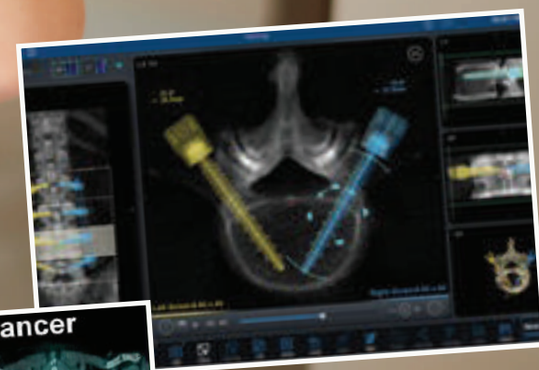
DR HARVINDER SINGH CHHABRA

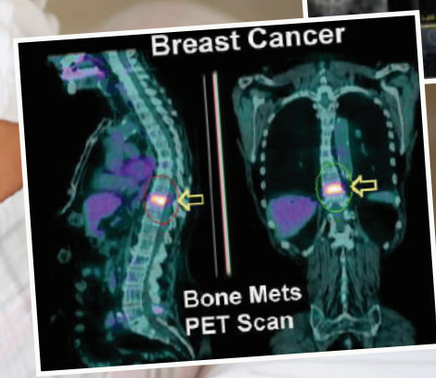
When in acute pain we desperately seek relief from the pain. But as soon as we recover from an acute episode, we tend to forget about the problem. Once we develop recurrent low back pain, we have to seek assistance time and again, to become pain free.

According to recent statistics, 80 – 85% of people will suffer from a significant low back pain at some point of their life time, In United State of America it is the second most common ailment after common cold. What compounds this bad news is the fact that nearly 70% of sufferers will have a recurrence within one year of the initial episode.

The seriousness of chronic low back pain is often emphasized in terms of the hair-raising economic costs of work absenteeism (it is responsible for the highest number of man hours lost in the industry , but it may well be far worse than that — a recent Swedish study shows that it probably even shortens lives.






Breast Cancer
Bone Mets
PET Scan

However, the good news is that most episodes of back pain will last only a short time (upto 75% recover in three months), only 1-3% of back problems would require surgery and a healthy lifestyle helps.

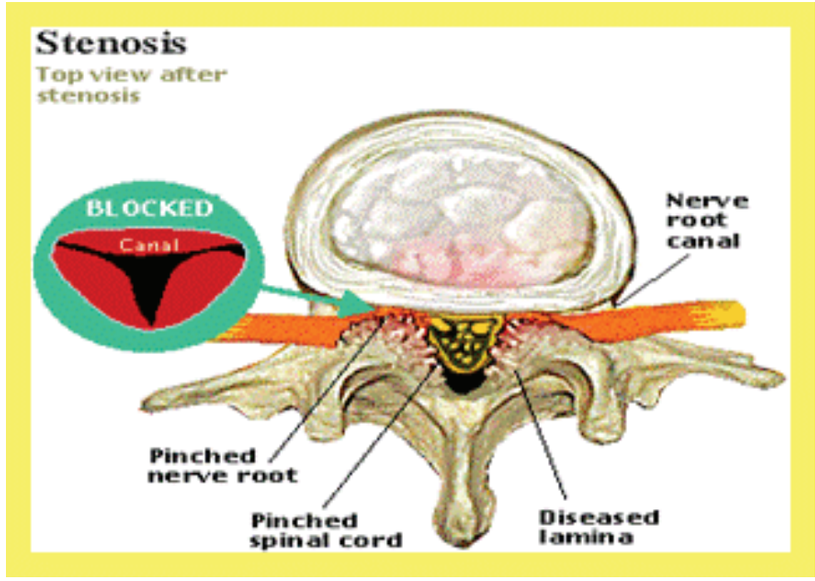
Mechanical back pain is among the most common causes of back pain where the pain aggravates with activity and is relieved by rest. Sedentary lifestyles and improper postures are two main reasons why back pain has assumed epidemic proportions. Amongst the other predisposing factors are professions requiring manual work / prolonged improper posture / sedentary work, obesity, stressful life style, pregnancy and previous history of back pain.

A number of structural problems may also result in back and leg pain which include bulging/ ruptured discs, arthritis, spinal canal stenosis (narrowing of the spinal canal), scoliosis (abnormal curvature of the spine), spondylolisthesis (one vertebra slipping forward over another vertebra), infection, osteoporosis (brittle and porous bones), tumours and referred pain(pain from other areas of the body like kidney/ureter/uterus may radiate to the back and cause back pain).

Investigations like MRI are advised if the back pain fails to resolve with conservative trial of more than 6 weeks, if back pain occurs after an injury or fall or if back pain is associatedwith difficulty in bladder/ bowel control, weakness in legs, fever or with unexplained weight loss.

Diffusion tensor imaging (DTI) and tractography, MR spectroscopy (MRS),Positron emission tomography (PET), Single photon emission computed tomography (SPECT), Functional MRI (fMRI) of the spinal cord are some of the latest advancements in diagnosis of spine disorders

The management of back pain could be divided into two parts – general treatment which is common for any kind of ailment of the back and treatment specific to the ailment causing back pain. The general treatment could further be divided into two parts - treatment of the back pain and reducing the chances of recurrence of back pain.



The role of conservative management cannot be underrated in spine disorders. Removal of predisposing factors, maintaining proper postures, aerobic general conditioning exercises and specific back exercises are the main stay of conservative management along with medications. The Updated Cochrane Review of Bed Rest for Low Back Pain and Sciatica suggested that for people with acute low back pain, advice to rest in bed is less effective than advice to stay active. For patients with sciatica, there is little or no difference between advice to rest in bed and advice to stay active.Unnecessary surgery should be avoided. Conversely, when conservative management has failed surgery should not be unduly delayed Back pain is generally treated by heat (hot fomentation / short wave diathermy / ultrasonic therapy etc.) / ice packs, massage and drugs. Generally ice packs are more effective during an acute episode of back pain (first 48 hours) whereas heat is more effective after the acute phase.

However, this may not hold true for everyone and one needs to find by trial and error as to what gives maximum relief. Massage should be gentle and no sudden jerk or torsional strain should be applied. Non steroidal anti-inflammatory drugs should be used only for a limited period. Prolonged use of these drugs can cause serious side effects on the gastrointestinal system, kidney and heart. In fact there are more deaths in the US due to the side effects of these drugs than due to AIDS. However this does not mean that these drugs are not to be used at all and are just “pain killers”. They reduce the inflammation and thus relieve the pain thereby helping the individual to be up and around earlier. If there is an associated pain traveling down the leg (like in sciatica), the doctor may prescribe additional drugs like Pregabalin.

The second part of the treatment, i.e. reducing the chance of recurrence is equally, if not more important. For this one has to try to remove the predisposing factors. Adequate amount of general conditioning exercises like walks, treadmill,

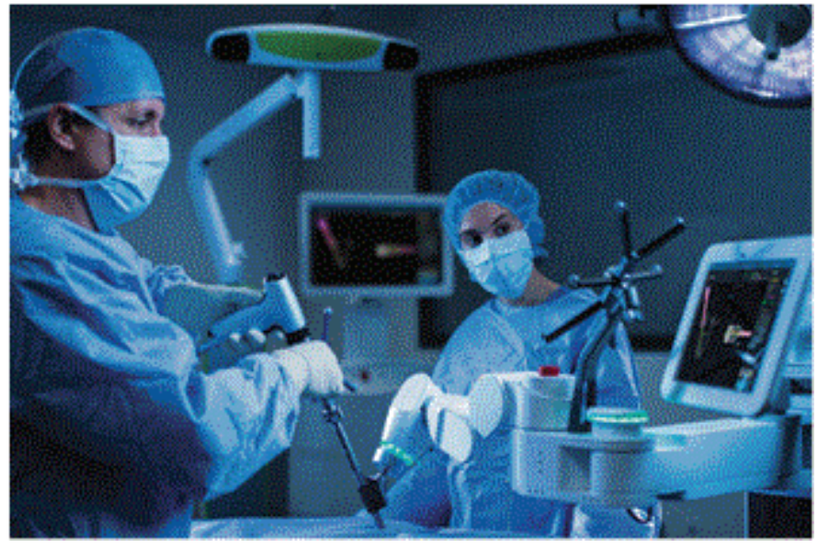
aerobics, swimming etc need to be incorporated into one's normal lifestyle. 4 kms of walks at a stretch or its equivalent of another general conditioning exercise upto 4 days in a week is sufficient. In addition, the muscles of back could also be strengthened by stretching / yogic exercises.

To maintain a normal posture, one should maintain the normal curves in the spine at all times, whether in sitting, lying or working position. One should use a proper chair when sitting for a long time, mattress on the bed should not sag, one should not slouch in the bed or chair and should not be in one position for long hours (one could change the posture every 40-50 minutes while sitting). Modifying the workplace environment may be very important.

Trying to maintain one's weight, conditioning the back muscles after pregnancy and taking suitable steps to tackle the mental stress are other important aspects to reduce the chance of recurrence.

If a herniated (prolapsed inter vertebral) disc does not respond to general treatment one may need to go in for epidural injections or surgery. Transforaminal epidural steroid injections under fluoroscopic guidance are safe and upto 60 percent of patients who do not respond to a comprehensive conservative treatment, get long term relief with three such injections thus obviating a surgery. Spine surgery has seen advancements in operative techniques, implants and biologics, and equipment such as computer-assisted navigation and surgical robotics increasing the safety and accuracy of surgery.

Intraoperative neuro-monitoring has increased the bar of safety in spine surgery, particularly in cases with kyphosis, scoliosis, or pre-existing neurological impairment. Any potential insult to the cord can be detected immediately so that remedial measures



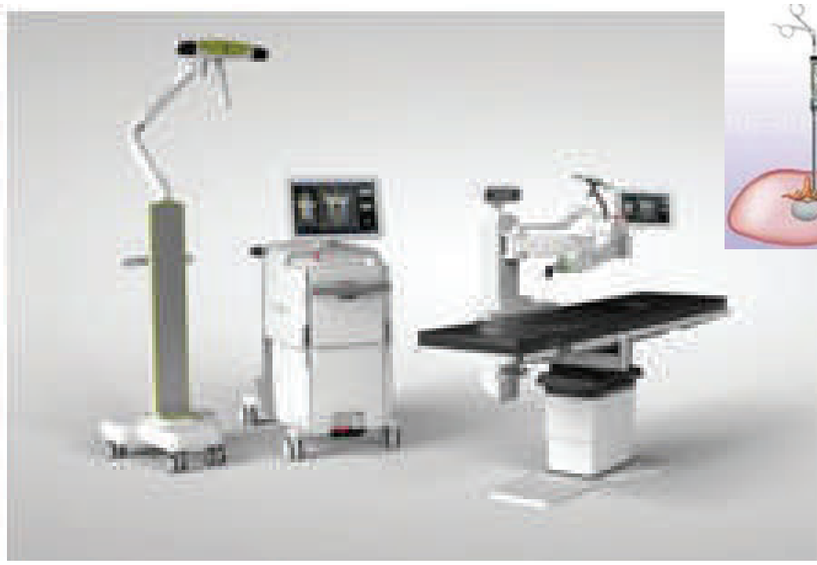
can be taken immediately.

