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A COMPLETE HEALTH JOURNAL

DOUBLE HELICAL

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COVID-19 IN CHILDREN

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DOUBLE HELICAL

A COMPLETE HEALTH MAGAZINE

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May-June, 2021

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The worst phase of Covid-19 is over and days are getting better……

Dear Readers,

Thanks a lot for your kind support. We are humbled to place on record our infinite gratitude for your uninterrupted, unwavering support to us in bringing out edition after edition on pertinent health issues.

When we thought that the worst was over, second Covid-19 wave has once again hit India hard. We are again seeing the doctors and the healthcare workers getting sick in large numbers. Even fully vaccinated doctors are testing positive for Covid-19.

While the second wave of Covid-19 in India is still facing challenging but with proper management and spreading awareness the days are getting better. You may say we have once again defeated the Corona virus.

As you know that US has a population of 328.2 million, as opposed to India's population of 1.36 billion. USA had 599,863 Covid-19 related deaths. USA has one of the best healthcare infrastructures, USA has resources, has money. Yet, how many of you know USA underwent immense struggle during COVID surge?

How many of you know there was an acute shortage of medications, PPE kits- including face masks, even syringes and needles used in hospitals/healthcare settings? (We continue to have shortages of certain medications). How many of you know there was no room to store bodies in the morgues, the funeral homes were backed up? How many of you know there was and there is shortage of healthcare personnel? How many of you know many people lost jobs? No, there was no extra money that was paid to prescribers to treat Covid-19 patients. The shifts were long and excruciating at times. Most of us didn't get to see our kids for days at a time. Many a time healthcare workers weren't able to pee for hours together- because they were that swamped.

Most of you are clueless about it. Why? Because, the media in the US was a little more responsible with the reporting. People, regardless of their political ideology or religious ideology came together as one, to help each other. They didn't make it a Republican Vs Democrat issue. Communities pitched in, they understood the limitations of the government, the healthcare sectors which included pharmaceutical industries.

Healthcare workers weren't beaten up because someone's loved ones died, healthcare workers weren't thrown out of their apartment complexes because residents feared these workers would spread COVID. Hospital properties were not destroyed because someone's loved one died. People were thankful, they tried to boost our morale by sending us random thank you notes, memorabilia, treats. Many corporates sponsored food for healthcare providers.

We didn't have people black marketing essential medicines, oxygen cylinders. We didn't and don't have people trying to make an extra buck at the cost of other people's lives. There is still some integrity, humanity and compassion remaining in general public in the USA. Did the government ask communities to do it? Did the healthcare workers ask for any of it? No. It was completely voluntary, people realized the importance of working together responsibly to keep America safe.

Interestingly, these days the hypocritical debate initiated by Yog Guru Baba Ramdev about Ayurveda and modern system of Medicine(allopathy) is lamentable. As IMA(Indian Medical Association) claims that Baba Ramdev seems to be levitating in midair without a leg to stand on, so to say, as he is himself not qualified in either of the two. He is a Yoga teacher and not an Ayurvedic Doctor and it is surprising that no one from that council or a government body responsible for Ayurveda has pointed this out.

One of the areas that Yoga excels is the peace of mind one attains through the practice of meditation; Ramdev Yadav does not seem to believe even in this part of Yoga. His mind is as far from calm and peaceful as one can possibly imagine and his acidic comments and vitriolic approach is a bad advertisement for Meditation and Yoga, the subject he learnt and now teaches.

Ignorance is the absence of knowledge. Stupidity is the presence of knowledge and the refusal to use it. This is often invoked in Science in a positive way. A true scientist never minds saying "i do not know". These three words start him/her on a voyage of discovery that leads to progress. the ever dominant urge to ask WHY dominates scientific thought and temper . Had it not been this the world would still be grappling with scurvy, small pox, chicken pox, polio and a myriad other diseases that a non scientific mind would not even have learnt about leave alone find a treatment for.

Everyone should be safe and take all possible precautions while attending to your patients. The situation is grim and the infectivity much higher than the last time. All must be vaccinated, if they still have not. In this grave pandemic situation we have to take precaution and maintain social distancing. A disease free doctor can serve thousands of patients. So your safety is in your hands.

Let's know about current issue of Double Helical there is more such interesting and thought-provoking stuff to savour. So, happy reading!

Thanks and regards

Amresh K Tiwary,
Editor-in-Chief

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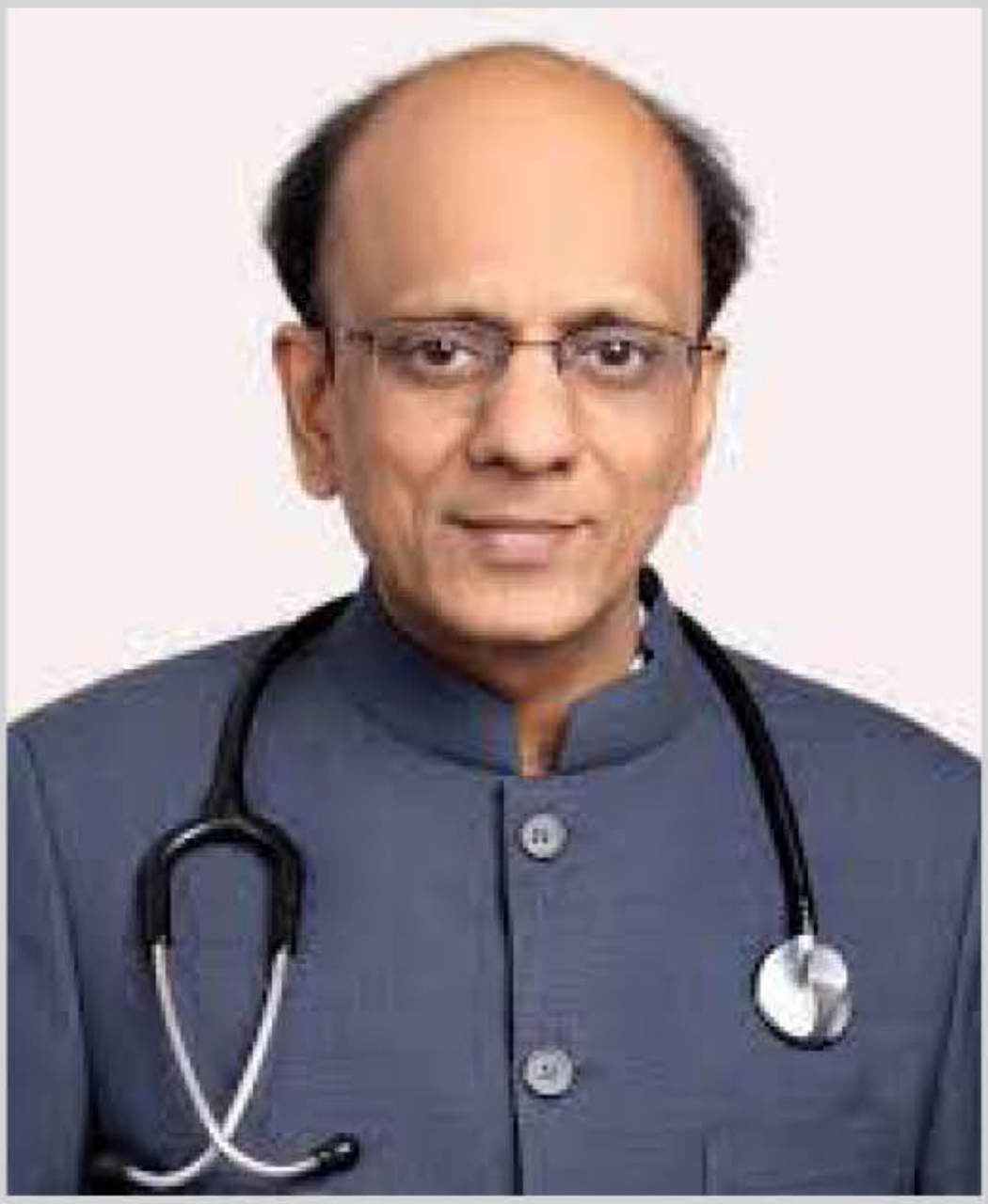
Tribute to great soul
Dr K K Aggarwal



BY TEAM DOUBLE HELICAL

A renowned physician, cardiologist, spiritual writer and motivational speaker, Dr KK Aggarwal was undergoing treatment for a Covid-19 infection and died on 17th May 2021 in New Delhi while receiving treatment for Covid-19.We heartfelt condolences on his demise. He is now a pillar in the temple of our God in the heavenly abode to rest in eternal peace.

Dr K K Aggarwal Padmashri, Dr B C Roy National Awardee, National Science Communication Awardee and Limca Book of Records Holder . He was the founding Trustee and President of Heart Care Foundation of India, a leading national non-profit organization working in the field of healthcare in India. In addition to this, he was National President of the Indian Medical Association.

A doctor and social worker par excellence, Dr Aggarwal was the only doctor in the country to have received three prestigious National awards namely the Padma Shri, Dr. BC Roy and the DST National Science and Communication Award. He was posted Professor of Bioethics, SRM Medical College Hospital and Research Centre, Kattankulathur , senior physician, Cardiologist and Dean Board of Medical Education, Moolchand

NAMS lost
Dr K K Sharma

Dr. K.K. Sharma, an eminent academician, researcher, and a notable achiever amongst the medical fraternity and having unparalleled humane heart, died due to Covid-19 recently.

He worked as Chairman, Academic Activities and CME Co-ordinator, National Academy of Medical Sciences (India), New Delhi and Professor-Emeritus in Sharda University, Greater Noida, had more than 40 years experience of teaching Pharmacology

Dr Saroj Chooramani Gopal, President, National Academy of Medical Sciences, said, "Dr Sharma was like a pillar of the academy. With his passing away not only the academy has tremendous loss but it has been a severe blow to the whole medical fraternity. I recall how happily we were working on 21st April in the academy performing pooja on the 60th Diamond Jubilee Day. Dr. Sharma was so jubilant, full of energy, was encouraging each and every staff of the Academy boosting every one moral h with a commitment for enhancing the overall activities of the Academy putting heart and mind together."

Medcity, Member Ethics Committee of the Medical Council of India, Chairman Ethics Committee of the Delhi Medical Council, Chairman of the Legal Cell Indian Academy of Echocardiography.

In the past, Dr Aggarwal has served as the Chairman of the IMA Academy of Medical Specialties, National Honorary Finance Secretary of the Indian Medical Association, Director IMA AKN Sinha Institute, President of the Delhi Medical Association, President of the IMA New Delhi Branch (three times) and the Chairman of the Delhi Chapter of the International Medical Sciences Academy. He has also served as a visiting Professor of Clinical Research at DIPSAR.

An advocator of preventive and universal healthcare, Dr Aggarwal has pioneered leading health initiatives in the country such as starting clot-dissolving therapy for acute heart attacks in 1984 and bringing the technique of Colour Doppler Echocardiography to North India in 1988. He has also been instrumental in conceptualizing and organizing unique consumer driven health awareness platforms such as The Perfect Health Mela and the Run for your Heart annual run. In recognition of both these initiatives, the Government of India released National Postal Commemorative Stamps (INR 6.50 & 1) respectively. In 2012 he organized the first ever mega telemedicine camp at Ajmer and again the government of Rajasthan ear marked the event by releasing a postal cancellation stamp.

Dr K K Aggarwal (Krishan Kumar Aggarwal was born on 5 September 1958. He did his MBBS from Nagpur University in 1979[and obtained an MD from the Mahatma Gandhi Institute of Medical Sciences in 1983. He was a senior consultant at Moolchand Medcity, New Delhi, India, until 2017.

During his career, Aggarwal served as the Honorary Secretary General of the Indian Medical Association (IMA), Chairman of the IMA Academy of Medical Specialties, National Honorary Finance Secretary of the IMA, director of the IMA's AKN Sinha Institute, president of the Delhi Medical Association, President of the IMA's New Delhi branch.

He taught at the Delhi Institute of Pharmaceutical Sciences and Research as a visiting professor. He was the national president of the Indian Medical Association and chief editor of IJCP Group. He was appointed the president of "Confederation of Medical Association of Asia and Oceania" (CMAAO) in September 2019. He also served as the Vice Chairman of World Fellowship of Religion.

Dr Ketan Desai, President, World Medical Association and Former President of MCI, said, "With utmost grief and heavy heart I condole the sad, unfortunate and tragic demise of my personal friend and a towering personality in the field of medicine Dr. K. K. Agarwal, who was a rare blend of qualities of head and heart. By virtue of his commitment, devotion and dedication he had made a unique mark for himself. It was his passion for profession and unstinted dedication for the society that he rose to adorn the high offices of Honorary Secretary General and National President of the Indian Medical Association and also President of CMAAO."

Dr Desai, said, "His contributions to the medical association at international flora have been monumental and have etched benchmarks, which are exemplary and emulative in nature. In him IMA has lost a valiant warrior, profession has lost a devoted professional and society has lost an excellent human being. Frankly speaking I have lost forever a dependable personal friend of all weathers and seasons. The void so created by his loss would remain unfilled for all times to come. I pray Almighty God to bestow the eternal peace to the departed soul and courage to his family to sustain this monumental loss."

Dr. Sharma was born on 16th April 1945 at DIBAI, Distt. BulandShahar, U.P in a religious family carrying high values. His father placed high value for education he imparted higher education to all of his children three sons and two daughters. Dr Sharma and his wife had first dose vaccination for Covid on 23rd April, 2021. After his Medical education in Pharmacology from Agra University, Dr Sharma served at Medical College, Jhansi and University College of Medical Sciences and GTB Hospital, New Delhi. He superannuated in 2010 as Professor and Head, where he also served as the Principal.

Dr A K Agarwal, Medical Advisor (Innovation), Apollo Hospital, New Delhi said, "He looked to be youngest among all of the people around. I still remember the day in one of the Council Meeting when it was pointed out that would he be able to take the responsibility what was given to him. It is so unfortunate to recall that such a lively man was so suddenly taken with a serious turn on account of a preventive action.

Dr Saroj Chooramani Gopal, said, "I fall short of words in expressing about Dr. K.K. Sharma in totality. He was from my alma mater the S.N. Medical College, Agra being two years junior. However, it is only in the NAMS that after becoming President of the academy I came to know what a great man he was, academician, thorough teacher at heart, prolific writer, editor publisher of pharmacology book, beloved by students across the country and world, great at art of conflict management, fatherly attitude towards staff of the academy, good administrator, extremely humane, ever ready to help others, very knowledgeable of the rules and the regulations of the academy and stood fearlessly with truth what he thought was right for the academy."

WHO provides over 340 MT of essential supplies to countries

To support countries across South-East Asia Region respond to the rapid surge in COVID-19 cases, WHO has provided over 340 MT of essential medical supplies and medicines, and continues to mobilize more to fill critical gaps.

According to Dr Poonam Khetrapal Singh, Regional Director, WHO South-East Asia, thousands of oxygen concentrators, testing kits, hospital beds, tents and personal protective equipment are among critical supplies that are being shipped to countries and rushed to areas where they are needed the most. In India, which in recent weeks accounted for a large proportion of global cases, essential supplies have reached 26 States and Union Territories, within days of a major consignment of medical equipment landing in New Delhi.

"These supplies will help meet immediate needs while countries make long term arrangements," the Regional Director said. Last week, 4000 oxygen concentrators, more than 120 tents, 400 medical beds for mobile hospitals, 1.2 million respirator masks, and 650,000 disposable sampling kits were flown into Delhi.

Dr Khetrapal Singh, said, "Most recently, WHO has rushed 60 metric tons of much needed diarrheal disease kits, and (personal protective equipment) PPEs to Bangladesh. The rapid deployment of these life-saving medicines and medical supplies is vital to WHO's ongoing health emergency response efforts."

Earlier, WHO provided 43 metric tons of supplies including PPEs, diarrheal disease kits, tents, pulse oximeter, infrared thermometers and field deployment kits to Timor-Leste to respond to pandemic as well as floods that hit the island country last month.

Jointly assessing needs and gaps with countries in the Region, WHO is bringing in more supplies in the coming weeks for Nepal, Bhutan, Maldives and Sri Lanka.

"Collective efforts are needed to strengthen pandemic response. WHO is committed to working with all countries in the Region and supporting them in the current surge and beyond," the Regional Director, said.

With support from partners and donors, supplies worth USD 15 million have been provided to countries in the current surge. Since early 2020, WHO has been working alongside governments to respond to the pandemic. Assisting with surveillance and monitoring, repurposing and deploying WHO staff wherever needed and most recently preparing roll out COVID-19 vaccination. Providing funding and assistance with supplies such as PPEs, laboratory reagents and other equipment continue to be among key areas of WHO support.