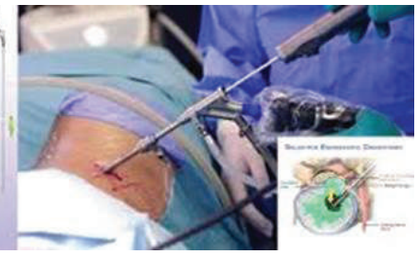
Spine surgery could be done by traditional open or minimally invasive techniques. Minimally invasive spine surgery techniques reduce the need for larger incisions and reduce muscle dissection. They carry less blood loss and postoperative pain; reduce the length of hospital stay and patients return to normal activities sooner. Thus in surgery for prolapse intervertebral disc, the budging disc could be removed by traditional, microscopic or endoscopic procedures. In Endoscopic disectomy a tubular retractor is placed by dilation of muscles rather than splitting of muscles in traditional technique. A light source and camera is placed on the tubular retractor thus enabling a magnified image of surgical field with good illumination. The surgery is carried out through this tubular retractor.

Spine surgery relies upon meticulous fine motor skills to manipulate neural elements and a steady hand while doing so, often exploiting small working corridors. These procedures may also be long and arduous, predisposing the surgeon to both mental and physical fatigue. Spinal robotics and navigation are the latest development in spine surgery and are making life easier for the surgeon. They represent promising potential for improving modern spinal surgery. These platforms may mitigate much of the harmful radiation exposure in minimally invasive surgery to which the patient, surgeon, and ancillary operating room staff are subjected.

The fluoroscopy time gets reduced. They also increase the accuracy of screw placement and facilitate larger screw insertion, stronger fixation and significantly fewer revision procedures. Robotic spine surgery, for example, has increased accuracy to 98-99%, reduced radiation exposure (74% as compared to C-arm and 50% as compared to navigation), reduced complication rate and reduced the length of hospital stay18. The main drawback in these procedures is the cost involved.

Mobility and stability are equal partners in the structure of the human spine as determined by our need, function, and purpose of action: to survive and excel. Hence, various innovative motion preserving surgeries have been developed to obviate the adverse effects of the traditional fusion surgery. Nowadays a disc replacement surgery can be done. When the disc needs to be removed, rather than going for a fusion surgery which by placing additional stress on the adjoining

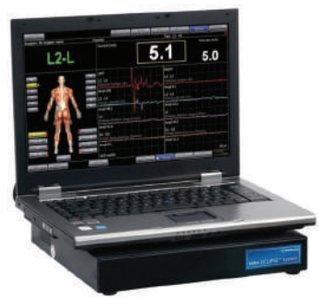




segments, predisposes to adjacent segment degeneration and increased rates of re-surgery, the disc could be replaced, thus preserving motion. Posterior dynamic stabilization(mobile screw parts, mobile connectors or a combination of both), interspinous spacers, facet joint replacement and nucleus replacement are other latest motion preserving techniques. However, a balance between the extent of mobility of the implant to avoid an overload of the bone–implant interface and an effective stabilization of the spinal motion segment must be found.

Vertebroplasty and kyphoplasty are minimally invasive surgical techniques to treat vertebral compression fractures due to osteoporosis or trauma where bone cement is injected into the vertebra, the cement hardens, stiffens the fracture and supports the spine.

Spinal cord stimulation (SCS) is a proven safe and effective therapy that can help to manage many types of chronic intractable pain. It uses low voltage (electrical) stimulation of the spinal nerves to help block the sensation of pain. To achieve SCS, a small battery-powered generator is implanted under the skin to transmit an electrical current to the spinal cord. The



electrical current generated interrupts pain signals being sent to the brain and an individual being treated generally feels pain relief. It is important to understand that stimulation does not eliminate the source of pain; it simply interferes with the signal to the brain.

Thanks to smart phones and mobile apps, our lives have become much easier. Mobile health is emerging as the most convenient way to deliver services remotely, and collect outcomes in real time, thus contributing to disease management by transferring care from hospital to home. It also facilitates back pain management through not only providing accessibility to healthcare, but also enhancing patients' understanding of their condition, and their willingness to engage in self-management so vital for back pain management, giving way to high-quality care to the satisfaction of both patients and healthcare professionals. Nowadays, there are mobile apps like Snapcare which are meant to help people with back pain and to teach them self-care of the back.

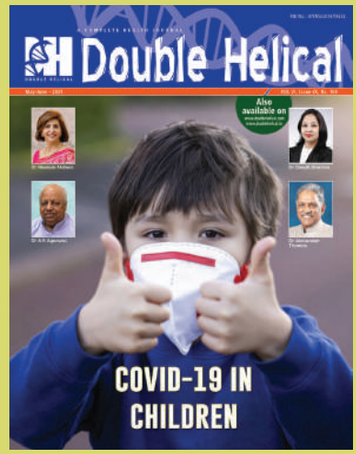
With advances in understanding the cell biology and characteristics of the intervertebral disc at the molecular and cellular level that have been made, alternative strategies for addressing disc pathology can be discovered. Areas of promise currently that are being actively investigated include mesenchymal stem cell infusion, cell isolation and reconditioning, platelet rich plasma(PRP) infusion, and tissue engineering and biomaterial-based strategies.

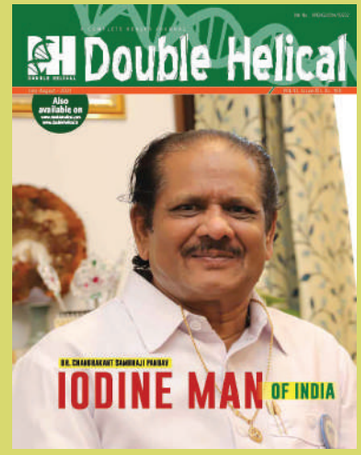
To summarise, back ailments and pain has afflicted mankind since a long time, but has assumed epidemic proportions in the last two decades. We have come a long way ahead in the field of spine. Spine care, like all of medicine, is challenging. Spine surgery has become safer and simpler with the new techniques and advancements. However, the indications and inherent limitations of the latest techniques have to be borne in mind.

A wise surgeon could help you understand the various treatment options available for your problem, explaining the risks and benefits of each of them. Do not hesitate to take a second opinion. Get a wise advice and save yourself from the agony of chronic low back pain.

(The author is Chief of Spine Service & Medical Director, Indian Spine Injury Centre, New Delhi)

Your Guide to Healthy Living





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Breast Feeding AND COVID-19

However, increasing cases of COVID-19 arises some concerns over the breastfeeding but till date there is no evidence of mother to child transmission of COVID-19 during breast feeding. Breast feeding is the basis of the infants and young child's survival, nutrition and development…. ….

BY DR. SUNEELA GARG/DR. PARAG BHARDWAJ

Today breast feeding came up with the goal to promote exclusive breastfeeding for the first six months of life which yields many health benefits, providing critical nutrients, protection from deadly diseases and fostering growth and development.

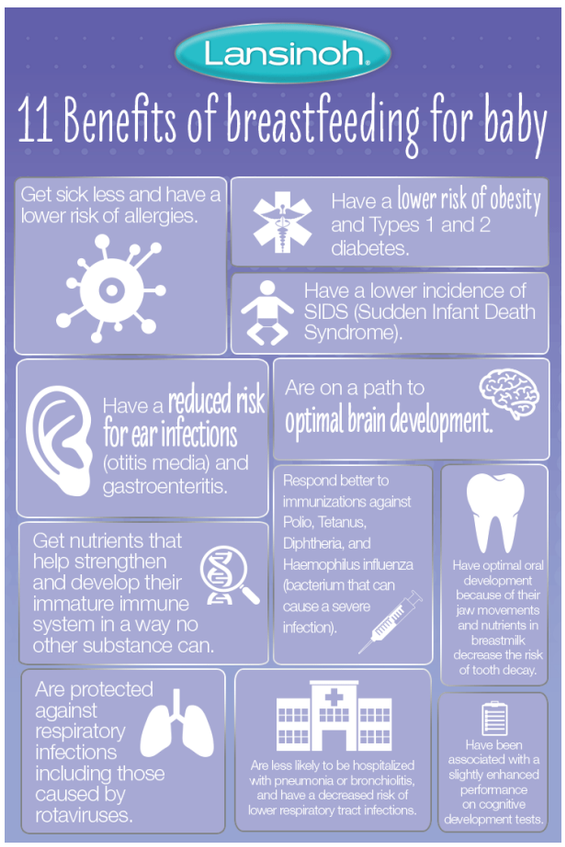
World Breastfeeding Week (WBW) is annually celebrated from 1 to 7 August in most of the countries however, in some countries WBW is celebrated in the month of May, October or November. WBW is celebrated in more than 120 countries worldwide and being organized by World Alliance for Breastfeeding Action (WABA), the World Health Organization (WHO), and United Nations Children's Fund (UNICEF). WBW is also associated with the Sustainable Development Goals (SDGs) since 2016. Every year WABA provides themes to celebrate the WBW and this year for 2021, theme for WBW is "Protect Breastfeeding: A Shared Responsibility."

The theme is associated with WBW-SDG 2030 campaign which highlights the links between breastfeeding and survival, health and wellbeing of women, children and nations.

OBJECTIVES OF WBW 2021:

1. Inform people about the importance of protecting breastfeeding
2. Anchor breastfeeding support as a vital public health responsibility.
3. Spur action on protecting breastfeeding to improve public health.
4. Engage with individuals and organizations for greater impact.

Pregnancy and lactation are an especially crucial time for working women and their families. Expectant and nursing mothers require special protection to prevent harm to their or their infants' health, and they need adequate time to give birth, to recover.



and to nurse their children.

WHAT IS BREASTFEEDING?

Breastfeeding is the feeding of an infant or young child with breast milk directly from female human breast (i.e. via lactation) not from a baby bottle or other container.

IMPORTANCE OF BREASTFEEDING

For the baby: early initiation of breastfeeding prevents hypothermia and foster bonding. Colostrum, which is the first secretion from mammary glands after giving birth is the first vaccination to the child. It is purgative (clear jaundice early), rich in vitamin A and helps intestine to mature and prevents allergy. Breast feeding gives protection against infections because breast milk contains white cells and many anti- infective factors as infants' immune system is not fully developed so they are dependent on mother's fighting cells. In many of the studies, it was evident that if a mother gets any infection then her milk contains antibodies which in turn protects baby from that infection. Furthermore, breast milk is a complete food for the child with all nutrients. Overall, breast milk helps in complete development of a child.

For the mother: early breast feeding serves a serve as a natural contraceptive method also known as Lactational amenorrhea which is the temporary postnatal infertility that occurs when a woman is amenorrhoeic (not menstruating) and fully breast feeding. Moreover, breastfeeding by mother prevents her from carcinoma of breast, ovary and osteoporosis. It helps in quick and early involution of uterus and reduces postpartum bleeding. Furthermore, it helps in restoration of original physique of the mother.

For the community: breastfeeding reduces infant morbidity and mortality. It saves time, money and conserves energy. Breast feeding is safe, sound and sustainable feeding and it is also a golden standard of infant feeding.

Breast feeding helps in cognitive development as average of 3-6 IQ points are higher in breastfed babies than formula milk fed babies which in turns helps them good development of brain in the future.

BENEFITS OF BREASTFEEDING

According to the lancet 2016, increasing breastfeeding could help in preventing the following problems:

1. 1.14% of all deaths among infants who are less than 2 years old.
2. 54% of diarrhea episodes in the infants.
3. 32% of respiratory infections in the infants.
4. 20,000 maternal lives annually from breast cancer.
5. Reduces the health expenditures for the government and families.

RESPIRATORY HYGIENE AND COVID-19

Evidences suggest that COVID-19 could transfer to baby through infectious respiratory secretions of mother, thus respiratory hygiene is required while breastfeeding and handling infant to prevent COVID-19 transmission.

NATIONAL BREASTFEEDING RECOMMENDATION (FOR COVID-19 + MOTHERS)

1. No separation of baby and to practice skin to skin contact.
2. Breastfeeding to be started within 1 hr of birth
3. Exclusive breastfeeding for six

months
4. Continue breastfeeding for 2 years
5. Maintain respiratory hygiene

Hospitals should adopt national guidelines of breastfeeding in COVID-19 disease in their health facility. Training should be provided to staff to counsel and support early start of breastfeeding and manage breastfeeding difficulties. Access to logistics like masks, water, soap etc should be made easy. Ban could be applied on free or subsidized supply, donations and promotion of infant milk substitutes.

EFFORTS COULD BE TAKEN TO PROMOTE BREASTFEEDING:

1. Counsel, support and encourage
- Counsel and support mother for breastfeeding, counseling could be done via experts, family members, husband etc
- Inform the benefits of breastfeeding, these benefits outweigh the potential risks of any infection.
- Provide psychological and mental support to mothers and family members.

Counseling makes a positive difference

Various schemes to promote maternal and child health or breastfeeding in India

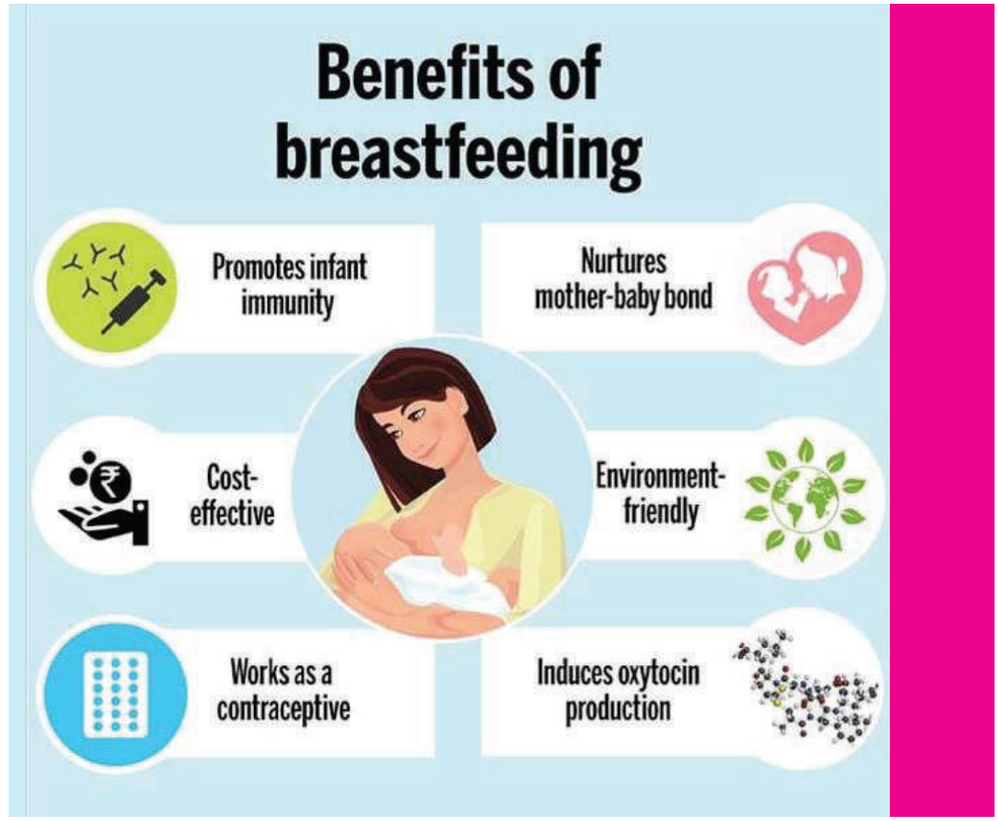
1. Dr. Muthulakshmi Reddy Maternity benefit scheme

A. Launched in 1987, first of its kind scheme in the country
B. The pregnant mother should be of age 19 years and above.
C. The pregnant women should be in below poverty line group
D. The eligible mother will receive cash benefit of 18,000/- in 5 installments for 2 deliveries.

2. Pradhan Mantri Matru Vandana Yojana

A. All pregnant women and lactating mothers, exclude those who are in regular employment with regular with the central government or the state government of PSUs.
B. All eligible pregnant women and lactating mothers who have their pregnancy on or after 01/01/2017 for first child in family.
C. Case of miscarriage/still birth/ infant mortality
D. Rs. 5,000 cash benefit will be provided to the mothers in 3 installments.

3. Janani Suraksha Yojna, 2005
4. Surakshit Matritva Aashwasan (SUMAN), 2019
5. Maternity Benefit Act, 2017
6. POSHAN abhiyan
7. Mother's Absolute Affection (MAA), 2016



A WAY AHEAD

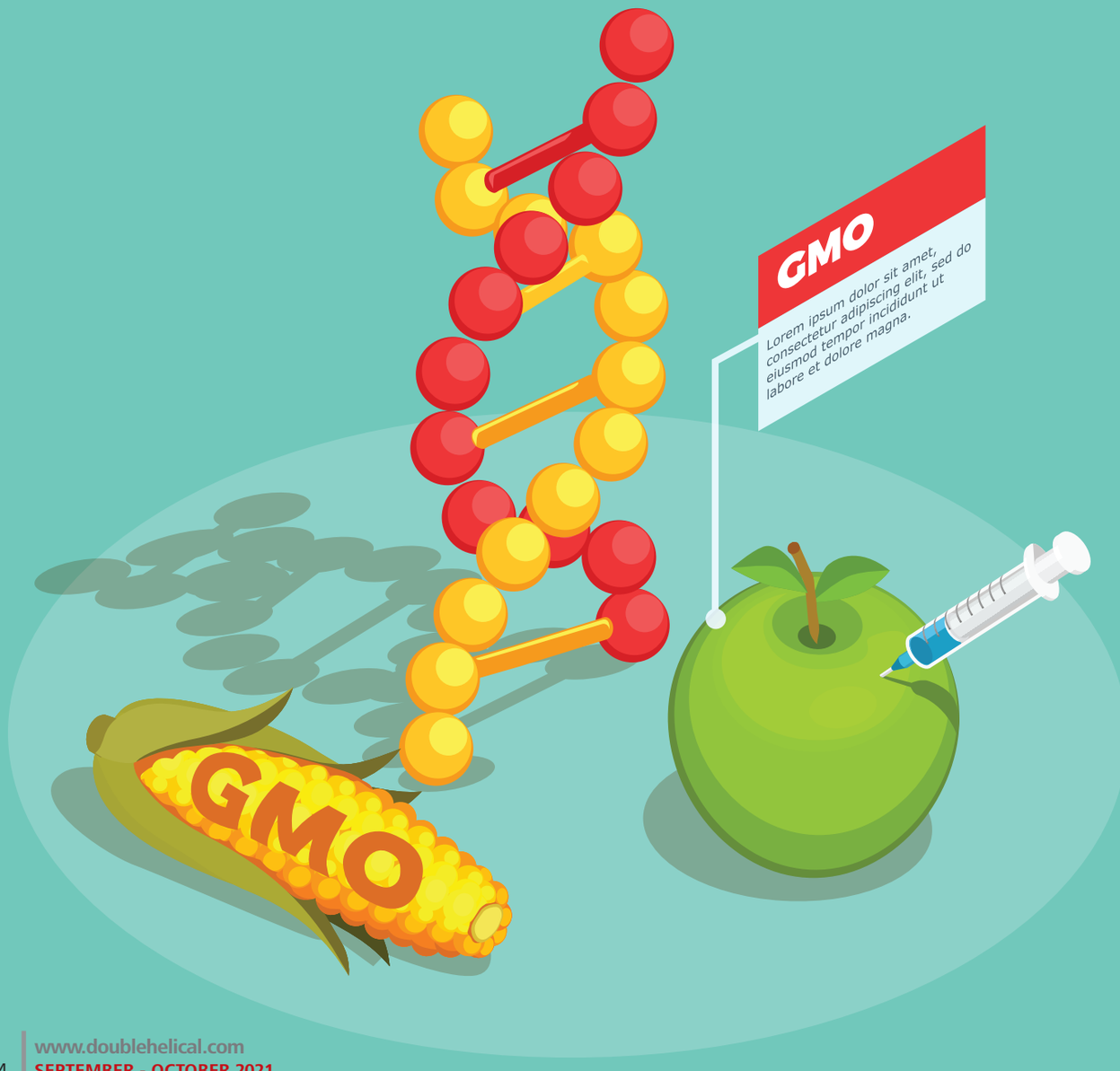
Of course there are many different demands on busy mothers, meaning that women who may to breastfeed their babies haven't always got the support to continue this. Busy working schedule, alongside the many other challenges that modern women face can mean that women don't always feel that breastfeeding their child is something that is an accessible option to them. The governments and other stakeholders work together to create a breastfeeding friendly environment, is a vital part of protecting and supporting breastfeeding. World Breastfeeding Week highlights the different roles of segments of society in protecting and supporting the vital caring act of breastfeeding.