"This is a battle that cannot be fought alone. To curtail the pandemic, we must work together and step up to help each other within and outside our borders," said the Regional Director.

Zydus Cadila's EBIDTA crosses mark of Rs. 30 billion

Announcing the results for the fourth quarter and full year ended March 31st , 2021, Zydus Cadila registered Total Income from operations of Rs. 3,847 crores, for the fourth quarter, up by 3% on a y-o-y basis from Rs. 3,752 crores registered during corresponding period of the previous year.

Earnings before Interest, Depreciation and Tax (EBIDTA) grew by 8% on a yo-y basis to Rs. 855 crores during the fourth quarter. Net Profit was up by 73% on a y-o-y basis to Rs. 679 crores during the fourth quarter. For the year ended March 31st , 2021, on a consolidated basis, the Company registered the Total Income from operations of Rs. 15,102 crores, up by 6 percent.

The Company achieved new milestones in terms of EBIDTA and Net Profit in the year. The EBIDTA for the year of Rs. 3,341 crores registered 20% growth over the previous year. Net Profit for the year was Rs. 2,134 crores. The Company's business in India geography which comprises Human health formulations business, Consumer wellness business and Animal health business posted a strong growth during the quarter as it grew by 18% on a y-o-y basis and registered revenues of Rs. 1,772 crores.

Human health formulations business in India grew by 15% and Consumer wellness business grew by 22% on a y-o-y basis during the quarter. US formulations business registered revenues of Rs. 1,509 crores during the quarter. Strengthening its regulatory pipeline, the Company filed 22 additional ANDAs during the year with the USFDA, taking the cumulative filings to 412. The Company received 35 ANDAs approvals during the year, taking the total to 317 product approvals. Continuing with its relentless efforts on the battling COVID with diagnostics, therapeutics and vaccines, the company launched Virafin (Pegylated Interferon alpha-2b (PegIFN) to treat moderate infection in adult COVID-19 patients during the quarter. ZyCoV-D, the Company's plasmid DNA vaccine is at an advanced stage of Phase III clinical trials and the data is expected to be submitted to the regulators in June.

Making headway in its innovation programme, the company completed the patient enrolment in DREAM-ND and DREAM-D Phase III trials of Desidustat in India, an oral small molecule hypoxia-inducible factor prolyl hydroxylase (HIF-PH) inhibitor for treatment of anaemia in patients with Chronic Kidney Disease (CKD) during the year. Furthering its strides to bridge unmet healthcare needs, the company also received the approval for Saroglitazar Mg, for the treatment of Non Alcoholic Fatty Liver Disease (NAFLD).

With this Saroglitazar Mg is now indicated for both NAFLD and Non-Alcoholic Steatohepatitis (NASH). Saroglitazar Mg which is also evaluated for the treatment of Primary Biliary Cholangitis (PBC), was given the 'Fast Track Designation' also received the Orphan Drug Designation from the USFDA. During the year, the Company made a presentation of Saroglitazar in NAFLD at the American Association for the study of Liver Diseases (AASLD), Boston. Zydus seeks DCGI approval to undertake clinical trials for Covid-19 infection ZRC-3308 (Covimabs) is a cocktail of two anti-SARS-CoV-2 monoclonal antibodies to combat mild COVID 19. Designed to have a long half-life providing protection for a long period of time. It has reduced immune- effect or functions to minimize potential tissue damaging side effects of virus neutralizing monoclonal antibodies thereby providing a safer product.

Cocktail of two mAbs based products are better equipped to deal with variants than single mAb based products In animal studies, ZRC-3308 reduced the SARS-CoV-2-mediated damage to the lungs Zydus Cadila, an innovation-driven pharmaceutical company today announced that its biological therapy ZRC-3308, a cocktail of two SARS-CoV-2-neutralizing monoclonal antibodies (mAbs) can emerge as one of the main treatments for mild COVID 19. SARS-CoV-2 spike protein targeted, neutralizing monoclonal antibody based treatments have received emergency use authorization in mild COVID 19 in the US, Europe and in India because they significantly reduced viral load in mild patients and their rate of hospitalization.

Two of these products are cocktail based products comprising of two mAbs binding to two different epitopes on the spike protein of SARS-CoV-2 virus. Cocktail of 2 mAbs based products are better equipped to deal with variants than single mAb based products which have a tendency of losing their efficacy with rapidly generating variants. Zydus is the only Indian company to have developed a neutralizing monoclonal antibody based cocktail for the treatment of COVID 19. Speaking on the development.

IMPACT OF SECOND TREATMENT AN

WAVE OF COVID-19: ND PREVENTION

The second wave of Coronavirus has started to show macabre appearance. It is more vulnerable in India especially. People are struggling to save lives of their loved ones.Hospitals and crematoriums are overwhelmed with Covid-19 patients…. ….

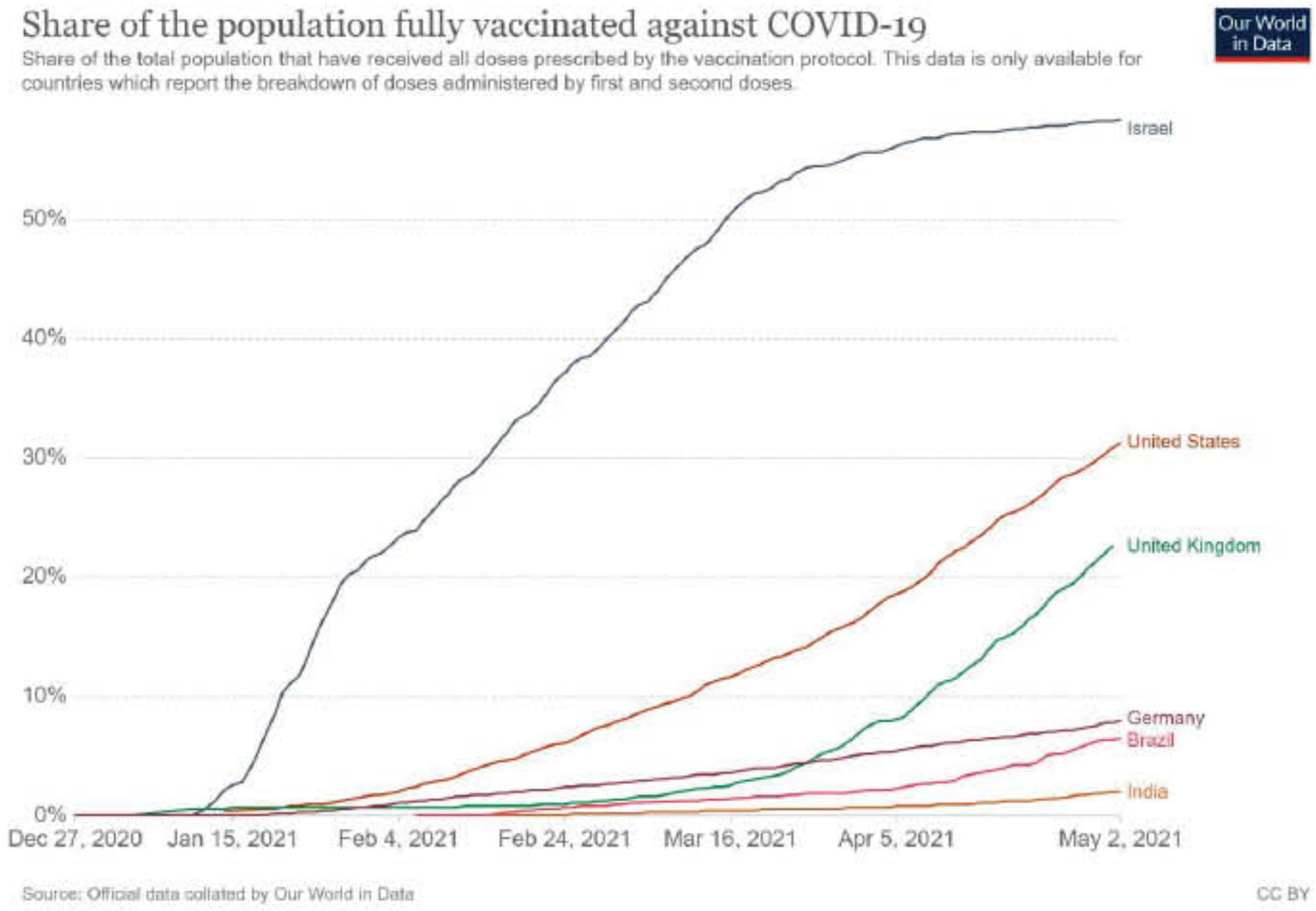
BY DR N K PRASANNA / S K VARSHNEY

The situation is getting more and more difficult day by day as well as the shortage of oxygen is also creating panic among citizens. Worryingly, the situation remains challenging and at the same time, it is a matter of concern that the number of young people getting effected and even meeting fatality is rather high. Moreover, not following Covid-19 appropriate behavior could be one of the reasons behind the case surge in youngsters.

The symptoms now are way different than the first wave of the pandemic and that might create a sudden increase in the daily case toll. Although fever is not necessarily a reliable indicator of infection, there are numerous most common signs in young people right now and need immediate treatment. The majority of the youngsters are clueless about their conditions. This further complicates the task of stabilizing them. Doctors discover intermittent episodes sometimes patients they already have a heart problem or kidney disease as they get admitted and start testing their vitals. On a few occasions, the patients may have omitted records, but a significant portion of the younger patients are unaware of their true health status.

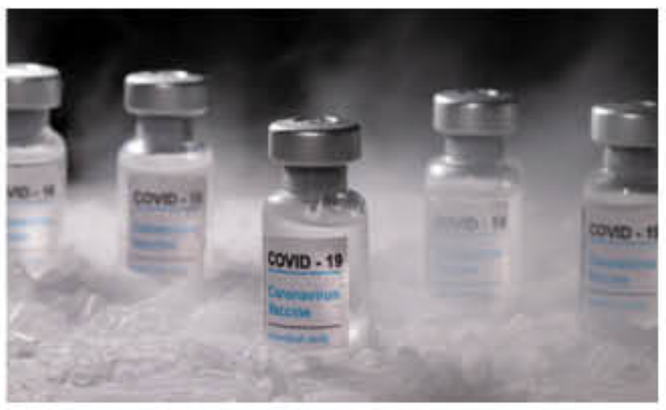
COVID-19 is a respiratory disease, but it can also affect other areas of the body. In addition to impacting the lungs, it can cause stomach problems. Just one of the 41 patients admitted to a hospital in Wuhan, China, reported diarrhea as a symptom of

Sanjeev Kumar Varshney



COVID, while 98 percent reported fever, according to a Lancet study published early last year. This pushed gastrointestinal problems to the bottom of the list of symptoms. However, the Centre for Disease Control and Prevention (CDC) identified diarrhea, nausea, and vomiting as key symptoms of COVID in June 2020. According to a study published in the lancet, it is presumed that one out of every five COVID patients develops a disturbed stomach as a result of diarrhea or abdominal pain and 80 percent of COVID-19 patients in the world have lost their appetite. However, 10% of COVID-19 patients experience nausea and diarrhea two days before experiencing a fever.

According to current studies, 53% of COVID-19 patients experience at least one gastrointestinal symptom during their disease, with nausea and vomiting being the most frequent ones reported by younger patients in India. Not only gastrointestinal symptoms are more frequent but other symptoms including dry mouth, nausea, loss of appetite, diarrhea & loose stools, red, runny eyes, and headache are also most commonly diagnosed in younger COVID-19 interacted ones.



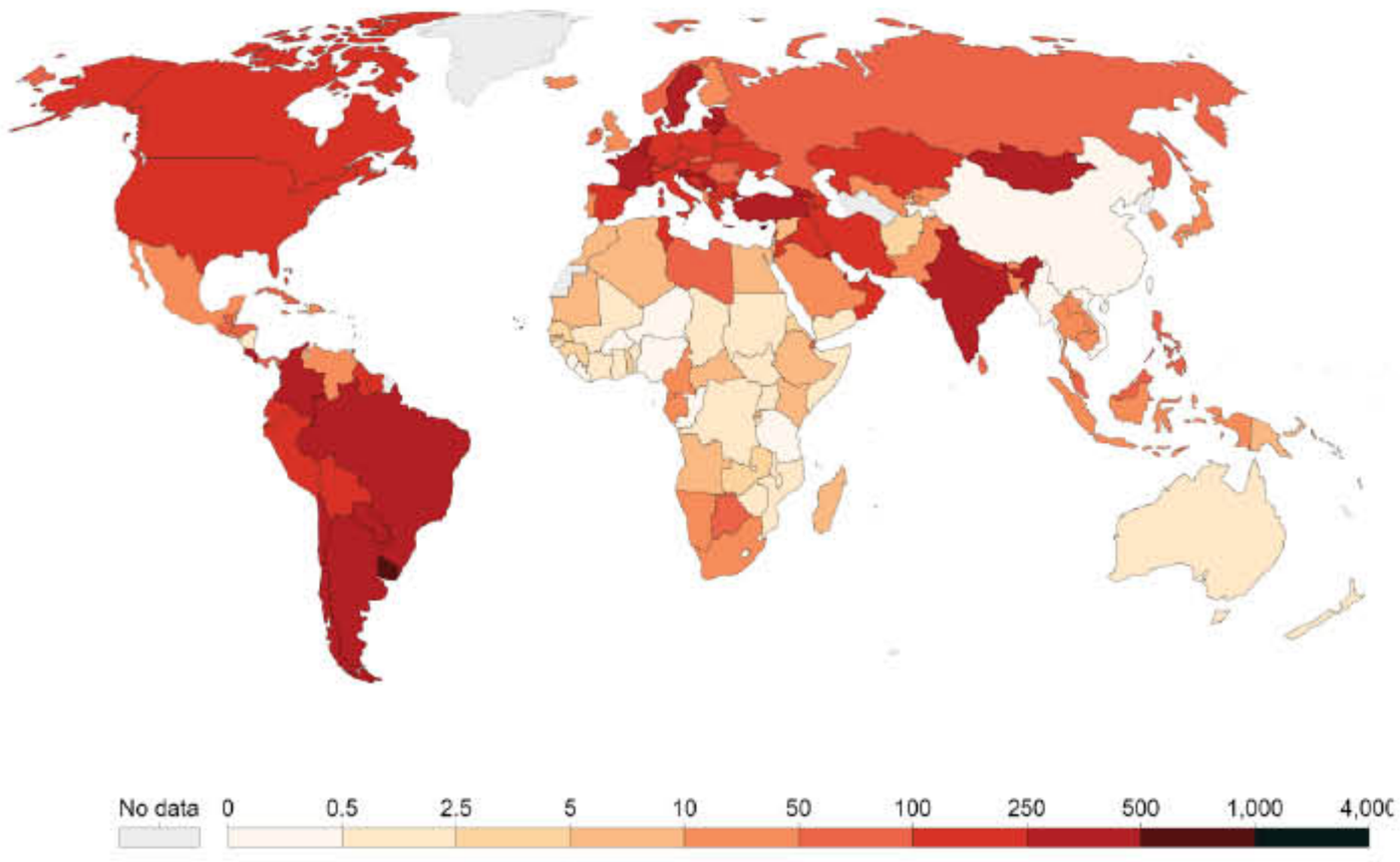
In the face of a shortage of health facilities,there is a strong thought that a strict lockdown is needed. Curfews at night and weekend lockdowns are no longer effective in the current situation. The virus is spreading like water under the carpet. The nation suffers from the severe shortage of medical facilities. If we aren't careful at such times, the situation can quickly spiral out of control. Because of the increasing number of cases, the pressure on doctors and staff was rising day by day. This is a workload that no health system in the world can handle.

India is experiencing a humanitarian crisis at the moment. It sets a dreadful example of a population that has yet to achieve COVID-19 herd immunity. There are several accounts of hospitalized patients running out of oxygen and bodies being burned on pyres in the streets, indicating a failing health system. We have to learn from our past when we fought the first wave with solidarity, even at that time we didn't have much health equipments to fight but we still coped up and have set the example and stood up with our indigenous vaccine in very less time that has also helped several low-income countries. Also, 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. The number of deaths is beginning to rise sharply, and that trend will almost certainly continue in the coming weeks. To minimize the number of incidents, a tighter lockout should be implemented.If we continue to postpone making decisions, the situation in Delhi and Maharashtra will deteriorate in the coming days, and the pandemic will spread like wildfire, wreaking havoc, as recently predicted by Director AIIMS, New Delhi. People are aware that vaccines are on the way, and corona spread could be arrested.

The state must not only temporarily increase the number of beds available but also have the necessary facilities

Daily new confirmed COVID-19 cases per million people, May 2, 2021

Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.