(The authors are Professor of Excellence and President of IAPSM/ Research Assistant)

IS THE FOOD YOU BUY HEALTHY?

People deserve to know clearly and truthfully about the contents, ingredients and type of processing in the packaged foods…...…..

BY DR. ARUN GUPTA/ DR. SUNEELA GARG



Most of us are unaware that a big chunk of readymade and commonly projected as 'healthier food' we buy and eat is unhealthy. It came as a big surprise when Nestle admitted that most of its food products are unhealthy, and unsurprisingly it is trying to improve its image rather change the way food is processed, labeled or marketed. When Ronaldo pushed out the bottles of Coca Cola out of the picture frame, the news went viral and share prices of Coke dropped, alerting the brand managers to change.

Food can be either 'healthy or unhealthy. What is this healthier food industry is trying to get into?

Whether a food is healthy or unhealthy depends upon to the way it is processed, amount of salt, sugar or fat it contains and the preservatives/ additives added to it. Highly or ultra-processed foods (UPFs) are inherently harmful to human health. Commonly available and consumed foods like biscuits, cakes, chocolates, or noodles offer unhealthy levels of fats / salt or sugar and are 'ultra-processed' (means highly processed in the industry) that contributes to poor health. UPFs are usually made of more than one ingredient, made to have long shelf life, usually high in sugar, salt, or saturated fats. These food products contain ingredients we normally don't use in domestic kitchen like emulsifiers, humectants, dyes, additives, preservatives and stabilizers.

These are formulated to be addictive with minimal nutrient value of real foods. These are extensively marketed with use of 'false health claims' and 'celebrity endorsements' through television and other mass/social media. When you eat UPFs, it drives you to eat more and leads to obesity. Consumption of these foods is found to be associated with increasing type-2 diabetes, cancers, high blood pressure, cardiac disease, depression as well as frailty in the elderly population.

The Comprehensive National Nutrition Survey data revealed that among children between 5 to 19 years of age, 56% of them had cardio-metabolic risk factors (means their blood test show risk factors) , with similar prevalence in those who are believed to be undernourished. India is waiting for an epidemic of 'life style' diseases

if these alarming signals are ignored now. The country will pay heavily with a very large wave of Non Communicable Diseases (NCDs) that will attack this generation of children as they grow into adults.

Although there is no dearth of literature and data on these harmful effects of UPFs, their consumption is steadily increasing, thanks to extensive and aggressive marketing by the manufacturers. According to Euro monitor, the sale of such foods has increased from 2 kg per capita in 2005, to 6kg in 2019 and is expected to grow to 8kg in 2024. Similarly, beverages have gone up from less than 2 L in 2005 to about 8 L in 2019 and expected to grow to 10 L in 2024.

SHOULD INDIA REGULATE UPFS? YES AND HOW?

The World Health Organization's (WHO) has recommended 'cut offs' for nutrient profiling to come up with easily understandable front of pack labelling for packaged food with high fat, sugar, and/or salt (HFSS) content. The WHO cut-off points have been developed after extensive scientific review and are being applied in all parts of the world.

India needs to urgently formulate regulations and guidelines to identify and display the contents of unhealthy ingredients in ready to eat foods. The Food Safety and Standards Authority of India (FSSAI), thathas been created for laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption; is currently working on a regulation on display and labelling.

WAY FORWARD

Front of the Pack Labelling (FOPL) is one of the recommended core

interventions to mitigate this alarming situation. FOPL system means information is located on the main display panel of the food product and it is true, clear and simple; displaying that a particular nutrient is in excess of the cut-off point. That's the only honest way to protect the consumer who is the affected party here.

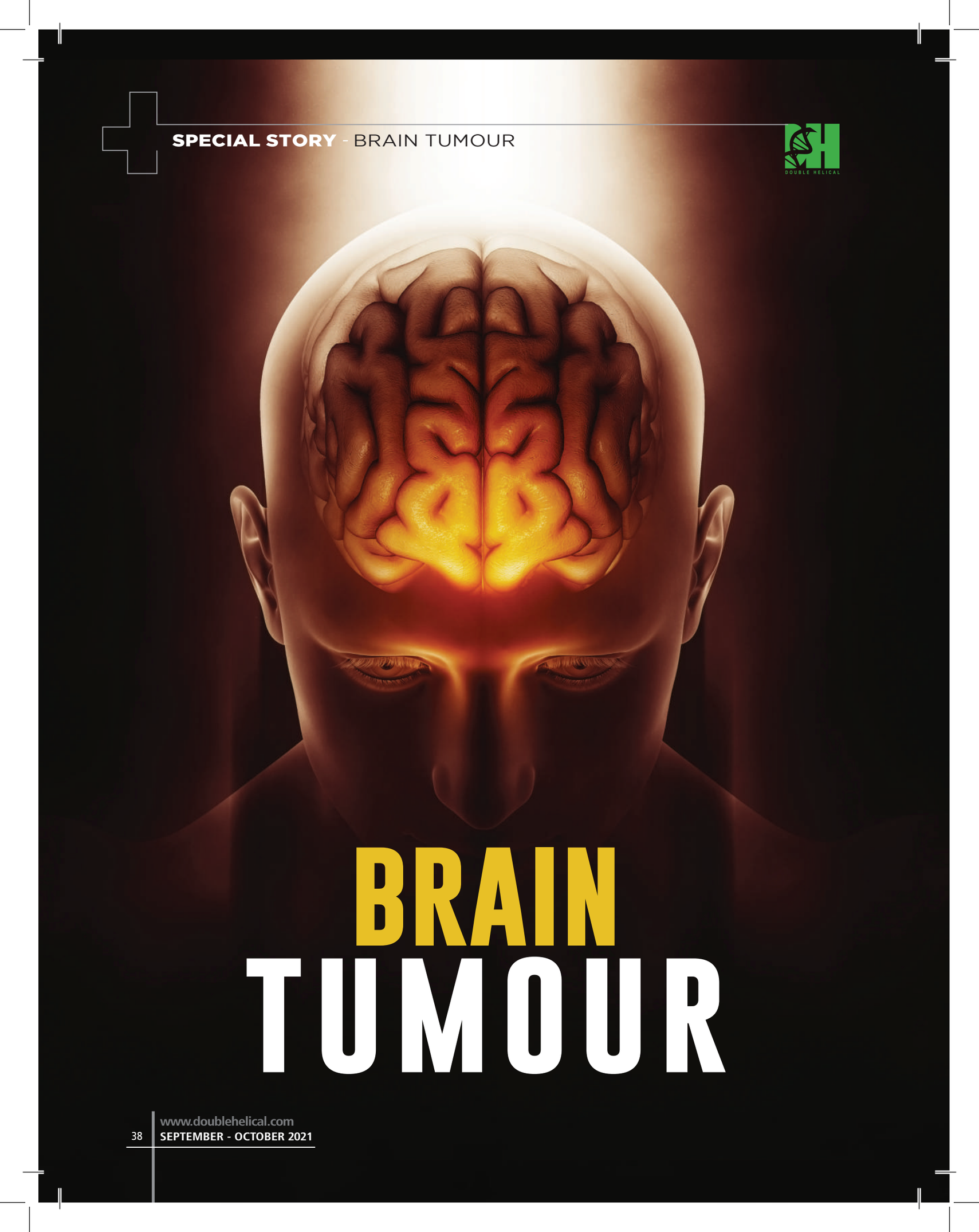
The food industry being part of the policy process is a problem and situation can described as serious conflicts of interests. Industry is trying its entire means to block or circumvent the regulations to sell and market "healthier" options. It is under consideration of FSSAI and we hope cut-offs are being proposed for different categories must be in line with what WHO has proposed based on extensive scientific analysis and globally accepted in all regions of the world. Food industry usually puts the onus on the consumers for their "food preferences" for the increasing consumption of unhealthy foods but refuses to provide TRUE information of content of unhealthy ingredients in their products.

It's time that we demand consumer preference. The consumer deserves to be the king and know whether the product she/he is buying could be harmful to health and then make an informed decision to consume it or not; using their preferences.

To conclude, it is well known that UPFs are harmful to the health of people and need to be regulated. While key steps to regulate such foods are in process, it is expected that decisions are based on science and not arbitrary. This is the minimum we can do to prevent the epidemic of non-communicable diseases knocking on our doors.

I would, therefore, urge the lawmakers, Ministry of Health, the Parliamentary Standing Committee on Health, and PMO to intervene. This issue needs informed debate and guidance to the existing process. And it should free from conflicts of interests. Too much is at stake on this issue of national public health.

Dr Arun Gupta senior paediatrician, convener of the Nutrition Advocacy in Public Interest (NAPi), central coordinator of Breastfeeding Promotion Network of India, and South Asia coordinator of International Baby Food Action Network(IBFAN)- a 1998 Right Livelihood Laureate.
Dr. Suneela Garg is Professor of Excellence, Dept of Community Medicine, MAMC as well as National President IAPSM & OMAG.



BRAIN TUMOUR

Early symptoms can be subtle or obvious, depending on the type, size, and location of the tumour. However, just because a person has these problems, doesn't mean he or she has a brain tumour. Early symptoms of brain tumours can be vague or dramatic, depending on the tumour size, type, and location. No one knows what causes brain tumours; there are only a few known risk factors that have been established by research…..…..

BY DR ARUN SHARMA

The persistent signs and symptoms like headaches that gradually become more frequent and severe, unexplained nausea or vomiting, vision problems like blurred vision, double vision or loss of peripheral vision, gradual loss of sensation or movement in an arm or a leg, difficulty with balance in walking or sitting, speech difficulties and confusion in everyday matters are all possible symptoms of a brain tumour.

As per report, approximately 30,000 new primary brain tumours are diagnosed each year in India. Age is also a risk factor. The incidence of brain tumours is rising steadily in India. No age group is spared from brain tumours. Abnormal and uncontrolled growth of cells in brain is called a brain tumour. Although such growths are popularly called brain tumours, not all brain tumours are cancerous. Cancer is a term reserved for malignant tumours.

How quickly a brain tumour grows can vary greatly. The growth rate as well as location of a brain tumour determines how it will affect the function of your nervous system. Brain tumour treatment options depend on the type of brain tumour the patient has, as well as its size and location.

TYPES OF BRAIN TUMOURS

There are two main types of brain tumours- primary and secondary/ metastatic. Primary tumours originate in the brain. Metastatic tumours originate elsewhere in the body and reach the brain and grow there. Malignant tumours can grow and spread aggressively, overpowering healthy cells by taking their space, blood, and nutrients. They can also spread to distant parts of the body.

Benign tumours are non cancerous and malignant tumours are cancerous.

Many different types of brain tumours exist. Primary brain tumours have many types. Each gets its name from the type of cells involved. Among them, Gliomas arise from glial cells and include astrocytomas, ependymoma, glioblastomas, oligoastrocytomas and

vessels or certain glands.

Meningiomas arises from the membranes that surround the brain and spinal cord (meninges). Most meningiomas are noncancerous. Acoustic schwannomas are benign tumours that develop from the nerves that control balance and hearing. Pituitary adenomas are mostly benign tumours that develop in the pituitary gland at the base of the brain. These tumours can affect the pituitary hormones with effects throughout the body. Medulloblastomas are the most common cancerous brain tumours in children. A medulloblastoma starts in the posterior part of the brain and has a tendency to spread through the spinal fluid. These tumours are less common in adults, but they do occur.

Primitive Neuroectodermal tumours (PNETs) are rare, cancerous tumours that start in embryonic (foetal) cells in the brain. They can occur anywhere in the brain. Craniopharyngiomas are rare, noncancerous tumours that originate near the brain's pituitary gland, which secretes hormones that control many body functions. As the craniopharyngioma grows slowly, it can affect the pituitary gland and other structures near the brain.

Secondary (metastatic) brain tumours are tumours that result from cancer that starts elsewhere in the body and then spreads to the brain. Secondary brain tumours most often occur in people who have a history of cancer. But in rare cases, a metastatic brain tumour may be the first sign of cancer that began elsewhere in your body. Any cancer can spread to the brain, but the most common types include breast cancer, colon cancer, kidney cancer, lung cancer and melanoma.

CAUSES AND RISK FACTORS

What causes brain tumours? Despite extensive research, the brain tumour

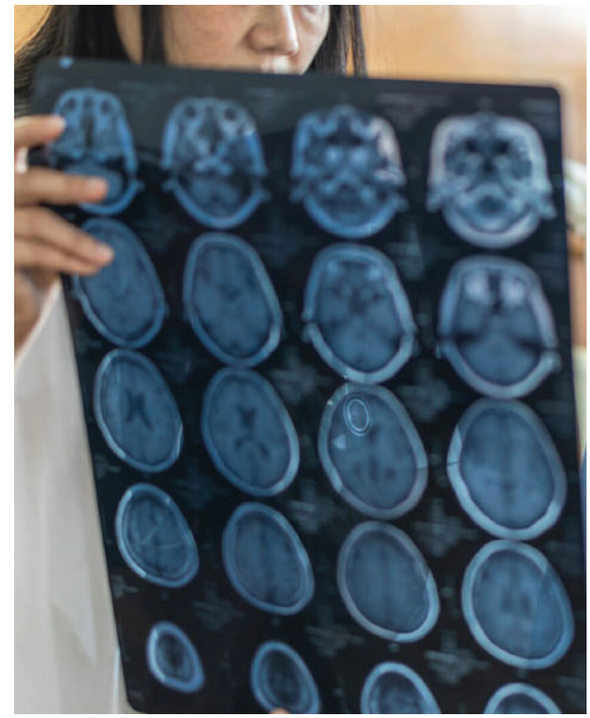
causes are not clear. Tumours are caused by uncontrolled and unwanted growth of cells. This is caused by a mutation in the DNA. What exactly triggers this and why at a particular location in the body, is not known. Some risk factors have been identified that may increase the risk of brain tumour.

Age: The risk of a brain tumour increases as one ages. Brain tumours are most common in older adults. However, a brain tumour can occur at any age. And certain types of brain tumours occur almost exclusively in children.

Radiation: Exposure to ionizing radiation from radiation therapy, CT scans and X rays increases the risk. More common forms of radiation, such as electromagnetic fields from power lines and radiofrequency radiation from cell phones and microwave ovens have not been proved to be linked to brain tumours.

Exposure to certain chemicals on a regular basis increases the risk of developing a brain tumour. Such chemicals include cadmium, arsenic, nickel compounds, tobacco smoke and many more.

Family history: A small portion of brain tumours occur in people with a family history of brain tumours or a family history of genetic syndromes that increase the risk of brain tumours.



SIGNS AND SYMPTOMS

The signs and symptoms of a brain tumour vary greatly and depend on the brain tumour's size, location and rate of growth. General signs and symptoms caused by brain tumours may include new onset or change in pattern of headaches, headaches that gradually become more frequent and more severe, unexplained nausea or vomiting, vision problems, such as blurred vision, double vision or loss of peripheral vision, gradual loss of sensation or movement in an arm or a leg, difficulty with balance, tingling on one side of body, tremors, speech difficulties, changes in hearing or smell, confusion in everyday matters, memory loss, personality or behaviour changes, seizures, especially in someone who doesn't have a history of seizures and hearing problems, increased sleepiness, drowsiness and loss of consciousness.

Some gender specific symptoms are also seen. Nipple discharge in non

nursing women, menstrual abnormalities, excessive body hair.

Diagnosis of Brain Tumour

Neurological Examination: The physician clinically examines you for strength of hands and legs, coordination, speech, hearing, vision and other indicators in the your complaints.

Imaging: If it is suspected that the patient can have a brain tumour, the doctor may recommend a number of tests and procedures. Magnetic resonance imaging (MRI) usually with contrast, is commonly used to help diagnose brain tumours. MR Spectroscopy uses the chemical changes in the brain tumour and further corroborates the diagnosis. Other imaging tests may include computerised tomography (CT) scan and positron emission tomography (PET). PET is helpful in diagnosing the tumours in other parts of the body as well.

Angiography: It can be MR or CT based or Digital Substraction Angiography. In this procedure, a fluorescent dye is injected into the bloodstream. The dye on reaching the brain helps the doctor in knowing the blood supply of tumours and engulfment / proximity of large brain vessels to the tumour.

Biopsy : A tiny piece of tumour is removed through a minimally invasive surgery or stereotactic procedure and then sent for histopathological examination to determine whether it is benign or malignant. This information is critical to establish a diagnosis and prognosis and, most importantly, in guiding treatment.

It is suspected that the brain tumour may be a result of cancer that has spread from another area of the body, the doctor may recommend tests and procedures to determine where the cancer originated. One example might be a CT scan of the chest to look for signs of lung cancer. PET is the gold standard to look for tumours in the whole body in a single investigation.

TREATMENT

Treatment for a brain tumour depends on the type, size and location of the tumour. Surgery: Brain surgery is a complicated procedure and requires utmost attention and care during the surgery. If the brain tumour is located in a place that makes it accessible for an operation, the neurosurgeon will operate to remove as much of the brain tumour as is safely possible. In some cases, tumours are small and easy to separate from surrounding brain tissue, which makes complete surgical removal possible. In other cases, tumours can't be separated from surrounding tissue or they're located near sensitive / eloquent areas in your brain, making surgery risky. In these situations only the part of the tumour is removed which is safe.

Neurosurgeons can perform tumor resections with the help of brain neuronavigation more precisely, perform less-invasive procedures, and help improve clinical outcomes. The neuronavigation systems enable surgeons to visualize the anatomy of a patient's brain during surgery and precisely track the location of their surgical instruments in relation to the anatomy.

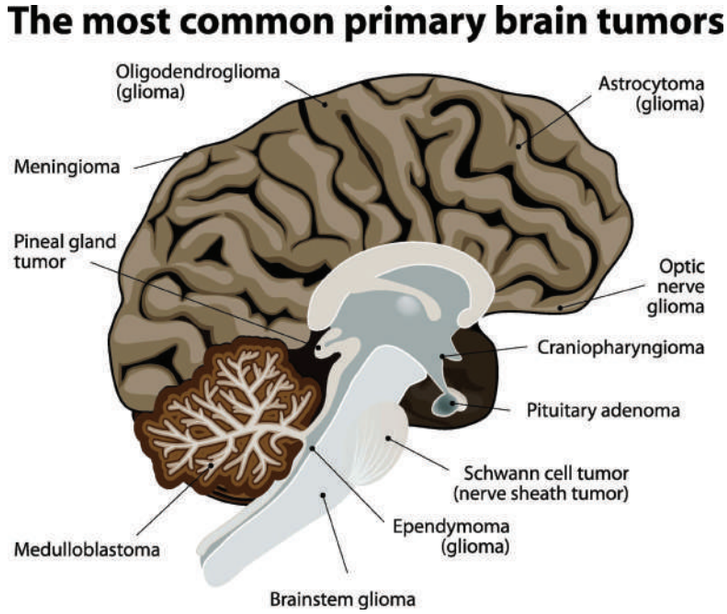
When the diagnosis of a deep seated tumour is to be confirmed histologically, stereotaxic biopsy is performed. It is a computer guided procedure, which is safe and rarely causes neurological deficit. Radiotherapy & chemotherapy is started according to the obtained histological diagnosis.

Awake craniotomy: This is done when a tumour is located in an eloquent / sensitive area. The patient is kept awake while the tumour is being excised. This avoids or minimises damage to important areas of brain controlling speech and power of limbs.

The advancement of medical technology with the availability of high speed drills, microscope, CUSA, intraoperative ultrasound and stereotactic neuronavigation have further made brain tumour surgery safe. If a brain tumour is diagnosed, relieving symptoms remain an important part of your care and treatment. Today, most tumours can be removed safely with microsurgical techniques in a manner that maximizes tumour removal and minimizes harm to the patients. Even removing a portion of the brain tumour may help reduce your signs and symptoms. Surgery to remove a brain tumour carries risks such as infection, bleeding, brain swelling, seizures, memory loss, coma, weakness of hands or legs . Other risks may depend on the part of the brain where your tumour is located. For instance, surgery on a tumour near nerves that connect to your eyes may carry a risk of vision loss.

RADIATION THERAPY

Radiation therapy uses high-energy beams, such as X-rays or proton beams to kill tumour cells. External beam



radiation therapy (EBRT) directs high energy beams at a tumour from outside the body. Brachytherapy places radioactive sources inside or next to the tumour to kill cancer cells and shrink tumours. It uses a highly localised dose of radiation.

External beam radiation can focus just on the area of your brain where the tumour is located, or it can be applied to your entire brain (whole-brain radiation). Whole-brain radiation is most often used to treat cancer that has spread to the brain from some other part of the body. Side effects of radiation therapy depend on the type and dose of radiation you receive. Common side effects during or immediately following radiation include fatigue, headaches and scalp irritation.