Source: Johns Hopkins University CSSE COVID-19 Data

Dr N K Prasanna

and personnel to manage the COVID-19 patients. In the aftermath of the Delhi oxygen crisis, supply coordination and the establishment of a central command has been worked upon for backup. The pathetic state of the patients, as well as the media's portrayal of poor patient care and treatment, has hurt. With each passing day, we are losing hopes in the form of COVID-19 deaths which reminds us of the position of health infrastructure in India. In a news interview, Anthony Fauchie, a renowned US epidemiologist, Biden's Government chief medical advisor proposed that a temporary lockdown be enforced immediately for a few weeks to stop the spread of corona. Whereas, vaccination is the only hope remaining for us but this will take much time as usual.

People were not taught about the importance of vaccines in saving lives. The mistrust of informed citizens was exacerbated by a lack of openness about serious adverse effects following immunization. The justification for the vaccine rollout was not clarified to the public. People make up imaginary hypotheses to fill the void left by the lack of reliable knowledge. Many people were wary of him because of this. The misunderstanding was exacerbated by a lack of confidence and mistrust of non-scientific motives. Health should take precedence over politics, and all political parties should be involved in health decisions. People will lose confidence if this does not become clear. The picture 1 shows how vaccination drive is going across in select countries. Though, India has achieved more that 150 million vaccinations, in terms of percentage, we are still very low as against Israel, US, UK and some other countries. The picture 2 shows current state of pandemic spread and how different countries are being effected. We need to take a lot of precautions in this difficult time so that we can ensure our safety as well as also protect our loved ones. We should look out for our symptoms without neglecting Covid appropriate behavior because prevention is better than cure.

(The authors are Scientist at CSIR-National Institute of Science Communication and Information Resources (CSIR-NISCAIR), New Delhi and Head, International Cooperation, Department of Science and Technology, (DST), New Delhi)

COVID-19 IN CH

HILDREN

In present scenario the Coronavirus disease 2019 (COVID-19) pandemic caused by the severe acute respiratory syndrome Coronavirus 2 (SARSCoV-2) is the ongoing global public health crisis leading to many deaths. In India, the first case of COVID-19 infections was reported in Kerala on January 27, 2020. Subsequently the case load increased steadily leading to a peak case load of nearly one lakh new cases per day in the month of September 2020.....

BY DR. NEELAM MOHAN/ DR SAILEN KUMAR BANA

The daily case load subsequently decreased. Nearly 6 months after peaking of cases in first wave in September 2020, coronavirus cases in India once again started rising from the first week of March 2021, heralding the arrival of second wave of COVID in the country. As per the Lancet editorial April 2021, due to premature reduction of our guards in terms of covid appropriate behaviour associated with super-spreader events like political rallies and religious gatherings led to a massive surge of cases in 2nd wave. As on 10th of May 2021, the health ministry reported 366,161 new Covid-19 infections and 3754 more deaths. India's total caseload now stands at 22.66 million, with 246116 deaths.

ARE THE CORONAVIRUS VARIANTS MORE INFECTIOUS IN 2ND WAVE?

The second wave of the pandemic has started gripping the country since first week of March 2021. India has also reported many mutant stains of coronavirus causing an increase in the number of COVID-19 cases in the country. Double mutant strain (B.1.617

Dr. Neelam Mohan

variant) is the predominant variant in 2nd wave in India, which has been declared as variant of concern by WHO due to its association with increased transmissibility and detrimental changes in COVID-19 epidemiology. Other stains are Bengal strain (B.1.168), UK Strain (B.1.1.7 Variant), South African Strain (B.1.351 Variant),Brazilian Strain (P.1 Variant). B.1.618 is a new lineage of SARC-CoV-2 characterized by a distinct set of genetic variant including E484K, which has immune escape mechanism, which means that previously formed antibodies against a virus without this mutation may be less effective in inhibiting this virus strain.

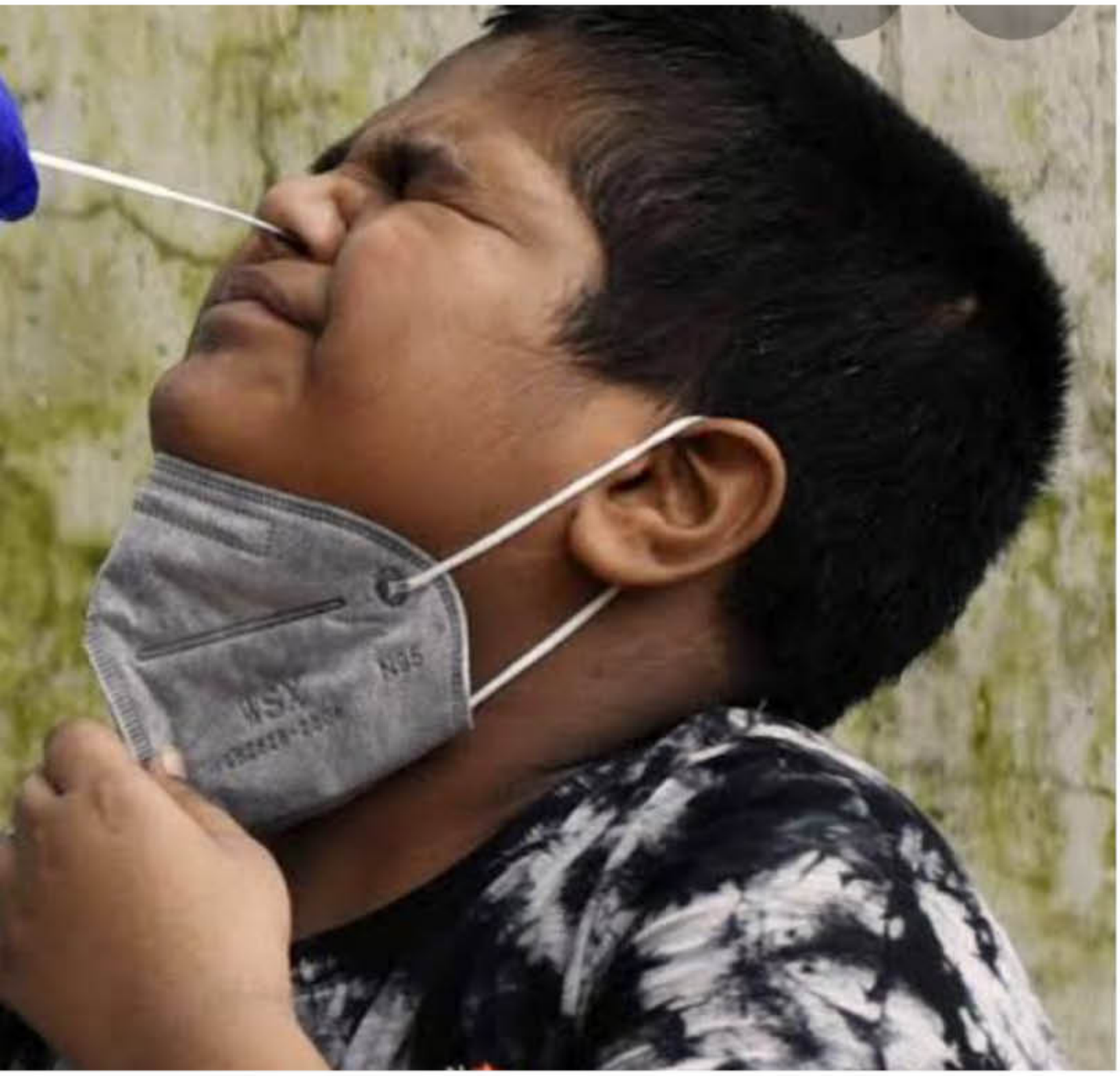
ARE CHILDREN BEING MORE AFFECTED IN 2nd WAVE OF COVID-19?

More children are being affected in this wave, though many of them present with mild symptoms. In the first wave, pediatric patients attributed to 2.8 % of the total cases. In the 2nd wave, nearly 11.5% of the 56 lakh Covid-19 cases reported between January 1 and April 21 were in the age group zero to 20 years.

WHAT ARE THE SYMPTOMS OF COVID IN CHILDREN?

The infection course in children is milder compared to adults. The reasons behind milder course in children are due to decreased expression of ACE inhibitor-2 receptor in children, decreased immune response and interference by other coinfecting viruses, stronger innate immune response, higherproportion of total lymphocytes, absolute numbers of T and B and NK cells and lower pro inflammatory cytokine responses. Symptoms and signs of COVID-19 are nonspecific and resemble any viral illness. Few common symptoms like in adults are fever, headache, myalgia, fatigue, tiredness, coryza, cough, sore throat, rapid breathing, loss of smell and taste. Children more commonly present with diarrhea, vomiting, abdominal pain, poor feeding. Patients may remain asymptomatic despite being infected.

CAN CHILDREN BE SUPER SPREADERS?



A super spreader is a person infected with the SARS-CoV-2 virus who is able to transmit the virus to a disproportionately high number of people.According to a study published in JAMA, children the viral load in the nasopharynx and oropharynx of children is 10 times higher as compared to adults, though they may have mild or no symptoms. Children usually mix around the adults, and more often visit their grandparents. This increased load of the virus in children may cause more droplet spread to the people who take care of them or come near to them without following COVID appropriate behavior.

SHOULD CHILDREN BE TESTED?

To avoid transmission to other household members, testing is recommended for all the suspect cases however, if resources are scarce, then testing may be deferred for both asymptomatic contacts and children with mild symptoms and without any comorbidities and a known positive family member. Such children may be presumed to be infected and they should be managed as per the guidelines. Presently in India, we do not have scarcity of resources so it it advised to test them to isolate the patient and prevent spread to others.

WHAT TEST SHOULD BE DONE TO DIAGNOSE COVID-19 INFECTION?

Patients should undergo testing as soon as possible after onset of symptoms. Rapid Antigen Test in nasopharyngeal swabs has low sensitivity, so if negative, RT-PCR should be done, which has a sensitivity of nearly 70% if done in nasopharyngeal and oropharyngeal swabs. Other tests like Xpert SARS-CoV-2 and Truenat give faster results. The Xpert Xpress SARS-CoV-2 test is a rapid, real-time RT-PCR test intended for the qualitative detection of nucleic acid from the SARS-CoV-2 in upper respiratory specimens. TrueNat system is a multiplexed point of care test that includes a single assay comprising of both the screening (E gene) and confirmatory (Orf1a) targets in a single test.

WHO ARE HIGH RISK CHILDREN IN INDIA?

Children with chronic illnesseslike diabetes, asthma, obesity, sickle cell disease, malignancy on immunosuppressive therapy, post organ transplantation (renal , liver , bone marrow), immunodeficiency disorders like HIV, genetic, neurologic, metabolic conditions are considered high risk. These patients may manifest with severe symptoms and need good supervision and timely management.

WHAT IS THE SEVERITY GRADING OF COVID IN CHILDREN? WHERE AND HOW TO TREAT THEM?

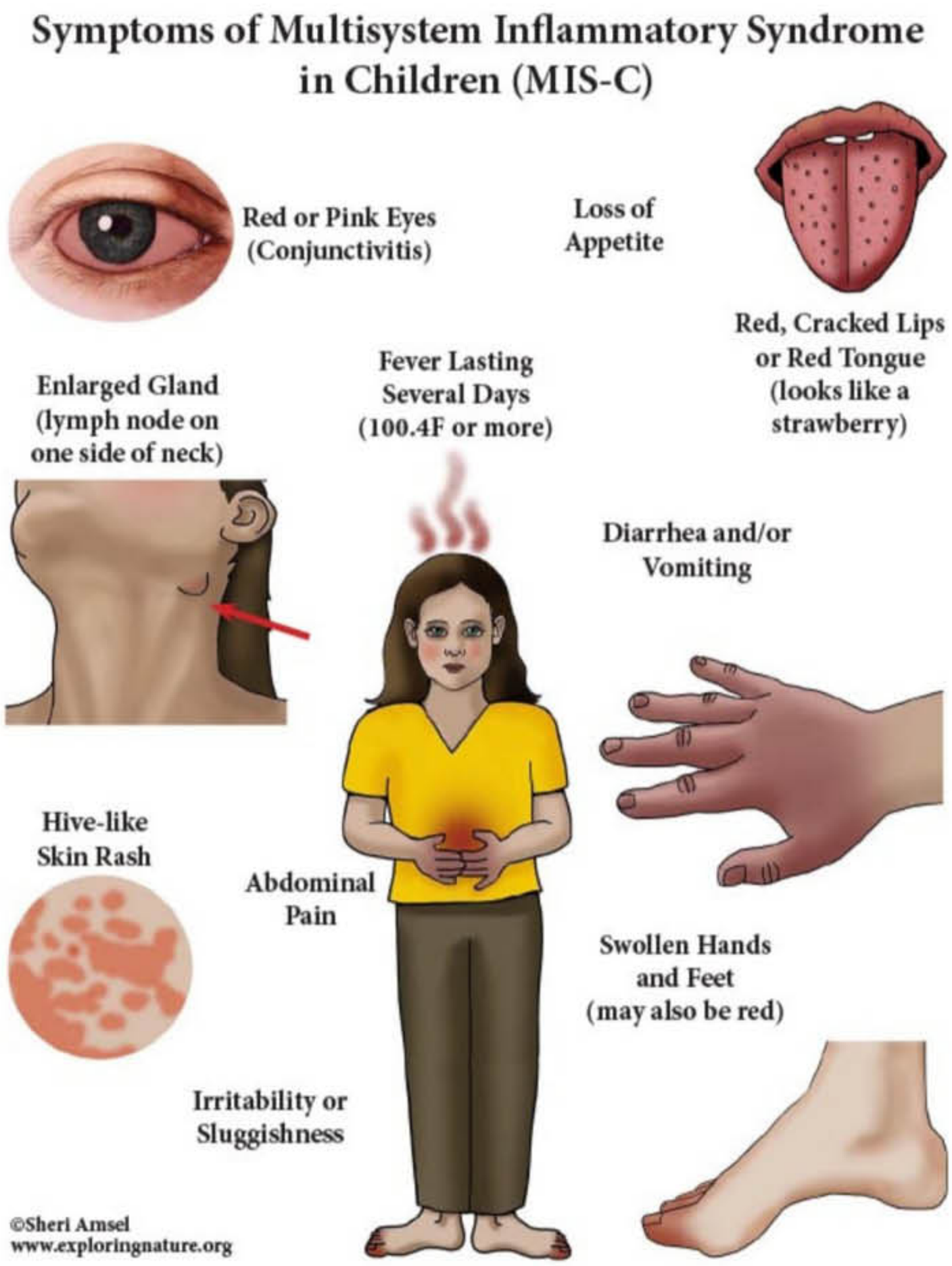
Affected children are graded as mild/moderate/ severe cases according to their symptoms and the treatment protocol differs accordingly.

Mild disease: Children with mild disease present with fever, cough, rhinorrhea, diarrhea, vomiting without fast breathing.Children with mild symptoms may be managed at home. Adequate hydration and nutrition is to be given. Temperature and oxygen saturation level has to be monitored every 6 hourly. Paracetamol is to be used in case of fever. Strict monitoring of patients and regular supervision by health care personnel by tele consultation is required to look for the

danger signs and identify the progression of mild cases to moderate or severe disease.