Proton therapy is a type of EBRT that uses protons rather than X rays. It is used for tumours when less radiation is needed because of the location.

RADIOSURGERY

Stereotactic radiosurgery is a highly precise form of radiation therapy. Multiple beams of radiation are converged and focused form of radiation treatment to kill the tumour cells in a very small area. Each beam of radiation isn't particularly powerful, but the point where all the beams meet at the brain tumour receives a very large dose of radiation to kill the tumour cells. There are different types of technology used in radiosurgery to deliver radiation to treat brain tumours, such as Gamma Knife / Cyberknife / Linear Accelerator. Radio surgery is usually performed on an outpatient basis and referred as a one day treatment. Some large tumours may require more than one session.

Radiosurgery is sometimes advised as the primary modality of treatment in some tumours, which are deep seated or located close to vital structures in the brain

CHEMOTHERAPY

Chemotherapy uses drugs to kill tumour cells. Chemotherapy drugs can be taken orally in a pill form or injected into a vein (intravenous). A chemotherapy regimen usually consists of a specific number of cycles given over a fixed period of time. The goal is to destroy tumour cells remaining after surgery or slow down a residual tumour's growth. Chemotherapy side effects depend on the type and dose of drugs you receive. Chemotherapy can cause weakness, nausea, vomiting and hair loss.

TARGETED DRUG THERAPY

This treatment targets the tumour's specific genes, proteins or the tissue environment that contributes to a tumour's growth and survival. Bevacizumab and Larotrectinib are the two types of targeted therapies that are used for brain tumours.

REHABILITATION AFTER TREATMENT

A brain tumour and it's treatment causes physical derangements as well as emotional and social problems and financial hardships. Their management requires supportive / palliative care. Since brain tumours can develop in parts of the brain that control motor skills, speech, vision and thinking, rehabilitation may be a necessary part of recovery. Physical therapy can help you regain lost motor skills or muscle strength. Occupational therapy can help you get back to your normal daily activities, including work, after a brain tumour surgery. Speech therapy for speech difficulties can help if you have difficulty in speaking. Young patients may require psychological counselling as brain tumours may leave a deep impact on the daily activities of the person and their family caregivers. Emotional and spiritual support, yoga and relaxation techniques should be a part of the rehabilitation programme. A strong will power and positive attitude go a long way in overcoming the psychological trauma caused by the brain tumour.

Last but not the least, a large number of brain tumours can be excised safely and the patient may lead a normal life.

(The author is well known Neuro Surgeon, Indian Spine and Injury Centre, New Delhi)

WORLD SIGHT DAY

On World Sight Day, WHO is calling on countries in the South-East Asia Region and across the world to ensure access for all to quality eye care services…...

BY DR. POONAM KHETRAPAL SINGH

Globally, at least 2.2 billion people have vision impairment. At least 1 billion people have a vision impairment that could have been prevented or is yet to be addressed. Vision impairment affects people of all ages, but especially those over the age of 50. Despite comprising around a quarter of the world's population, the Region accounts for 30% of global blindness and 32% of visual impairment.

Ageing populations and increased prevalence of non communicable diseases (NCDs) such as diabetes could

exacerbate eye health issues in the years to come. To avoid that outcome, WHO continues to support all countries of the Region to achieve access for all to quality eye care services, and to advocate for society-wide buy-in to the "4 Ps" of life-long eye health – Prevent, Protect, Preserve and Prioritize.

The Region has in recent years accelerated action to strengthen the quality and reach of eye care services, in line with its Flagship Priorities on achieving universal health coverage (UHC), preventing and controlling NCDs, and eliminating neglected tropical diseases and other diseases on

the verge of elimination. In 2018 Nepal eliminated trachoma, followed by Myanmar in 2020. Bhutan has achieved eye care coverage of 99.7% and eye care coverage among school children is 99.5%. Eyeglasses are provided free of charge to all who need them. Four countries of the Region – Bhutan, India, Maldives and Thailand – have piloted WHO's Revised Eye Care Service Assessment Tool, which focuses on integrating eye care programmes into services at the primary, secondary and tertiary levels. New WHO guidance on strengthening diagnosis and treatment of diabetic retinopathy continues to be rolled out, alongside Region-wide efforts to increase access to assistive technology. In November 2021, a three-day ministerial meeting will be held to strengthen high-level buy-in to achieve access for all to quality eye care services, with a focus on leaving no one behind.

In all countries of the Region, accelerated action is needed, and now. In May 2021, at the Seventy-fourth World Health Assembly, Member States adopted two new global targets for eye care by 2030: first, a 40% increase in effective coverage of refractive errors; and second, a 30% increase in effective coverage of cataract surgery. The targets are intended not only to increase global eye care coverage, but also to strengthen the quality of the eye care services delivered.

Importantly, the targets are aligned with and reflect the global and regional pursuit of UHC and the need to integrate eye care programmes with existing services, especially at the primary level. Cataract surgery coverage is a strong indicator of eye care service provision. At present, it shows marked variation by income. By strengthening eye care services at the primary level, all countries of the Region can preserve or bring sight to millions of people, achieving rapid and sustained progress towards our Flagship Priorities and the 2030 targets.

We can all take action. Many eye diseases can be prevented by eating a healthy and balanced diet, and by partaking in regular and adequate physical activity. These and other healthy habits help maintain a healthy weight, control obesity, and prevent diabetes, all of which can impact eye health. It is equally important to protect eyes from workplace accidents, severe sunlight, harmful radiation and prolonged exposure to screens. For every 20 minutes of screen time, look at something 20 or more feet away for 20 seconds. Regular and comprehensive eye examinations carried out at recommended intervals are essential for eyesight preservation. Maintaining eye health is a key part of healthy ageing, ensuring all older people can be and do what they value. Together, we must prioritize eye health at all stages of life, not only for ourselves, but for our family and friends, and the wider community.

The Region must sustain and accelerate momentum. Vision impairment and blindness can have major and long-lasting effects on all aspects of life, including school and work opportunities, and the ability to access public services. They compromise social and economic development and impact the life-outcomes of hundreds of millions of people in the Region, and billions of people globally. Amid the COVID-19 response, countries of the Region are committed to achieving a social and economic recovery that is fairer, healthier, more resilient and sustainable, towards which increased access to quality eye care services will contribute. On World Sight Day, WHO reiterates its commitment to support all countries of the Region to achieve access for all to quality eye care services – a vision that is our duty to achieve.

(The author is Regional Director for South-East Asia, WHO)

PUBLIC HEALTH CHAMPION

This is a milestone in Indian political history as well as in world, and Indians are immensely proud of Prime Minister Narendra Modi. He on many occasions in public has been always referred to as a Champion in many aspects. There is no surprise that this eminently respected politician has secured a special place in the heart of the citizens…...

BY DR C S PANDAV

Being serving in the field of Public Health for over 40 years, I firmly believe that PM Modi is the "Public Health Champion, not only of the Century but the Millennium". Narendra Modi has a lot of followers and admirers in India as well as in other nations. This is because he travels in different countries throughout the year to discuss India's diplomatic, financial and friendly relations with other countries.PM Narendra Modi has completed over 20 continuous years in

service of humanity and Maa Bharat with dedication, vision and selflessness, and he is the only democratically elected world leader to serve the people continuously for 20 years since 2001.

The evidence to the statement can be considered from the initiation of many historic revolutionary programs such as Swachh Bharat Mission, Poshan Abhiyaan, Pradhan Mantri Bhartiya Janaushadhi Pariyojna (PMBJP), Ayushman Bharat, PM Rashtriya Dialysis Yojna, Mission Indradhanush and National Digital Health Mission.

We cannot consider Covid19 alone, but all the public health issues which have been challenging India in all the last few decades. PM Modi willingness to stick with a bold course of action, an unconventional strategy, a unique development roadmap, and a distinctive marketing campaign is leaving an exclusive mark not only to India but to the rest of the World. He is indeed a true leader who does not tell us what to do, rather,he shows us **'how it should be done, and how it must be done.'**

PM Narendra Modi has contributed more than half of the Word Health Organzation's global target to provide healthcare coverage by bringing 550 million people under the Ayushmaan Bharat Scheme. The World Health Organisation (WHO) says it will bring 1 billion people under healthcare coverage. PM Narendra Modi has already delivered that to 550 millionpeople through the Ayushman Bharat Scheme. It means Modi ji has contributed to over 50 per cent of the world's agenda single-handedly here in India which is a phenomenal achievement.

The Prime Minister has tried to help the common man with good quality and affordable medicines through these outlets. In nearly 700 districts, through 6,700 Jan Aushadhi outlets , medicines worth around Rs 22 billion were provided to people at a cost of just Rs 3.9 billion, in 2019-20.

In 472 districts, 825 dialysis centres have been opened through which 5,80,000 people have benefited, and the poor people are being provided free dialysis through 4,920 machines throughout the country.Around 20,000 Health and Wellness centres have already been opened and 25,000 more are to be opened this year.

In 2014, when the BJP came to power at the Centre, only 100 medicines were in the national list of essential medicines whose prices are determined by the government. This number has now been raised to 350 at present. A committee has also been set up so that such medicines that are important for many people are brought under the list. Due to various initiatives and schemes of the Modi government, the average monthly expenditure of households on medicines has come down from up to Rs 8,000 to around Rs 1,200.

The Director-General of the World Health Organization Tedros Adhanom

Ghebreyesus had taken to Twitter to praise PM Narendra Modi. He praised PM Narendra Modi for announcing relief package and help during Coronavirus Crisis to tackle Covid-19 Pandemic. The DG-WHO Tedros Adhanom Ghebreyesus on Twitter had written in praise of PM Modi stating his appreciation to the Prime Minister for announcing a $24 billion package to support Flag of India's vulnerable populations during COVID-19 crisis, which included free food rations for 800Million disadvantaged people, cash transfers to 204Million poor women and free cooking gas for 80Million households.

The Union Finance & Corporate Affairs Minister also announced Rs 1.70 Trillion relief package under Pradhan Mantri Garib Kalyan Yojana for the poor to help them fight the battle against Corona Virus. The government intended at reaching out to the poorest of the poor, with food and money in hands, so that they do not face difficulties in buying essential supplies and meeting essential needs.

PM MODI AND PUBLIC HEALTH

PM Narendra Modi has catapulted public health issues into the political arena like no other predecessor of his in the recent past. The previous United Progressive Alliance government spread the National Rural Health Mission (NRHM) deep and kicked off the National Urban Health Mission (NUHM) over its ten years, along with several other health sector interventions. But as is his ability and style, Modi has made more out of his government's modest steps in the sector than UPA even tried to in ten years.

Modi first injected a public health issue in his political campaigns when taking credit for setting prices for stents used in heart surgeries during his Uttar Pradesh assembly election campaign. His claiming credit and the strong reaction from a section of the hurt industry led many to forget that the decision had come after courts pushed government to the brink on it and not entirely of its own volition.

PM Modi had made several references to how he addressed public health concerns in his Independence Day speech from Red Fort in his 2016 speeches. He launched the enhanced cover of Rs 100,000 health insurance, the Indradhanush immunisation programme and put hospital records online.

Recently, after more than two years of jostling within the government, the Cabinet had finally approved the National Health Policy. In hitting the compromise between those within demanding a strong role for the private sector and others demanding a more regulated space, the policy held back from detailing the terms of engagement between the government and private players – the key bone of contention. The government's low levels of investment in the health sector – by all global standards – are seen as a key reason for proliferation of the private sector and high out-of-pocket expenses by citizens.

It should not be missed that the BJP did not explicitly commit to any target of increasing government expenditure on public health in its 2014 manifesto. It did promise a "National Health Assurance Mission" and improving public healthcare facilities, though the former lends itself to greater dependence on insurance-based models that the Modi government has pursued in the past three years.

In comparison, after the UPA government failed to enhance the Budget spend on health substantially over several years to meet its public commitments, the Congress in its manifesto had promised that health expenditure would be increased to 3% of GDP and that they would provide universal and quality healthcare for all Indians (including free medicines).

When NDA swept into power it promised to up the amp on UPA's promised medicine shops to sell low-

cost generic medicines. The UPA had miserably failed to meet its target of a shop in each district (630) which was noted in a parliamentary committee report. The NDA government upped the targets by several orders of magnitude as it has done in many schemes.

One way to look at the NDA's achievements is to calculate success by measuring achievements against set targets. Yet another could be to assess how much these initiatives count for collectively in altering the nature of healthcare in India – the jury is still out on that. There is now very little or almost no doubt that the subject of public health has been brought more centre-stage in India's political arena, quite like PM Modi had done with the idea of cleanliness and hygiene.

PM Narendra Modi has launched the National Digital Health Mission (NDHM), while addressing the nation from Red Fort on India's 74th Independence Day. Modi said that the initiative which is completely technology based will revolutionise the health sector in India.

Every Indian under the mission would get a Health Identity card containing all relevant information about his/her medical conditions and treatments, tests etc. Whenever a person visits a doctor or a pharmacy, or a lab, all the detail will be registered in this health card. Ranging from doctor appointment to the medication prescribed, medical tests, when were they done, every bit of detail will be available in this health profile.

The National Digital Health Blueprint of the mission was prepared by a Health Ministry panel to create a framework for the national health stack proposed in 2018 by the National Institution for Transforming India (NITI) Aayog, the government think tank.

Recently approved by the finance committee, in the missions, unlike Aadhaar, the data will reside at individual hospital servers in a federated architecture. Citizen will own his/ her health data and would require consent to share data. All the basic registries of patients/hospital/medical professionals that enable data sharing will be owned by a government entity.

The vision of National Digital Health Mission(NDHM) is to create a national digital health ecosystem which provides timely and efficient access to inclusive, affordable, and safe healthcare to all citizens. NDHM will significantly improve the efficiency, effectiveness, and transparency of health service delivery and will be a major stride towards achievement of the United Nations Sustainable Development Goal 3.8 of Universal Health Coverage, including financial risk protection,

which is a phenomenal step by the government lead by PM Narendra Modi.

The mission aims to liberate citizens from the challenges of finding the right doctors, seeking appointment with them, payment of consultation fee, making several rounds of hospitals for prescription sheets, among several others and will empower all Indians with the correct information and sources enabling them to take an informed decision to avail the best possible healthcare.

National Health Authority (NHA), the attached office of the Ministry of Health & Family Welfare and the apex Central Government agency responsible for the implementation of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, has been given the mandate by the Government of India to design, build, roll-out and implement the NDHM in the country.The NDHM is a holistic, voluntary healthcare programme that will reduce the existing gap between various stakeholders such as doctors, hospitals and other healthcare providers, pharmacies, insurance companies, and citizens by bringing them together and connecting them in an integrated digital health infrastructure.

The NDHM comprises six key building blocks or digital systems namely HealthID, Digi-Doctor, Health Facility Registry, Personal Health Records, e-Pharmacy and Telemedicine. The telemedicine will enable access to timely, safe and affordable healthcare through a 'citizen-centric' approach. All of these digital products except e-Pharmacy and Telemedicine have been deployed and are up and running. The health is balanced when all three doshas or bio energy and agni or metabolic process are balanced, and excretions are in proper order. When atman or soul, the senses, manah or intellect are in harmony with internal peace, svaastha or optimal health is achieved.

If we happen to realises and compare this with the definition of health that the World Health Organization uses: **'health is a complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity'**, we can state strongly as to how the principles of Ayurveda are aligned with the Eight dimensions of Holistic Health propagated by the WHO.

Today, Ayurveda is relevant globally because of its holistic and comprehensive approach to health. Unfortunately, the real potential of Ayurveda is untapped because of many reasons. Most are importantly because of inadequate scientific scrutiny and concerns regarding standards and quality.

If these issues are addressed properly, Ayurveda can provide solutions to many health problems. India can be a leader in making affordable, holistic health care available to the world. And this is something very importantly PM Modi is fully committed about since taking over as the Prime Minister. The government under PM Modi is fully committed to the promotion of Ayurveda and traditional systems of medicine. As soon as this government was formed, the Department of AYUSH was upgraded to the status of a full Ministry in the Government of India.

The National AYUSH Mission has been started to promote AYUSH medical systems through cost effective AYUSH services, strengthening of educational systems, facilitating the enforcement of quality control of Ayurveda, Siddha and Unani & Homoeopathy drugs and sustainable availability of raw-materials. For quality control of AYUSH drugs, steps are being taken to bring regulatory amendments for effective enforcement and strengthening the regulatory framework at the Central and State levels.

(The author is Padamshree Awardee and Former Professor and HOD, Centre for Community Medicine, AIIMS, New Delhi)

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TIME TO QUIT TOBACCO

World health organization launched a yearlong campaign for World No Tobacco Day 2021 (WNTD) with the theme of "commit to quit" on 8th December 2020. The Covid-19 pandemic motivated millions of people to quit tobacco consumption. However, only 30% of the population around the globe has quality tobacco cessation services available to them…….

BY DR.SUNEELA GARG

Welcoming robust tobacco cessation policies, increasing access to cessation services, and raising awareness about the tobacco industry's tactics are some of the pertinent components of this campaign. This campaign will focus on the smokers who motivated themselves to quit tobacco consumption. Coronavirus disease 2019 (COVID-19) is an infectious disease which is caused by novel Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), this virus mainly affects the lungs. Nicotine which is available in the form of tobacco along with other harmful chemicals is associated with many fatal diseases such as emphysema, chronic obstructive pulmonary diseases, risk of stroke, etc and it is an immunosuppressant that acts through peripheral and central mechanisms. Smokers are more likely to have severe symptoms of Covid-19 or else they are more likely to admit to the hospital with mechanical ventilator support compared to non-smokers.

The prevalence of Covid-19 amongst smokers was compared in the severe and non-severe cases of Covid-19. The results showed that the percentage of current and formers smokers were higher in severe cases as compared to non-severe cases. However, the association between smoking tobacco and the severity of Covid-19 should not be limited to smoking tobacco because smokeless tobacco could also be a potential source of transmitting the virus and worsening health. Smokeless tobacco (SLT) is consumed in more than 140 countries. Consumption of smokeless tobacco leads to increased salivation in the mouth results in spitting at public places unbridling the series of saliva droplets to the commuters. Furthermore, smokeless tobacco is placed in the mouth using fingers or hands.

Thus, leads to the increased chances of Covid-19 transmission from hands to mouth. Angiotensin-Converting Enzyme (ACE2) receptors are the neurotransmitters that facilitate the SARS-CoV-2 entry into the host cells. Studies have shown that ACE2 receptors are present in the oral epithelial cells of the tongue,

buccal mucosa, gingiva. Moreover, consumption of SLT increases the expression of ACE2 receptors which reveals that the addiction of SLT can increase the progression of COVID-19 by nicotine-induced ACE2 receptors.

An opportunity to quit tobacco consumption

Many of the tobacco consumers believed that they are at a higher risk of Covid-19 and severe complications associated with it which resulted in increased attempts to quit tobacco consumption by them. In a study conducted recently showed that every third of the smokers were willing to quit tobacco due to a higher risk

of contracting Covid-19 as a smoker. A study conducted in China compared the smokers between the pre-Covid-19 era and after the Covid-19 outbreak, results showed that smokers reduced their cigarette consumption after the COVID-19 outbreak because they felt a higher level of satisfaction with their current health after reducing or quitting tobacco. However, a study conducted in Bangladesh to explore the change in tobacco use pattern during the pandemic showed that there was an increase in consumption of smokeless tobacco in the rural participants and the probable reason was stress and anxiety during COVID-19 due to inadequate healthcare facilities, less or no information regarding COVID-19. Another study that discovered the tobacco consumption pattern in five countries (Italy, India, South Africa, the United Kingdom, and the United States) during Covid-19 showed an increased frequency of tobacco consumption during the Covid-19 pandemic which is a cause of concern in turning pandemic into the opportunity of quitting tobacco.

An encouraging aspect of a pandemic was the public health interventions such as lockdown which slightly helped in quitting tobacco consumption. A study-based result showed that almost two-thirds of tobacco users whether smokers or smokeless tobacco consumers, reported a reduction in tobacco use during the lockdown in India. Unavailability and increased prices of tobacco products for an extended period during the lockdown in India led tobacco consumers to take long-term decisions to quit tobacco. The Italian population was surveyed during the lockdown period. Observations showed that there was decreased consumption of tobacco during the time which included many factors such as lack of daily routine in smokers related to consumption of

cigarettes, lack of socialization, spending more time with family members and children reduced the consumption of tobacco to respect the family members.

The social role of smoking was explained in a study conducted in Italy and showed that smoking amongst youth ended up due to social isolation because of the lockdown and there were successful quit attempts by the youth.

Changes in the physical environment, social distancing, wearing of mask in the public, restriction in the movement of people are some of the factors responsible which led tobacco consumers to quit tobacco attempts. Furthermore, higher rates of enrolment to tobacco cessation services were found statically, after the pandemic.