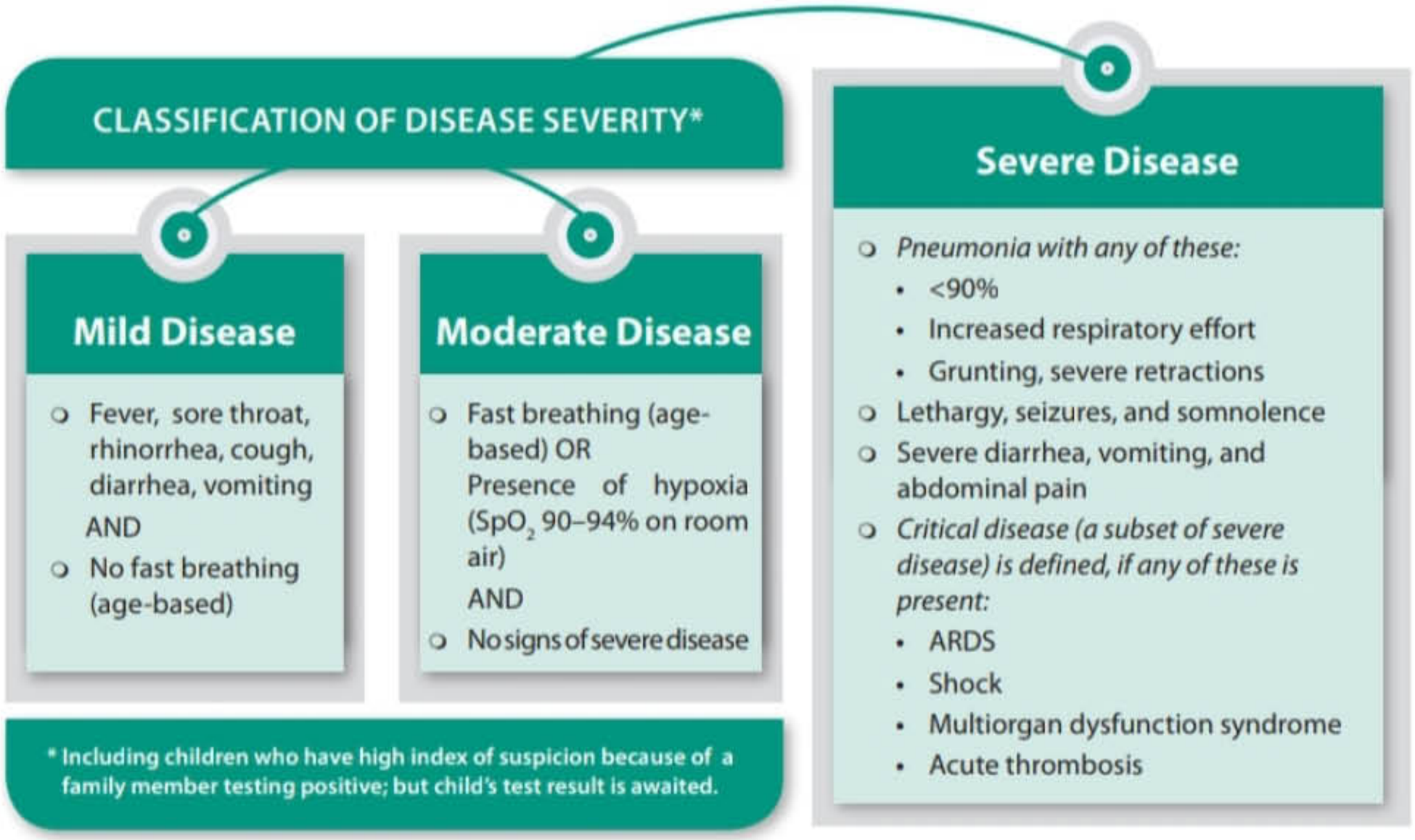
WHAT ARE THE DANGER SIGNS WHICH SHOULD WARRANT IMMEDIATE MEDICAL ATTENTION?

- SpO2 levels falls below 94%
- Patient is breathless or develops bluish discoloration
- RR >50 in less than 1 year children ; >40 in 2-5 yrs ; and >30 in >5 yrs
- Blood in sputum
- Altered behavior or confusional state/lethargy
- Not accepting feed and decreased urine output
- Excessive vomiting or diarrhea with dehydration



MODERATE DISEASE: Children with moderate disease present with fast breathing and / or hypoxia (saturation between 90 % to 95%). These children need to be admitted in COVID ward. Some tests like CBC, LFT,RFT,CRP, X-ray chest needs to be done. Adequate hydration has to be ensured. Fever is to be controlled with Paracetamol. If saturation is less than 94 %, and the disease is rapidly progressive, then injections like remdesivir, methylprednisolone, antibiotics may be required. Amoxycillin to be used with suspicion of bacterial infection. Prone positioning during awake period improves oxygenation. Supplemental oxygen is required if saturation is below 94 %.

SEVERE DISEASE: Children with severe disease present with pneumonia with saturation below 90 % in room air, increased respiratory effort, grunting /retraction, lethargy, seizures, and somnolence, severe diarrhea, vomiting or abdominal pain. These children need ICU care, and should be assessed for thrombosis and hemophagocytosis. Investigations like CBC, CRP, procalcitonin, LFT, RFT, D-Dimer, ABG, lactate, ferrititn, LDH, echocardiography , X-ray chest should be done. These children require oxygen support by high flow nasal cannula/ pressurized oxygen through CPAP/ Ventilator. They require intravenous antibiotics, remdesivir, steroids (dexamethasone), anticoagulant like



enoxaparine. Unlike adults, the role CT thorax is limitedin children. CT thorax is indicated, if any additional lungs pathology is anticipated, or if RT PCR is negative but the patient is symptomatic in the form of respiratory distress and hypoxia.

MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN (MIS-C):

It is a serious illness in children affecting multiple organ system that seems to be related to COVID-19. It appears to be a delayed complication of coronavirus infection, although not all children with MIS-C-related symptoms test positive for the virus. MISC is caused by a delayed immune response to the coronavirus that somehow goes into overdrive, causing inflammation that damages organs. It's also possible that the antibodies children make to the virus are creating the immune reaction. Since only a small number of children develop MIS-C, it is possible that there are genetic factors that make some children susceptible. MIS-C has varied symptoms that affect several organs and systems in the body. The usual duration between acute infection and onset of MIS-C symptoms is two to six weeks. However, rare cases of MIS-C occurring beyond 6 weeks after the acute SARS-CoV-2 infection have been reported. Fever is the prominent symptom. In contrast to the WHO, the CDC case definition permits a shorter duration of fever (> 24 h versus>3 days). Many children have symptoms like body rash, conjunctivitis, symptoms resembling toxic shock syndrome or Kawasaki disease, in which blood vessels, including the coronary arteries, enlarge or form aneurysms. Some children have signs of excessive blood clotting, gastrointestinal symptoms, kidney injury, neurologic symptoms, or heart inflammation with impaired heart function. These symptoms can occur in different combination. Once MIS-C is diagnosed, children will need to be followed over time with laboratory tests to assess inflammation, blood clotting, liver function, heart function, and other aspects of their illness. Children should also have echocardiograms to evaluate their heart and coronary arteries. Treatment currently includes anticoagulation to curb blood clotting, IV immunoglobulin, and anti-inflammatory drugs (corticosteroids and drugs blocking IL-1 or IL-6).

COVID VACCINATION IN CHILDREN:

Though most children are at low risk for complication, the need for a pediatric vaccine may not seem pressing, but this pandemic may never be controlled if children are not vaccinated, because they may act as silent carrier. There is increased recognition of MIS-Cand children with risk factors (chronic lung disease, heart disease, liver and kidney disease) are at increased risk for complications. So, once the safety and efficacy of vaccines in children are proved, they

should undergo vaccination. Presently, many vaccines are under trial across the globe. Pfizer vaccine, a mRNA vaccine has been approved for use in children between 12 to 18 years in US and Canada. Moderna vaccine also a mRNA vaccine is conducting two separate trials for children in USA aged 12 to 17 years and for children 6 months to 12 years, and the initial data shows that, it is 96% effective for adolescents between 12 to 17 years, without any safety concern. Bharat Biotech Covaxin. Recently it has got a nod from DCGI for trials in children aged 2 years-18years.

PSYCHOLOGICAL IMPACT ON CHILDREN

India has the largest child population in the world with children below the age of 20 years constituting almost 41% of the total population of 136 crores. The lockdown has significantly impacted children from poor families. An increasing number of poor and street children now have no source of income, making them a high risk population to face abuse and mental health issues with greater vulnerability and exposure to unfavorable economic, social and environmental circumstances.

The home confinement of children and adolescents is associated with uncertainty and anxiety which is attributable to disruption in their education, physical activities and opportunities for socialization with peer group.There is increased use of internet and social media among adolescents, which predisposes them to access objectionable content and also increases their vulnerability for getting bullied or abused. Children are also experiencing disturbed sleep, nightmares, poor appetite, overeating,agitation, inattention clinging and separation related anxiety.

There is a need to improve the infrastructure for children and adolescent's access to mental health services by using both face to face as well as digital platforms. For this collaborative network of parents, psychiatrists, psychologists, paediatricians, community volunteers, and NGOs are required. There is a need for 'tele mental health compatibility' and be accessible to the public at large. This would be crucial to prevent during and post-pandemic mental challenge.

ROLE OF PARENTS

In the times of stress and uncertainty, a secure family environment which the parents can provide is a strong protective factor. There is evidence to show that parental practices and coping measures affect the children's post disaster mental health. Parents should spend the undivided quality time with their kids and should not transfer their own fear and anxiety. Children should be put on a set routine and parents should promote the healthy and balanced diet, maintain oral health, physical exercise, proper rest, avoidance of fatigue.

ROUTINE VACCINATION IN CHILDREN DURING PANDEMIC

As per the guideline formulated by Ministry of Health and Family Welfare (MOHFW), India, routine vaccination of children should not be disrupted during the pandemic. A health facility should continue immunization services with below mentioned prerequisite arrangements:

- A well-ventilated seating area with seating arrangements done as per the social distancing norms. The vaccine should preferably be called by appointment although no opportunity should be missed for vaccination.
- An adequate number of pre-identified, fixed vaccination staff depending on the injection load and the required documentation.
- Staff conducting vaccination should wear a three-layered surgical mask and gloves and sanitize their hands after vaccinating every child.
- Support staff to manage seating arrangement, queue management

etc. for the pregnant women and care givers.

- Ensure hand sanitizer or hand washing units with chlorinated water are available for public use at the entrance to the health facility
- Disinfect the seating space after completion of the immunization session.
- Adequate availability of MCP card and due updating of records.
- Adequate availability of vaccines and logistics for the uninterrupted immunization session
- Display visual alerts in clinics, such as posters, with information about COVID-19 disease and reminders on individual prevention strategies.

CAN MOTHERS WITH COVID BREASTFEED THEIR BABIES?

Neonates can acquire Covid 19 during delivery, but more commonly during postnatal period at home, however, majority of them are preventable. If the mother is stable clinically, then roomin, breast feeding, kangaroo mother care, immunization and routine care should continue. Mothers should perform hand hygiene frequently, including before and after breast feeding and touching the baby. They should practice respiratory hygiene and wear a mask while breast feeding and providing care to the baby. Cleaning and disinfecting the surfaces should be done regularly

MUCORMYCOSIS – IS IT AN ENTITY TO WORRY ABOUT?

In the absence of an effective vaccine or antiviral therapy, glucocorticoids and probably remdesivir are the only drugs proven to be beneficial in Covid-19. Glucocorticoids can increase the risk of secondary infections. Moreover, the immune dysregulation caused by the virus and the use of concurrent immunomodulatory drugs such as tocilizumab could further increase the risk of infections in COVID-19 patients.

Infection with mucormycosis, known as the black fungus, is a dangerous fungal infection caused by a group of moulds known as mucormycetes, which are present naturally in the environment, but they cause serious complications when a patient has pre-existing health problems or has received steroids.

In Covid-19 patients with diabetes and immuno-suppressed individuals, one must suspect mucormycosis if there is sinusitis, nasal blockage or congestion, one-side facial pain or numbness, blackish discoloration over the bridge of the nose or palate, toothache, double vision with pain, skin lesion, thrombosis, chest pain and worsening respiratory symptoms.

Mucormycosis is treated by antifungal drugs like Amhotericin B, posaconazone, however, extensive debridement might also be required.

THREAT OF 3RD WAVE—IS IT INEVITABLE IN INDIA?

There is high possibility of a 3rd wave in India somewhere between October – December 2021. The 3rd wave can only be prevented with rapid vaccination, stringent government action to make people follow the COVID appropriate behaviour along with early identification of mutant stains. In the third wave, there will be only children who have not been vaccinated so far, as the inoculation drive for those below 18 years has not started yet. So, children will be more vulnerable to be affected by COVID in 3rd wave. There is deficit of with special paediatric ICU beds, which have to be increased as a preparedness for the future wave along with the need of training doctors nurses and other healthcare workers for good pediatric care. Need for a special pediatric task force both at national and state level cannot be under emphasized.

(The authors are Director, Department of Pediatric Gastroenterology & Hepatology/ Lead Pediatric Covid Care, Medanta TheMedicity, Gurugram)

MUCORMYCOSIS
GUIDELINES FOR DISTRICTS

Mucormycosis (Black Fungus) is a very rare infection. It is caused by exposure to mucor mould (a type of fungus) which is commonly found in soil, plants, manure, and decaying fruits and vegetables. It is found everywhere and found in soil and air and even in the nose and mucus of healthy people.....

BY DR DEEPTI SHARMA

It affects the sinuses, causing pan sinusitis. It can spread rapidly even overnightly to the eyes, brain, jaws and lungs and can be life-threatening in diabetic or severely immune-compromised individuals, such as cancer patients or people with HIV/ AIDS & nowadays in patients on steroids for treating Covid infection.

It is believed that mucormycosis, which has an overall mortality rate of 50%, is being triggered by the use of steroids, a life-saving treatment for severe and critically ill Covid-19 patients. Steroids reduce inflammation in the lungs for Covid-19 and appear to help stop some of the damage that can happen when the body's immune system goes into overdrive to fight off coronavirus. But they also reduce immunity and push up blood sugar levels grossly in both diabetics and non-diabetic Covid-19 patients. It's thought that this drop in immunity could be resulting into mucormycosis. Diabetes lowers the body's immune defences, coronavirus exacerbates it, and therefore control of Diabetes is very essential.

PREDISPOSING FACTORS:

- Uncontrolled Diabetes Mellitus
- Immunosuppression by steroids
- Treatment with Immunomodulators – Tocilizumab, Itolizumab, etc.
- Prolonged ICU stay
- Long standing oxygen therapy – specially by nasal prongs
- Comorbidities – post-transplant, malignancies
- Voriconazole therapy
- Long term Ryles tube feeding
- Humidifier bottle contamination
- Prolonged use of higher antibiotics
- Chronic Kidney Disease/ Chronic Liver Disease

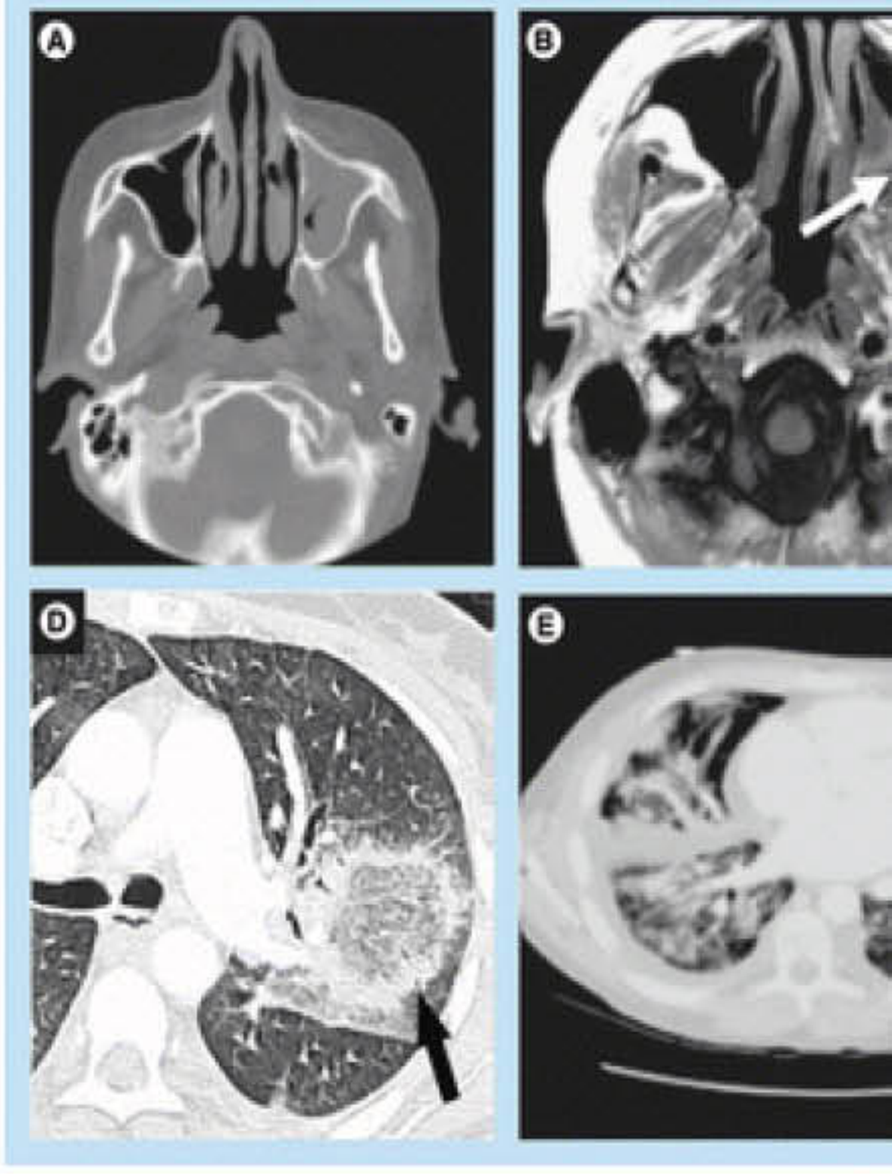
PREVENTION:

- Strict glycemic control during management of COVID 19 patients is required.
- Systemic steroids should only be used in patients with hypoxemia.
- Oral steroids are contra indicated in patients with normal oxygen saturation on room air.
- If systemic steroid is used, blood sugar should be monitored.
- The dose and duration of steroid therapy should be limited to dexamethasone (0.1mg/kg/day) for 5-10 days.
- Universal masking reduce exposure to Mucorales; avoidance of construction sites.
- During discharge of the patients, advice about the early symptoms or signs of mucormycosis (facial pain, nasal blockage and excessive discharge, loosening of teeth etc., chest pain, respiratory insufficiency)
- Strict infection control measures including cleaning & replacement of humidifier. Sterile normal saline should be used in the humidifier bottle & changed daily. Masks should be Disinfected daily.
- Local Public Health Laboratory should be asked to take swabs of humidifiers, masks, tubings & common touch areas for culture of Mucormycosis.

SUSPECT:

(In COVID-19 patients, diabetics or immunosuppressed individuals)

- Sinusitis: nasal blockade or congestion, nasal discharge (blackish/ bloody), local pain on cheek bone

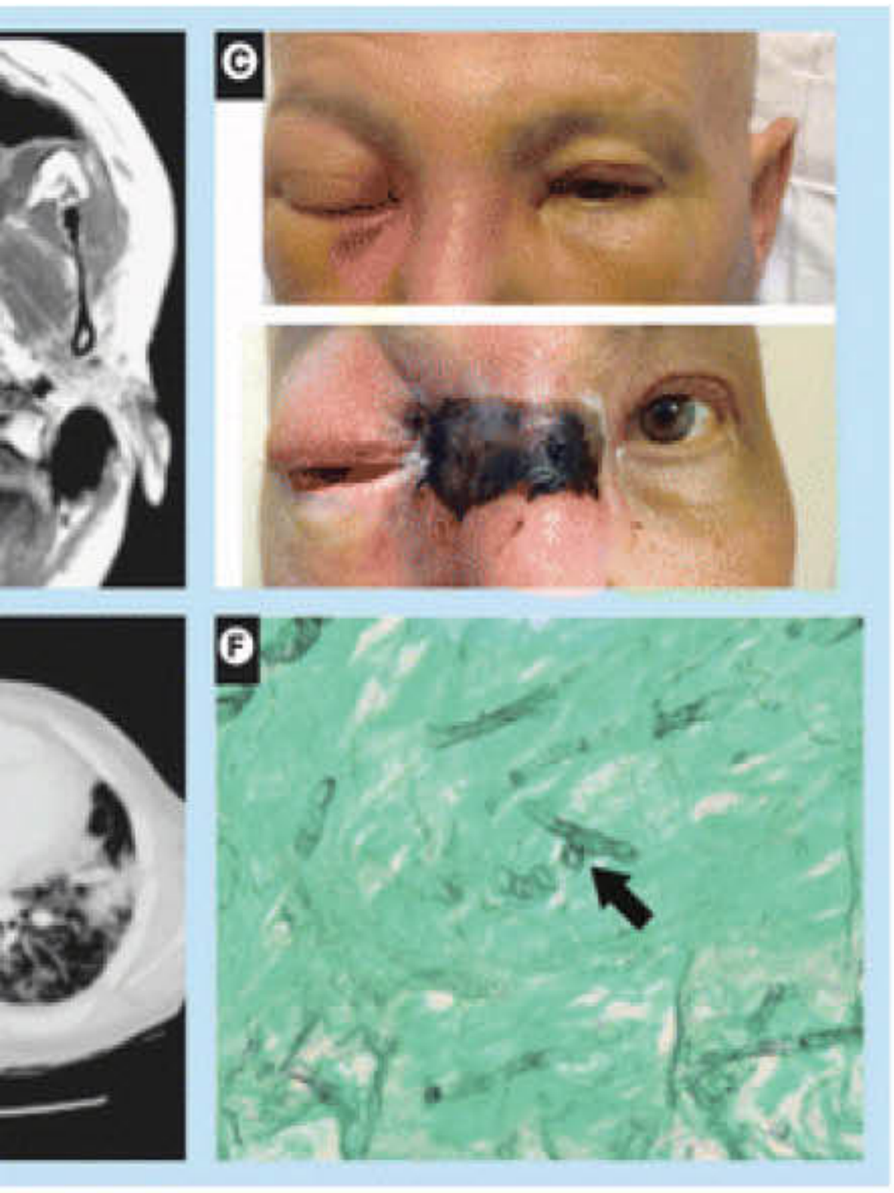


DOs	DONTs
Control of hyperglycemia – To maintain between 130-180 mg/dl in ICU and strict control in wards HbA1C to be kept below 6.5.	Don't miss warning signs and symptoms
Monitoring blood glucose levels post-COVID19 discharge and also in diabetics	Don't consider all cases of blocked nose as cases of bacterial sinusitis, especially in context of immunosuppression and/or COVID-19 patients on immunomodulators
Judicious use of steroids – low dose for 10 days only in hypoxic patients	Don't hesitate to seek aggressive appropriate investigations (KOH staining & microscopy, culture, MALDI-TOF) to detect fungal etiology
Use of clean, sterile water for humidifiers during Oxygen therapy	Do not lose crucial time to initiate treatment for mucormycosis
Judicious use of antifungals and antibiotics	

- One sided facial pain, numbness or swelling
- Blackish discoloration over bridge of nose or palate
- Toothache, loosening of teeth, jaw involvement, swollen gums
- Blurred or double vision with pain; fever, skin lesion; ptosis; thrombosis and necrosis (eschar)
- Loss of vision (early or late feature)
- Chest pain, pleural effusion, hemoptysis, worsening of respiratory symptoms.
- Seizures, stroke – in cases of cerebral involvement

WARNING SIGNS AND SYMPTOMS:

- Pain and redness around eyes and/or nose
- Fever – usually mild
- Epistaxis
- Headache
- Cough
- Shortness of breath
- Bloody vomiting



- Altered mental status

EXAMINATION FINDINGS:

- Facial swelling
- Facial discoloration
- Ptosis
- Proptosis
- Restricted extraocular movements
- Central Retinal Artery Occlusion
- Ophthalmoplegia
- Panophthalmitis
- Palatal eschar
- Nasal eschar

INVESTIGATIONS:

• Hemogram; Blood sugar levels – FBS, PPBS; HbA1C; RFT with Sr elctrolytes

• Deep nasal swab from Gram, KOH and Calcofluor White stain + plate blood agar and fungal media (SDA or PDA)

• Diagnostic nasal endoscopy; FESS.

• CT PNS; MRI Orbit, PNS and Brain with contrast.

• CT guided biopsy from ling for cultur / sensitivity.

• Bronchoscopic broncho-alveolar lavage for Histopathology.

IMPORTANT POINTS IN MANAGEMENT:

Infectious disease specialist, microbiologist, histopathologist, intensivist, neurologist, ENT specialist, ophthalmologist, dentist, surgeons, radiologists etc. have roles in the management.

- Control of diabetes & diabetic ketoacidosis
- Reduce steroids (if patient is still on) with aim to discontinue rapidly
- Discontinue other immunomodulating drugs if patient is taking like: Baricitinib, Tofacitinib
- Surgical debridement: Extensive, to remove all necrotic material; if eye involved, exenteration of eye; in pulmonary, if the lesion is localized or in one lobe.
- Medical treatment
- Surgical treatment.

PRACTICAL PROTOCOL TO BE FOLLOWED :

1. Baseline HbA1c on Admission.
2. The strict control of blood sugar levels (110-180 mg/dl) and Diabetic Ketoacidosis (DKA).
3. Rational use of steroids in the high risk group.
4. Adequate humidification with distilled water used in the humidifiers of the Conventional / Low Flow / High Flow Oxygen delivery systems.
5. Isotonic-Saline Nasal Douche / Spray x 2 Times a day.
6. Maintain the Hygiene of Oxygen Delivery Systems.
7. **Complete ENT Evaluation:**
   a) On Admission, DAY 1 & between Day 3 to 7 as per the clinical condition in the high-riskgroup.
   b) At the Time of Discharge of a completely recovered COVID +ve, with the High-Riskfactors.
   1. Diagnostic Nasal Endoscopy (DNE) + Otoscopy + Palatal Examination.
   2. Deep Nasal Swab for KOH smear & Fungal Culture.
   3. Biopsy (in Sterile Saline for Mycology & Formol Saline for Histopathology) at any point,in very high clinical suspicion - Day 1 till whenever and start liposomal amphotericin B (in very high clinical suspicion) without waiting for the Microbiology Reports.
8. Complete Ophthalmological Evaluation:
   a) On Admission, DAY 1 and between Day 3 to 7 as per the clinical condition, in the high-risk group.
   b) At the Time of Discharge of a completely recovered COVID + with High-Risk factors.

To examine the patient for early clinical signs of mucormycosis in the Anterior & Posterior Segment of the (Congestion / Chemosis / Pupillary Reaction / Motility / Central Retinal ArteryOcclusion)

Criteria for examination by an ENT specialist & if required by an Opthalmologist on discharge. If the patient has had any of the following during admission:

- Blood sugar level > 200
- Hb1AC > 8
- Oxygen therapy > 7 days
- Steroid therapy > 7 days
- Use of Tocilizumab
- ICU stay > 7days

9. RADIOLOGICAL EVALUATION:
Plain MRI PNS & Orbit to be done at any point, in very high clinical

suspicion.

a. During the course of the Admission.
b. At the Time of Discharge of a completely recovered COVID + with very high clinicalsuspicion.

Advice to the Patient & Care Giver (At Discharge)

An educated & informed high-risk patient should be the protocol.Inform the patients about the early signs and symptoms of Mucor

1. Nasal Blockage
2. Blood tinged nasal discharge
3. Headache
4. Pain in the Eye
5. One sided Facial Pain & Swelling or Numbness
6. Toothache, Loosening teeth, discomfort during chewing
7. Swelling of the Eye & Adnexa
8. Double Vision

NOTE:

- Immediately consult your treating Otorhinolaryngologist / Ophthalmologist, if youexperience any of the aforementioned signs and symptoms.
- Follow up on Day 7 and at 3 weeks.

DEFINITION OF HIGH-RISK GROUP:

All COVID-19 cases with Uncontrolled DM + DKA / T2DM on Insulin with high dose Corticosteroids + Immunomodulators and require oxygen delivery systems.

MANAGEMENT:

(A) Medical management: Most important is to control blood sugar. While patient is on Ampho-B treatment, daily monitoring of RFT and Sr Electrolytes to check for hypokalemia is mandatory. Dose of Ampho-B needs to be titrated against GFR/ renal functions.

Amphotericin-B (crystalline) should be preferred. Only if the patient has deranged RFTs / LFTs or the patient does not tolerate, then Amhotericin-B (Liposomal or Lipid) should be used.

1. Induction with Liposomal Amphotericin-B (L-AMB): 5-10 mg/kg/day for 2 weeks [All patients] OR Deoxycholate formulation of Amphotericin-B: 0.7 - 1.0 mg/kg daily (this is more toxic)
2. Dual therapy: L-AMB + Oral Posaconazole (300 mg BD on Day 1 f/b 300 mg OD for 2 weeks) [All patients]
3. Oral Posaconazole 300 mg BD for a further 2-4 weeks till clinical resolution and radiological stabilization. [All patients]
4. Monitor patients clinically, with radio-imaging for response / disease progression & microbiologically
5. After 3-6 weeks of amphotericin B therapy, consolidation therapy (posaconazole/ isavuconazole) for 3-6 months

(B) SURGICAL MANAGEMENT: After dressing of Mucormycosis patient, gloves should be changed before touching another patient to avoid contact transmission of mucor to other patient.

1. Early surgical debridement of sinuses [All patients]
2. Transcutaneous Retrobulbar Amphotericin B (TRAMB): 1 ml of 3.5 mg/ml [Select cases only]
3. **Orbital Exenteration:** For patients with extensive orbital involvement.

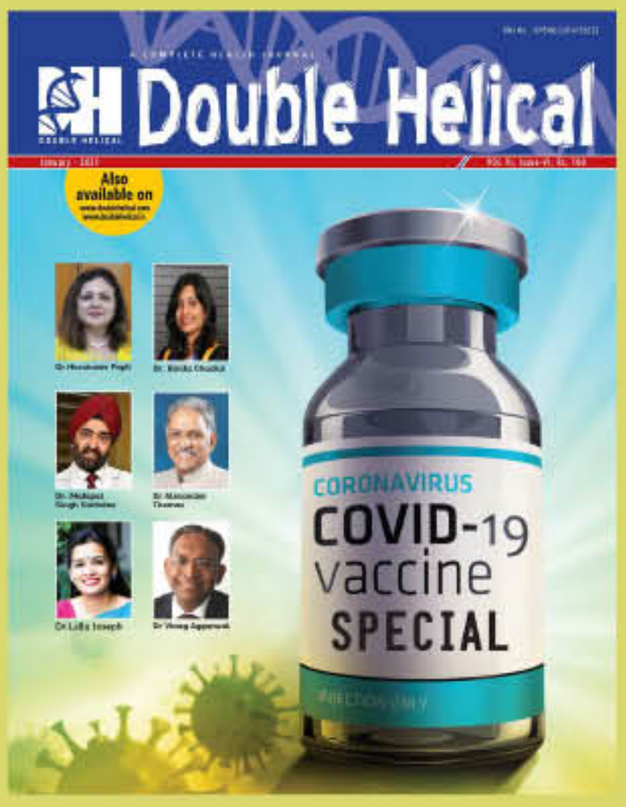
In follow-up of this patient, recurrence should be closely monitored for. Strict long term diabetic control is needed for the same

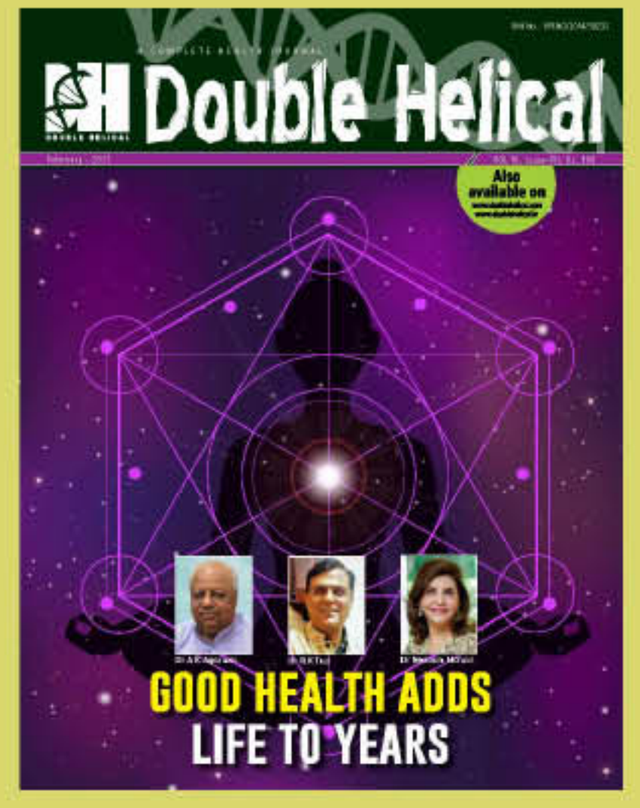
As surgical treatment involves disfigurement of face, consultation of a plastic surgeon can be sought.

Guidelines for the system of reporting the data of Mucormycosis is given separately.

The Author is Fellow Forensic Odontology, Cert (WMD), Cert (Implants) General Secretary For Council Of Accredited Forensic Odontologist approved by Govt Of India Owner / Director Dr Sharma Dental Care.

Your Guide to Healthy Living





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NEED AND SCOPE OF DECADE OF HEALTHY AGEING

Elderly or old age consists of ages nearing or surpassing the average life span of human beings. The boundary of old age cannot be defined exactly, because it does not have the same meaning in all societies. Government of India adopted 'National Policy on Older Persons' in January, 1999… **BY DR INDER PRAKASH**

The policy defines 'senior citizen' or 'elderly' as a person who is of age 60 years or above. Further, older persons are classified as (a) Young old - Aged 60-69 years, (b) Older old - Aged 70-79 and (c) Oldest old - Ages 80 years and above.