As recommended by WHO, the promotion of proven tobacco cessation services is necessary to help tobacco users during this period. Thus, the availability of tobacco cessation services to tobacco consumers is important during the pandemic. Awareness of the risk association of tobacco and Covid-19 amongst tobacco users should be increased. Along with awareness, toll-free tobacco quit line numbers, mobile-based cessation applications or cessation programs should be provided to tobacco consumers, motivating them to quit tobacco. Furthermore, mental health issues rising due to this pandemic and leading people to increase their tobacco consumption should be addressed and studied. Adequate measures have to be initiated such as easy accessibility of mental health counsellors along with tobacco cessation services to the people.

A way ahead and measures

The world has been fighting against the global tobacco epidemic and a report released by WHO (Report on Global Tobacco Epidemic 2019) stated that progress has been made in evidence-based and cost-effective tobacco control strategies over the last decades. Moreover, tobacco cessation services, banning of public smoking in some of the countries, health warnings on tobacco packets, tobacco quit helpline numbers, etc.

CONCLUSION

There is a relation between COVID-19 disease severity and tobacco use. The extent of awareness regarding the association of COVID-19 and tobacco should be increased. Tobacco use could be a potential risk factor in contracting COVID-19 as nicotine which is present in tobacco is an immune suppressant and linked to many cardio and pulmonary manifestations. Awareness programs such as "commit to quit" which is initiated by WHO on World No Tobacco Day 2021 should be promoted and more robust ideas have to be provided to prevent the consumption of tobacco and containing the spread of Covid-19.

The author is Professor of Excellence, President, IAPSM, Advisor, ICMR and HOD, Department of Community Medicine, Maulana Azad Medical College, New Delhi

HEARING LOSS: A SERIOUS THREAT

Education of children with hearing impairment in India is just a little over a hundred years old. After Independence, improvements were seen with the establishment of many new schools in the 1950s and many programs based on the new technology came up in the 1960s……

BY DR A K AGARWAL

The sixties saw the establishment of the All India Institute of Speech and Hearing in Mysore where facilities for diagnosis of hearing impairment in infants and young children were available. At present, over 500 schools for the hearing impaired children are available in the country.

The Government established and administers some schools whereas the NGOs run many others. Most of the schools, still residential, admit children aged 5 years and above who spend the entire school year in the hostels; they go home only during summer vacation. Provision of vocational courses and sheltered workshops facilitates spending almost the entire lifetime of some students in these schools. Two colleges for the Deaf, one in Chennai, Tamil Nadu affiliated to the University of Madras and another in Valakam, Kerala conduct degree courses in Commerce and Art subjects; a third program is under the Indira Gandhi National Open University, New Delhi. Educating children with multiple disabilities is a difficult task. In India training programs to train teachers to help children who are 'deaf-blind' has only recently begun.

Globally, over 5% of world's population (more than 360 million population), have disabling hearing loss, according to new global estimates on prevalence released by the WHO, for International Ear Care Day. Of the total, 91% of these are adults and 9% are children.

Disabling hearing loss refers to hearing loss greater than 40 decibels (dB) in the better hearing ear in adults and a hearing loss greater than 30 dB in the better hearing ear in children. The majority of people with disabling hearing loss live in low- and middle-income countries. The prevalence of disabling hearing loss in children is greatest in South Asia, Asia Pacific and Sub-Saharan Africa.

Overall prevalence of disabling hearing loss in children all over the world is 1.7%. A person who is not able to hear as well as someone with normal hearing – hearing thresholds of 25 dB or better in both ears – is said to have hearing loss. Prevalence of hearing loss in South Asia in pediatric age group is 2.4%

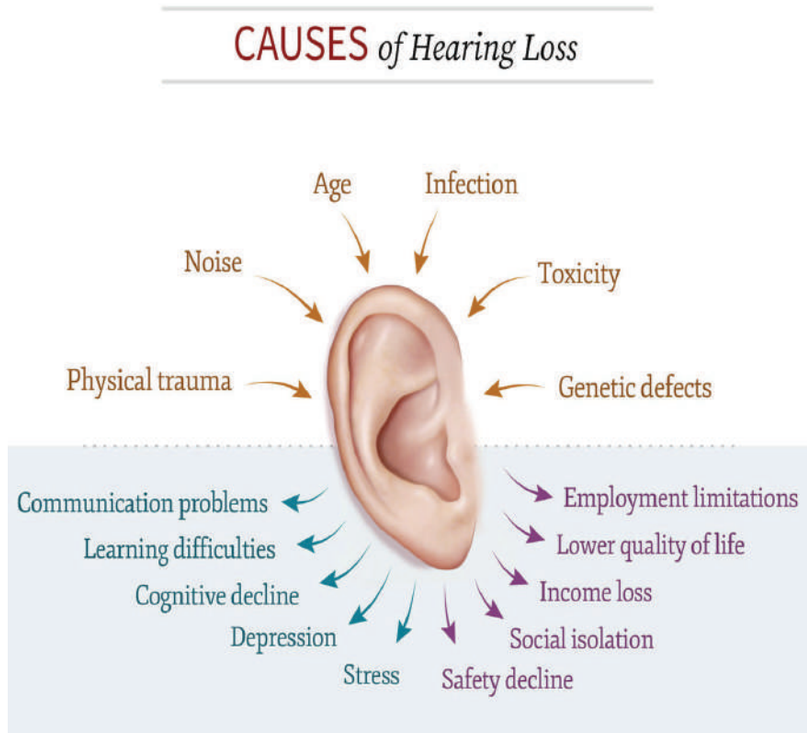
Prevalence of Disabling Hearing Loss among men and women in South Asia are 9.5% and 7%, prevalence in South Asian children is 2.4%. . Approx. 0.5-5 of every 1000 infants are born with or develop in early childhood disabling hearing loss. The prevalence of disabling hearing loss increases with age, i.e. prevalence in children is 1.7%, in adults aged 15 years or more, it is around 7%, rapidly increasing to almost one in three in adults older than 65 years. In most regions, prevalence in children decreases linearly as parent's literacy rate increases. In adults 65 years and

older, prevalence decreases exponentially as income increases

CONSEQUENCES OF HEARING IMPAIRMENT

Consequences of hearing impairment will depend on the ear/s involved, the degree and the type of hearing loss and the age of onset. Due to distortion of sounds, differentiation of environmental sounds, including speech, is difficult; making sounds louder does not improve the clarity or quality of sound. Similarly, recruitment, which is an abnormal growth in loudness, a characteristic of damage to the inner ear, makes it difficult to tolerate loud sounds. For children with hearing impairment, congenital or acquired before development of speech and language, normal speech development is interfered with. With unilateral hearing impairment also, there is difficulty in localizing sound, reduced speech discrimination.

Consequences include inability to interpret speech sounds, often producing a reduced ability to communicate, delay in language acquisition, economic and educational disadvantage, social isolation and stigmatization. Communication and behavioral skills are influenced by a child's ability to hear. Hearing loss affects a child's social interaction; memory, comprehension and vocabulary development; emotional development, academic performance, speech perception and production. Children suffer from self-described feelings of isolation, exclusion, embarrassment, annoyance, confusion and helplessness. Barriers for seeking ear care services like social stigma related to diseases, lack of awareness, shortage of human resources, quacks treating wrongly, late identification of the problems, etc need to be managed effectively. Hence, it is pertinent to review the current scenario of otological



morbidities in Indian children and suggest possible interventions to fight against all odds.

Fifty percent of hearing loss is preventable through public health actions. Therefore through appropriate public health measures, current burden of ear morbidities can be halved. Therefore for this, we need to know the strengths and weaknesses of our health care system

PUBLIC HEALTH MEASURES

From time to time, public and private sector enterprises plan at both, small and large scale to help people with hearing impairment. But still, the services available and implementation status of actions to combat ear disorders is in naïve stage.

In 2006, World Health Organization (WHO) released a new set of training manuals aimed at equipping health care workers in developing countries with simple and cost-effective methods to reduce deafness and hearing problems through actions at the primary level of health care. The Primary Ear and Hearing Care Training Resource addresses the urgent need for action to prevent and manage ear diseases and hearing impairment. They are designed to be useful to a wide range of people, from village health workers to more experienced health care personnel. The manuals can also be used to help communities understand common causes of deafness and hearing impairment and ways to prevent and/or treat the conditions. Vaccination against childhood diseases that can cause hearing impairment, good ear hygiene, appropriate use of medication, and avoidance of excessive noise are examples of simple ways of preventing deafness and hearing impairment.

We need to make constructive efforts towards early diagnosis and treatment of hearing disorders. The issues in early identification to be addressed are (i) population/location of screening, (ii) technique/tools for screening, (iii) human resources for screening, (iv)cost, (v) challenges in screening, and (vi) intervention for the identified.

Few projects have been started with the aim of early diagnosis and treatment of hearing disorders. Under the Project of Prevention of Deafness undertaken at All India Institute of Speech and Hearing, Mysore, funded by the Ministry of Health and Family Welfare, Government of India, Yathiraj et al. (2002) reported screening of 28,750 infants over a period of five years.

The Ministry of Health and Family Welfare, Government of India in 2006, launched the pilot phase of the National Programme in Prevention and Control of Deafness. One of the objectives is early identification, diagnosis and treatment of hearing loss. The services/facilities available for early intervention in the country are covered under the following: (i) Medical intervention, (ii) Aids, appliances and cochlear implant, and (iii) Auditory and speech-language training.

Educating children with multiple disabilities is a difficult task. In India training programs to train teachers to help children who are 'deaf-blind' has only recently begun.

REHABILITATION

The earlier the parent/family accept the fact of impairment and follow a well-planned rehabilitation program under professional supervision, the better are the chances for the child and the family to lead a more normal life. Parental attitudes towards disability include inter alia acceptance, rejection, indifference and overprotection. Some parents work towards the development of the child, but feel the need to shelter and protect because of the disability. Overprotection denies the child the opportunity to achieve his potential in various areas of development.

Rehabilitation of persons with disabilities has gained momentum in India during the last decade with several states as well as the Union Government launching programs for their benefit. Community Based Rehabilitation and Integrated Child Development schemes are two major thrust areas in this endeavor.

On account of the multidimensional facets of hearing impairment, R & D activities call for in depth studies, both inter and multi-disciplinary. This calls for synchronized development in the core discipline as well as in allied disciplines. Achievements in technology, bio-technology, information technology, and digital technology have ushered in developments in accessibility to digital programmable hearing aids, cochlear implant surgery, related rehabilitation technology and auditory genetic diagnosis. Exploration of indigenous technology and techniques is crucial to bring benefits of technological advances within the reach of the economically weakest among the disabled to meet their needs, whether for identification/diagnosis or habilitation/rehabilitation.

(The author is well known ENT Specialist, Innovation, Education & Clinical Excellence, Apollo Hospital, New Delhi)

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