TRANSITION & PROJECTIONS

The number of older persons have increased from 2.01 (5.5%) crores in 1950 to 10.38 (8.6%) cores in 2011 and it is projected to increase to 32.43 (20.6%) by 2050. With increasing numbers, there is changing balances in population, which are decline in sex ratio, increase in old-age dependency ratio, decline in potential support ratio, and decline in labour force participation. Decline in fertility and increasing longevity have produced unprecedented changes and so the trend will continue. Thus, the dynamics in the demographic structure are bound to happen. The difference is that in developed countries, it took 100 years to reach 14% from 7% proportion and most developed countries has already expanded and diversified their system of social security and health care. But in developing regions it will take only 25-30 years and there remained major shortcomings and unmet needs of the older population. Thus, the profound, pervasive and enduring consequences of population ageing present enormous opportunities as well as challenges for all societies. No time left to think, the work is to be done in war footing.

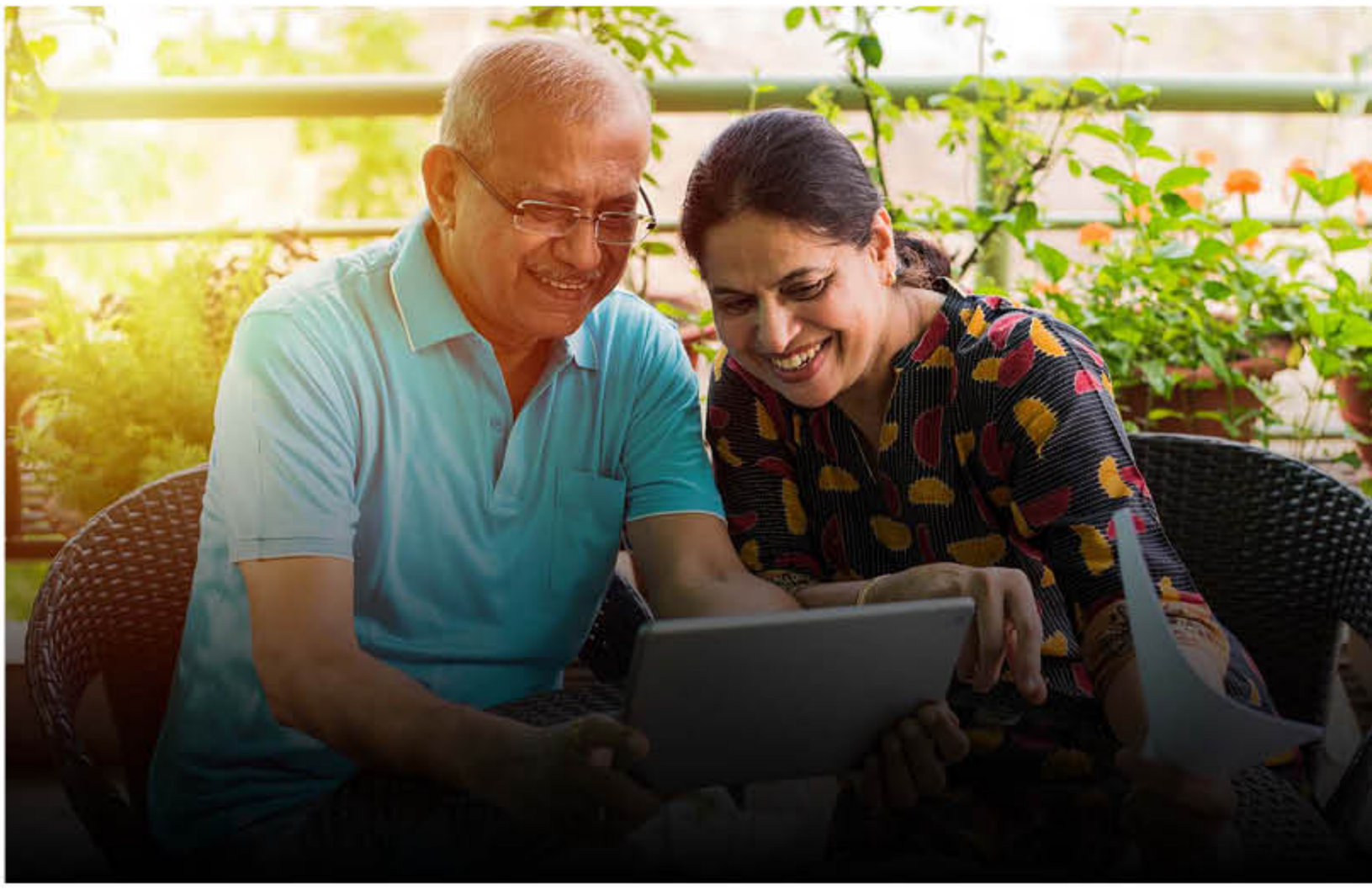
ISSUES AND CONCERNS

With increasing age the older people suffer more morbidity i.e. 75.68% have one or other disease, 53.63% have one chronic disease, 20.83 have two chronic diseases and 3.01 % have three chronic diseases. Above all 8% of older people are confined to bed. Thus, the older people have different needs, which are as (a) all healthy older adults need - promotive and preventive care, (b) all those having one disease need - preventive and curative care, (c) those having two diseases requires - curative and rehabilitation care and (d) those having three disease and confined to bed need - long-term care. Other issues of the older people are ageism, feminization, physiological, socio-economic issues, myths associated with older people and unprepared system.

Thus, it is observed that health in aged is not random, there is no typical older person. Biologically, ageing results from molecular and cellular damage over time. This leads to a gradual decrease in physical and mental capacity. But these changes are neither linear nor consistent, and they are only loosely associated with a person's age in years. One 70 year-old may enjoy extremely good health and functioning, other 70 year-olds may be frail. Beyond biological changes, ageing is also associated with other life transitions such as retirement, relocation to more appropriate housing, and the death of friends and partners. In developing a public-health response to ageing, requires a concerted and sustained effort that may reinforce recovery, adaptation and psychosocial growth, So that no one is left behind.

MILESTONES

WHO adopted Vienna International Plan of Action on Ageing (VIPAA) in 1982, wherein Governments urged to devote more attention to the ageing population. In 1990, October 1 was declared as the International Day of Older Persons. The day is celebrated by raising awareness about issues affecting the elderly. The Annual themes of the elderly days are as under. Subsequently, in 1991, principles for older persons were adopted that are divided into five different clusters of relevant issues of independence, participation, care, self-fulfillment and dignity. WHO in 1999, declared as the International Year of Older Persons. Celebrated in recognition of humanity's demographic coming of age and promise it holds for maturing attitudes and capabilities in social, economic, cultural and spiritual undertakings, not least for global peace and development in the next century. Finally, in 2002 Madrid International Plan of Action on Ageing (MIPAA) that conceptualization of framework for national strategies for implementation by the member states.



WELFARE SCHEMES FOR OLDER PEOPLE IN INDIA

Based on recommendations of the national policy for older persons 1999 and provisions contained in MIPPA, Ministry of Health & FW launched national programme for health care of the elderly with the objectives of To provide accessible, affordable, and high-quality long-term, comprehensive and dedicated care services to an Ageing population. The programme has three components of (a) NHM Component supporting SCs, PHCs, CHCs and Distt. Hospitals. (b) Tertiary component consisting of nineteen Regional Geriatric Centres and two National Centres for Ageing.(c) the third component of the programme is central component that consists of monitoring and evaluation of programme, information education and communication and research in geriatric. Recentally government of India has launched Ayushman Bharat program that ahs two components of Comprehensive Health Care Services through H&WC and National Health protection scheme. Among the twelve services identified under this programme one is health care of the elderly.

MOSJ&E has a number of schemes supporting welfare of the older people and these schems are National policy for older person (NPOP 1999), Integrated programme for older Person (IPOP), International Day for Older Persons (IDOP). Maintenance of welfare of parents and Sr. citizens (MWPSC) Act 2007, National Council for Older Persons (NCOP), Vayoshreshtha Samman, Non-Government Organizations and Services from OldAge Institutions.

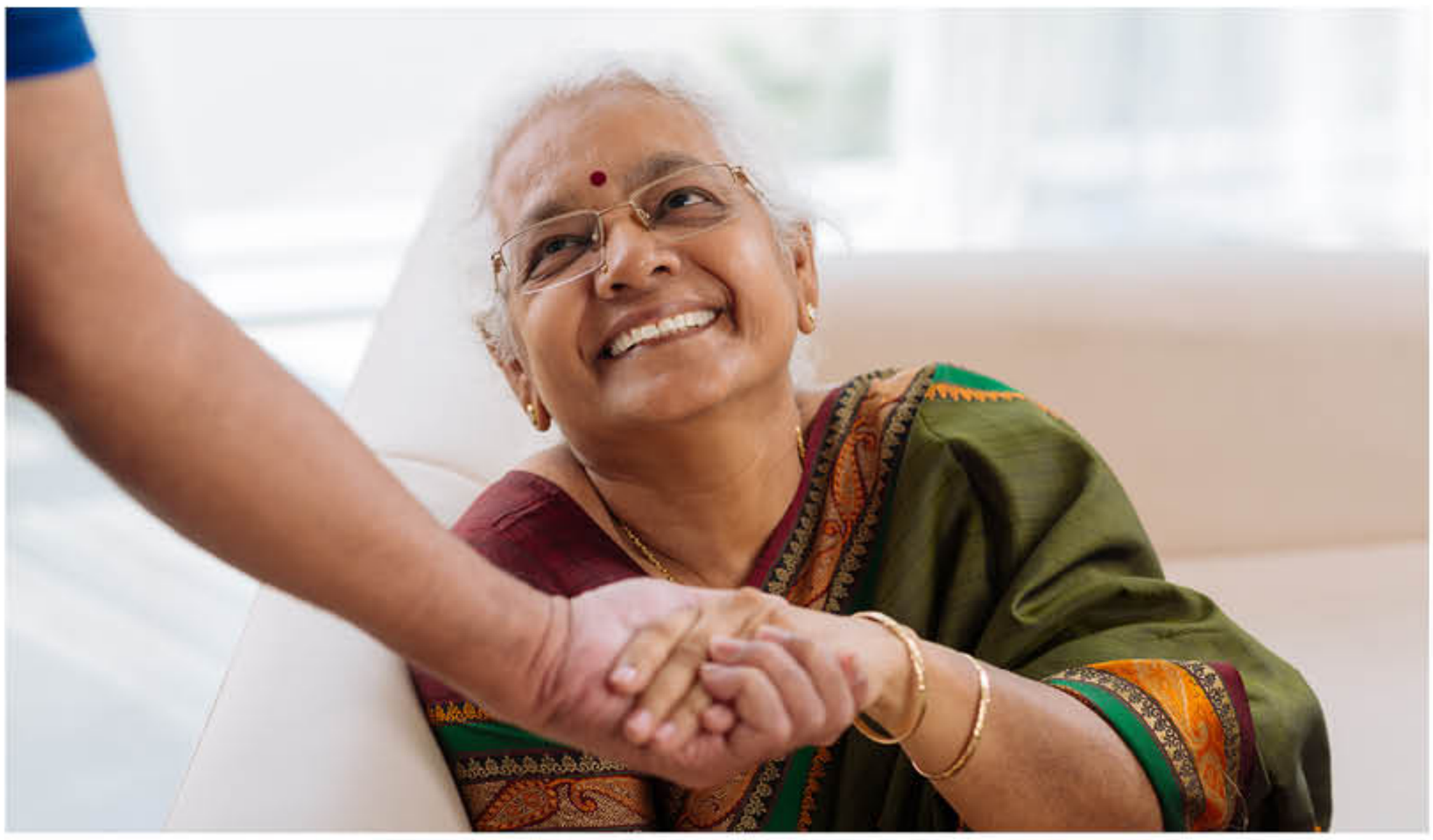
Other Ministries supporting welfare schemes for the older people are M/o Rural Development, M/o Finance, M/o Home Affairs, M/o Railways, M/o Civil Aviation, M/o Road Transport, D/o Telecommunication, M/o Consumer Affairs, M/o Legal affairs and Municipal Corporation of Delhi.

Recent Initiative Relevant NPOP are Pradhan Mantri Surksha Bima Yojana, Atal Pension Yojana, Health Insurace for Sr.Citizens, Varishtha Pension Bima Yojana 2017, Scheme for providing aids and Assistive appliances, Sr. Citizen's Welfare Fund, South Asia Partnership on Ageing: The Kathmandu Declaration 2016.

WHO in 2015 constitutes a working group to assess the progress made in the implementation of MIPPA. The world report on ageing 2015 was published in 2016. It pointed out many gaps in the implementation of MIPPA Strategies. The report suggested the concept of healthy ageing and proposed decade of healthy ageing 2020-2030.

HEALTHY AGEING is a process of developing and maintaining the functional ability that enable wellbeing in older age. Three dimensions of Healthy Ageing are; Functional ability, Intrinsic capacity and Environment. As a result of the global policy response proposed Global and Regional Strategies for Healthy ageing as under;

- Developing a country driven,



outcome oriented plan & policy for healthy ageing

- Adaptation of the health system to the challenges of population ageing and health needs of older population
- Developing system for long term care of the elderly people
- Adaptation of a life course approach to promote healthy ageing
- Multisectoral approach and partnership
- Improving measurement, monitoring and understanding.

The Decade of Healthy Ageing (2020-2030) is an opportunity to bring together; the governments, civil society, international agencies, professionals, academia, the media, and the private sector for ten years of concerted, catalytic and collaborative action to improve the lives of older people, their families, and the communities in which they live. The need for concerted & sustained action for Healthy Ageing was felt because of longer lives, but countries are unprepared, adding life to years, depends on healthy status and leaving no one behind and Health inequalities. It need, building a solid foundation, and aligning with agenda 2030. Thus, there is need for Decade of Healthy Ageing (2020-2030), to shift ageing from challenges to opportunity.

Vision & Goals of the decade of healthy ageing are; a world where everyone can live a long and healthy life; evidence based action to maximize functional ability that reaches every person and establish partnership necessary to support a Decade of Healthy Ageing 2020-2030.

The issues to focus during the decade are to improve engagement with older people; understanding older people's needs and unmet needs; develop health and long-term care and to improve multisectoral action. The priority outcomes to promote during the decade are healthy life expectancy; age-friendly cities and communities and to reduce number of older people who are care dependent.

Areas for Action identified are; change how we think, feel and act towards age and ageism; Ensure that communities foster the abilities of older people; Ensure person- centered integrated care for older people; Provide access to long term care within community and support; Partnering for Change; Hear and respond to diverse voices and enable potential; Nurture leadership, governance and capacities at all levels; Connect stakeholders at all levels and Foster research, knowledge exchange and innovation.

CONCLUSION

It is intended that the programme will support activities for the welfare of the older people and older people in turn will have healthy lives having maximum functional ability and intrinsic capacity and they will lead a dignified independent life. The focus during the decade of healthy ageing will be develop national policies for healthy ageing, improve engaging with older people, strengthening health and long term care system and improve multisectoral approach. The priority outcome will be health life expectancy, age friendly cities and communities, reduced number of care dependent of older people. The support during the decade will be to provide training, generate evidence for guidance, knowledge exchange, innovations and delivery of support.

(The author is Deputy Director General,(PH) Dte.GHS, Ministry of Health and Family Welfare, New Delhi)

CENTRAL SEROUS RETINOPATHY

Central serous retinopathy (CSR) is an idiopathic disease which affects the central area of retina known as the macula. It primarily affects at age group of, 20 to 50 years of age, although it is seen occasionally in older patients, females, and other ethnic groups.....

BY DR SHISHIR NARAYAN

Today the Stress is a major risk factor. People under a lot of stress may be more likely to develop central serous retinopathy. The CSR can cause vision to be blurred and distorted due to fluid collecting underneath the macula. In most people, CSR gets better on its own and doesn't cause long-term changes to vision. In some people it may re-occur. Episodes of CSR that last for a long time or keep coming back are more likely to cause permanent changes in vision.

The condition may be triggered or exacerbated by stress or corticosteroid use. The retina is responsible for translating light taken into the eye as images the brain can understand. The build-up of liquid can cause the retina to detach, and this can cause vision problems.

SYMPTOMS

Blurry vision is a common symptom. A person may also notice that the area around their central vision starts to darken or becomes blurry. In most cases, the vision issue is limited to one eye. It is possible that a person may develop the condition in each eye at separate points throughout their life.

Additional symptoms of central serous retinopathy may include: objects appear farther away, whites may appear duller, and lines appear crooked and a dark spot in the center of vision. Central serous retinopathy does not always produce symptoms. It is possible that fluid may build up in areas that are not around the macula, which is responsible for clear central vision. If this happens, a person may have the condition without knowing it because they do not have any symptoms.

HOW AFFECT VISION?

The swelling in the macula can cause blurry vision, distortion, blind spots, muted colours and objects appearing smaller than they are. One may also have trouble with bright light and your ability to see an object against a background of similar colour (contrast sensitivity) could be reduced. Some people may find that their vision fluctuates – on some days they may see better and other days not very well at all. For some people, the swelling may not cause any visual symptoms at all.

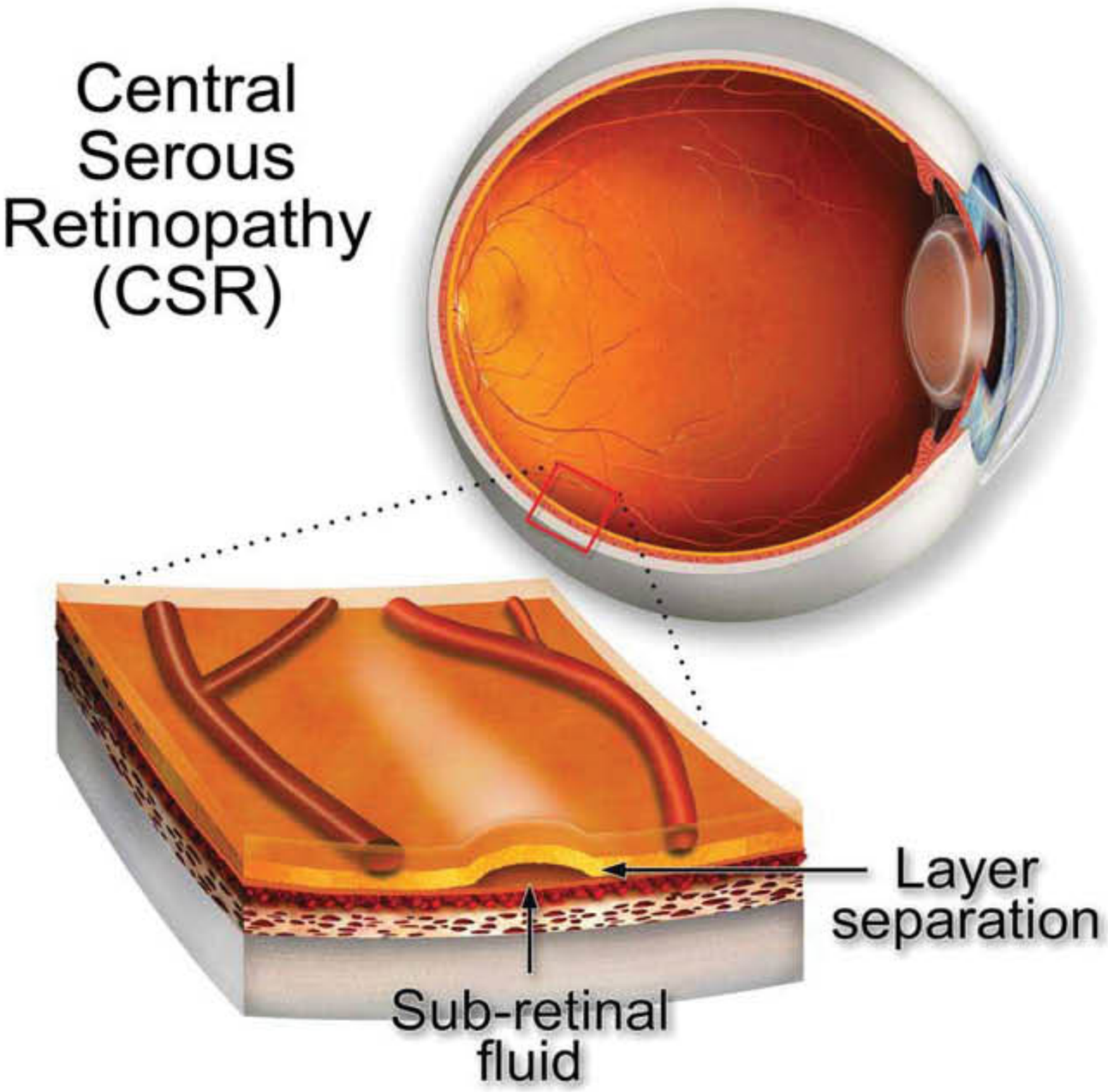
WHAT CAUSES CSR?

In most cases of CSR, the cause is unknown while it is idiopathic, which means no cause can be found to explain why it occurred. However, several possible risk factors have been identified. The condition seems to

occur more frequently in people:

- with a Type A personality (people who are stressed and find it hard to relax)
- who use steroid medication
- during pregnancy
- With Cushing syndrome.

Generally speaking, the way CSR may progress can be grouped into three categories. Most people will recover within 4-6 months without any need for treatment. CSR may lasts up to 12 months depending on regular treatment and precautions. This is very rare but can lead to further changes such as RPE detachment or bullous retinal detachment. In a small number of people, CSR can be chronic, lasting longer than 12 months. In these cases, sight is more at risk because the retinal layers at the back of your eye can become damaged from prolonged swelling.



HOW IS CSR TREATED?

Most people with CSR don't require treatment. If treatment is required then thermal laser or photodynamic therapy (PDT) may be used. When deciding on treatment, the ophthalmologist (hospital eye doctor) would consider:

- How long you have had CSR, as treatment would only be considered after 4-6 months of the initial diagnosis.
- If you experience a recurrence, then treatment may be considered sooner.
- Thermal laser treatment is not given if the fluid is leaking too close to the centre of the macula because it could cause more harm than good.

Yellow micropulse laser appears to be effective for chronic CSR. No retinal damage was seen in any of the eyes, except for minimal hyper fluorescence in one immune compromised patient with RPE changes in both eyes prior to treatment. While most patients responded well within 30 days of treatment, some may need more than one laser treatment. Long-term, prospective studies are needed to confirm the safety and efficacy of this approach. Sometimes another type of treatment called photodynamic therapy is more suitable for people who are at risk of scarring on their macula that could permanently damage their vision. Photodynamic therapy combines laser treatment with a light-sensitive drug to treat the condition.

FAST FACTS

The retina is responsible for translating light taken into the eye as images the brain can understand. The build-up of liquid can cause the retina to detach, and this can cause vision problems. In some cases, no medical intervention is required, and the person will recover their vision after a short period. However, people should see their doctor immediately if they start to notice changes in vision.

Mostly it is still unknown the exact causes of central serous retinopathy, but the some factors may contribute to its development like Stress which is a likely cause of central serous retinopathy. Stress causes the body to produce a hormone called cortisol. In the early stages, a person is likely to notice blurry vision. In some cases, a person may not experience any changes in vision. The fluid that builds behind the eye may drain away on its own.

WHAT TO DO

There are some general lifestyle changes a person can make. Some changes include reducing overall stress levels, such as through exercise, sleeping for at least seven hours each night, avoiding alcoholic drinks and reducing caffeine intake.

(The author is senior Eye Specialist, Asia Colombia Hospital and associated with Shroff Eye Hospital, New Delhi)

HEARING LOSS:

THE URGENT NEED FOR ACTION

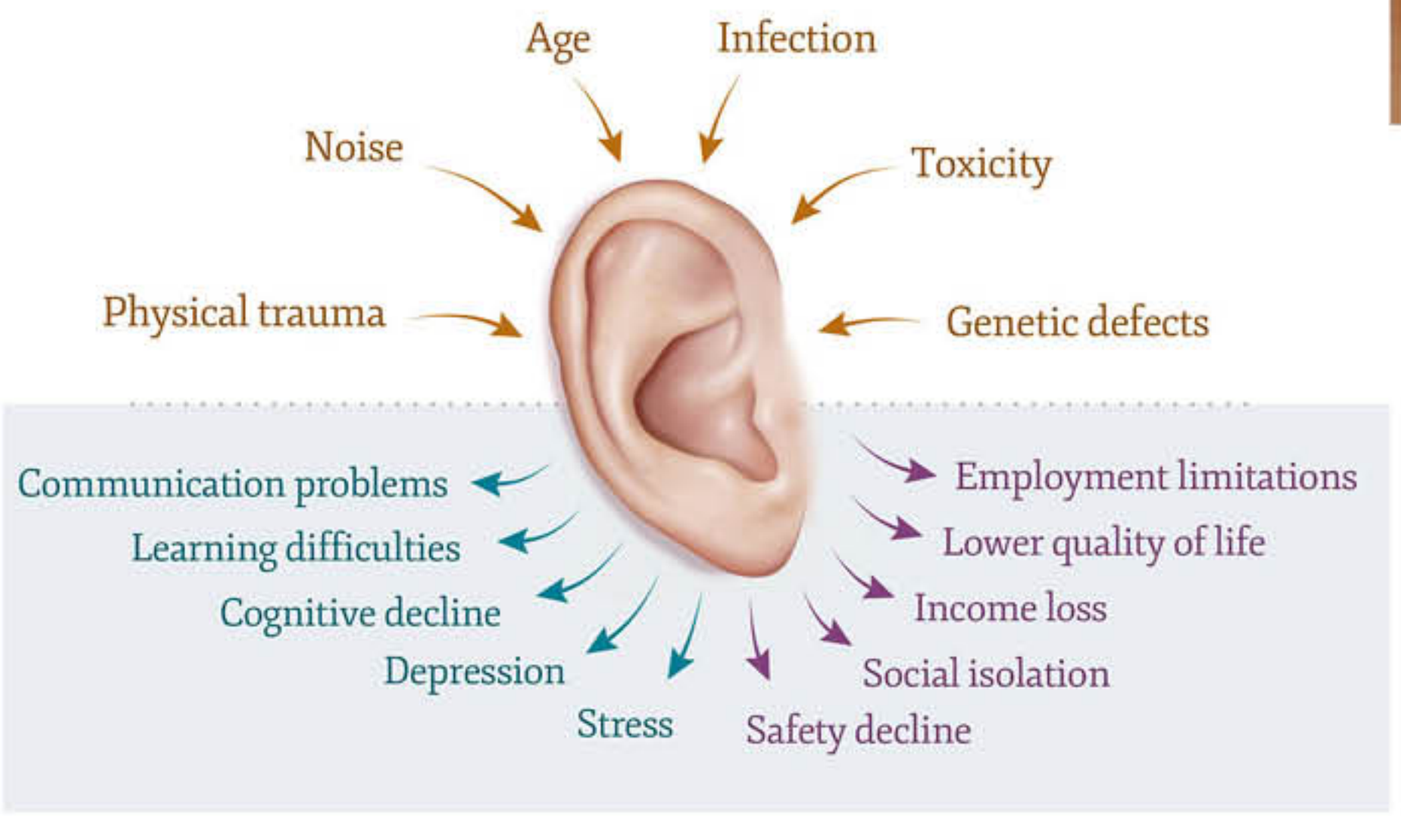
Education of children with hearing impairment in India is just a little over a hundred years old. After Independence, improvements were seen with the establishment of many new schools in the 1950s and many programs based on the new technology came up in the 1960s……

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.

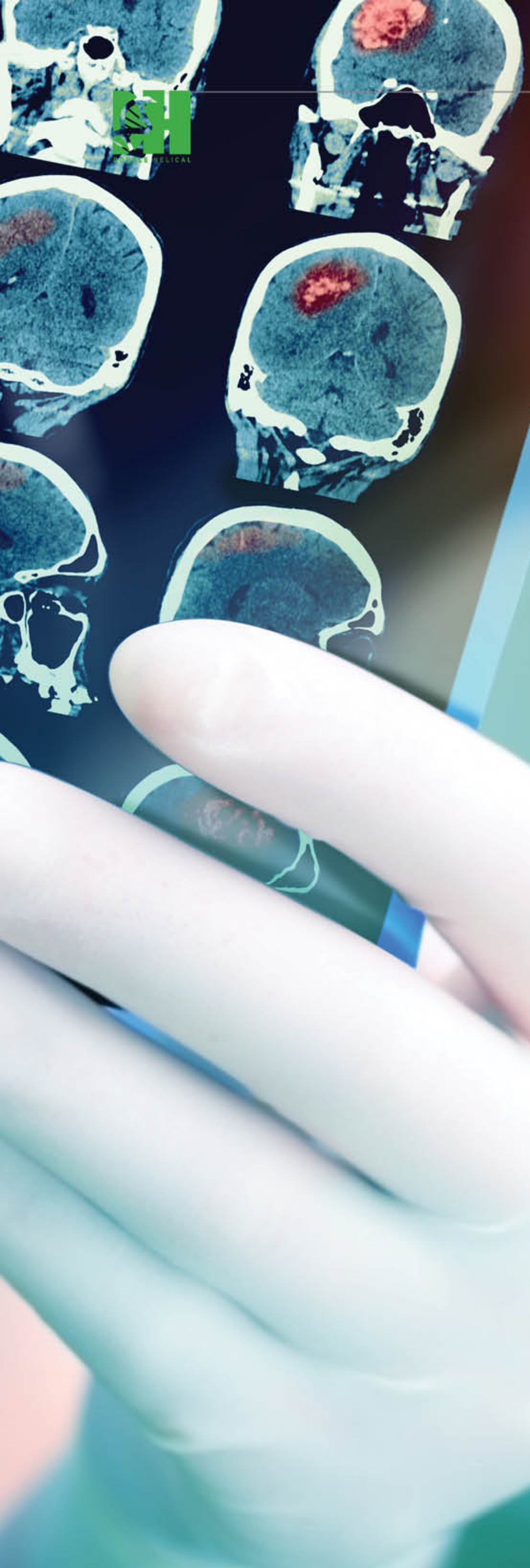
On account of the multidimensional facets of hearing impairment, R & D activities call for in depth studies, both inter and multi-disciplinary. This calls for synchronized development in the core discipline as well as in allied disciplines. Achievements in technology, bio-technology, information technology, 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)

BRAIN TUMOUR

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.....

BY DR ARUN SHARMA



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.

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 oligodendrogliomas. Non glial tumours develop from meninges, nerves, blood 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.

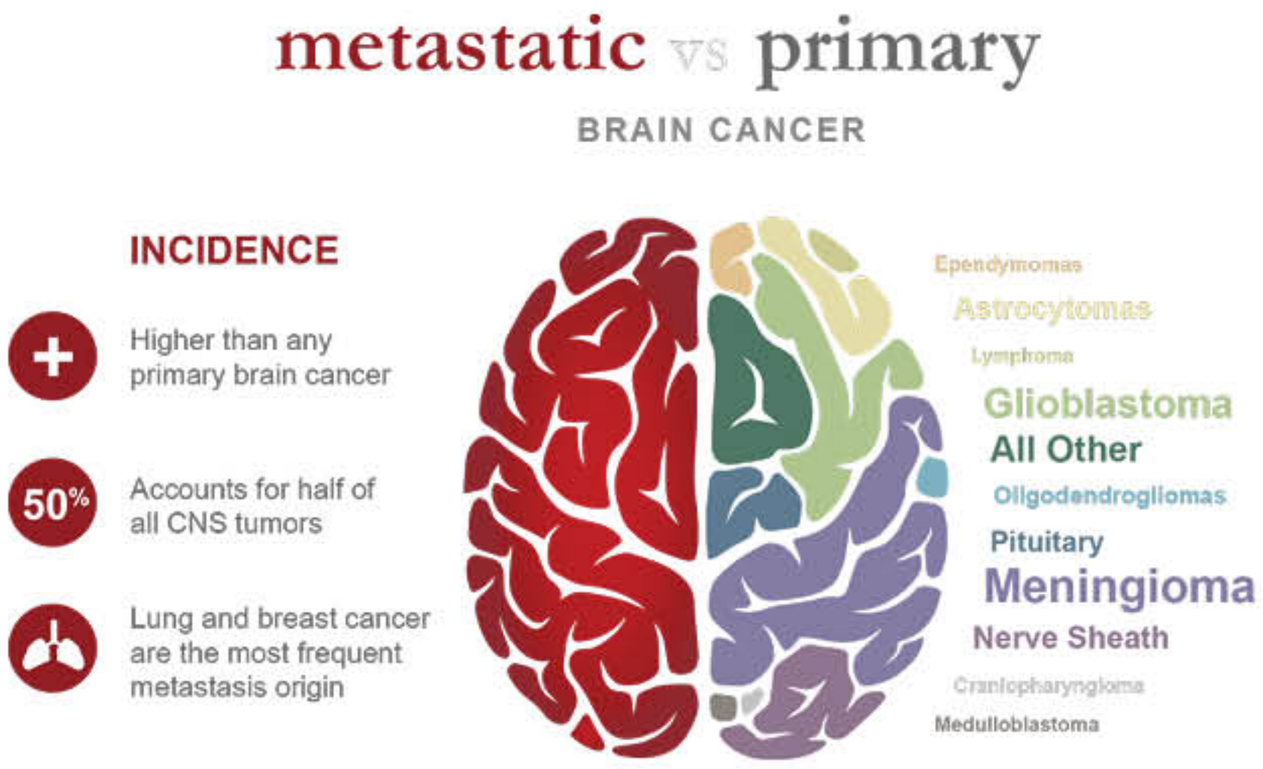
Dr Arun Sharma

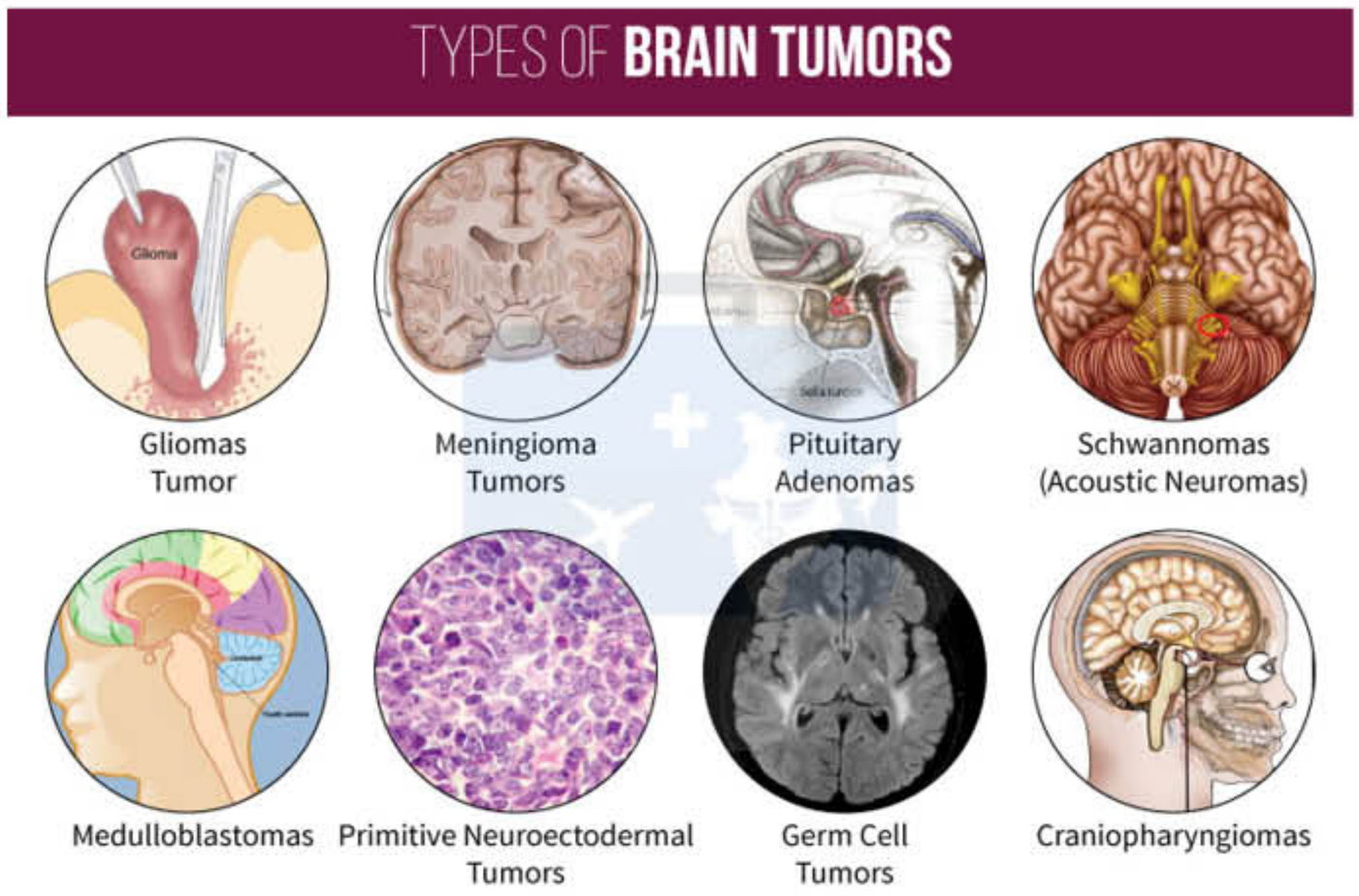
CAUSES AND RISK FACTORS

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

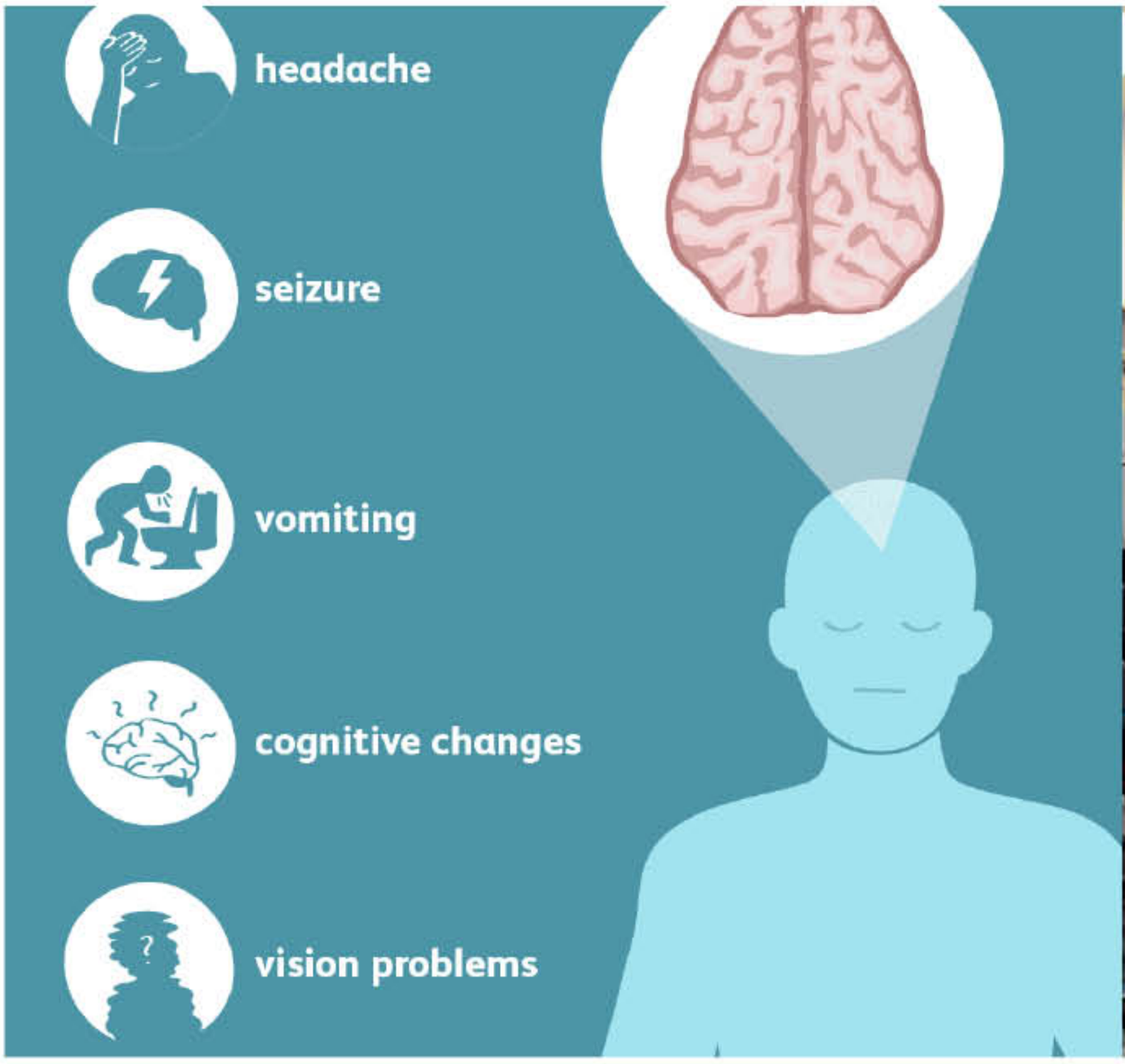
utmost attention and care during the surgery. If the brain tumour is located in a place that makes it accessible for an operation, the neurosurgeon will operate to remove as much of the brain tumour as is safely possible. In some cases, tumours are small and easy to separate from surrounding brain tissue, 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



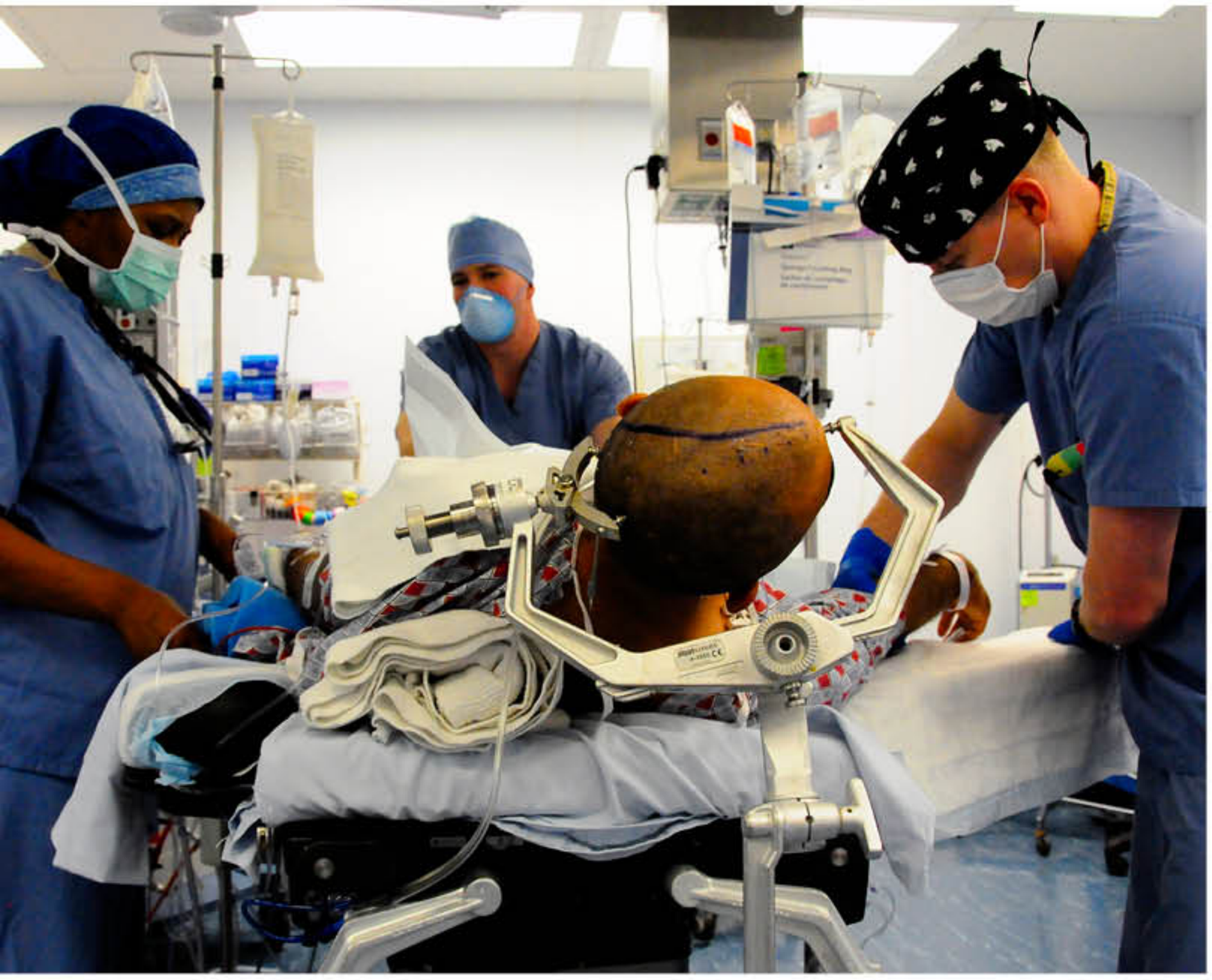
treatment. Today, most tumours can be removed safely with microsurgical techniques in a manner that maximizes tumour removal and minimizes harm to the patients.

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 Senior Neuro Surgeon, Indian Spine Injuries Centre, New Delhi)

REVISITING HEALTHCARE SYSTEMS

In present scenario the healthcare systems are facing one of the worst times. Developing countries have been working on agenda to have universal health coverage for their population to ensure that affordable and safe healthcare is made available and accessible for community at large....

BY TEAM DOUBLE HELICAL

This journey received severe jolt by way of pandemic COVID-19 in very beginning of 2020 and is till tormenting across including most developed health systems. While it has taken heavy toll on human lives, it has made us realize, how poorly we have looked after our healthcare needs.

The global pandemics are worse than hurricanes, which at least give us some notice to prepare for calamity but pandemics do not give that window and that is all the more reason that we need to look at how we re-build our health systems, which are robust and resilient to combat the pandemic and similar calamities and minimize the loss of human lives.

First and foremost, the learning has been that we are in one global village, where health systems are networked for purpose of sharing knowledge and where possible even the resources. No single country ever can claim to handle such a crisis. Some may have excellent infrastructure, some may have pharmaceutical hubs, some may have excellent research institutes, some may have advanced medical technology while some will have

competent human resource and that we have to learn to share these resources for overall wellbeing of populations.

Managing disasters including pandemics especially Covid-19 and Mucormycosis (Black Fugus) are to be dealt by the government? The first line of defense in such calamities is the government infrastructure. This includes availability of necessary hospital beds, doctors, nursing staff and other allied healthcare workforce. Wherever needed the government take support from private sector and for which there are provisions available by way of various regulations.

But it is important that government is ready to be first line of defense and only when situation goes beyond existing capacity within public systems, the private sector should be roped in. COVID-19 in one way has made us to realize, how fragile has been our health systems in general and public health systems in particular.

The public hospitals have huge shortage of doctors and nurses. The critical care bed along with manpower is the main stay to deal with pandemic and we realized there was big gap in this respect. We also

learnt that dealing with such a pandemic, we need to acquire soft skills among our healthcare workers. The doctors need to be motivators who can inspire teamwork among the teams of nursing staff and allied healthcare workers and need to lead the team from front.

These skills are not evident in normal times but assume far more important role. During current pandemic, there were videos viral on social media, which showed panic among healthcare workers and absence of senior doctors from the wards. It created negative perception among population and we saw patients preferring private sector for COVID treatment. While it is established fact that doctors working in public sector are no less competent than their counterparts in private sector, there are few major differences in two set ups.

The public sector healthcare being by and large free, the hospitals are crowded and doctors have to attend to abnormally large number of patients. Doctors in such circumstances have not much opportunity to engage with patients and therefore do not develop empathy or soft communication skills. Second is that public healthcare by design, does not have built-in accountability factor.

Third factor is that unlike private sector, the public sector does not have that personal care factor. For example, the IPH standard provide 45-nurses for every 100-beds, whereas the private sector deploys 100-nurses for 100-beds. In terms of ICU beds, the public sector has on the average 10% ICU beds, as compared to that private sector on the average has 30% beds as ICU beds and therefore these are much better prepared in all respects to deal with pandemic or for that matter any such eventuality.

Indian healthcare systems have two extremes? On one hand we have some of sate of art hospitals capable of delivering quaternity care to the global benchmarks. On the other hands we have poor accessibility of minimum healthcare to large population, more so in tier-III cities and rural regions. In recent study carried out by LANCET, India is rated at 145 out of 195-nations. This is largely on account of poor availability of healthcare infrastructure. For example, India has 1.3 beds per 1000-population as against the norm of 3.5 per 1000. Similarly, we have 1.3 nurses per 1000 as against norm of 2.5 per 1000. We have 0.65 doctors for every 1000 population as against one per thousand. In regard to specialists, we have 80% shortage at Community Health Centers, which make these centers virtually non-functional.

Over and above, the government allocation is mere 1.2% of GDP as against the global average of 9.7%. Under these circumstances, even the normal time healthcare services are not good enough and pandemic time, it becomes nightmare. Luckily private healthcare sector has invested about 3.5% of GDP and which has compensated to a great extent the shortfalls in the healthcare infrastructure. If one can create synergy between the two systems, medical system can drastically improve the overall effectiveness in making healthcare available to the

population.

To realize the constitutional obligation, and also to meet India's global commitment of SDG, there is no alternative than to effectively implement UHC in a phased manner. Strategic consolidation of existing schemes and rolling out of additional schemes is the way through. Government has to have the support of private sector to implement its goal of UHC. Recently the Government announced its ambition of adding 3000 new hospitals in different regions, especially in tier II/III cities.

Without proper professional workforce and team of people to man, these hospitals will not cater towards the required goal. Equal attention is to be paid to enhance the competency skills of manpower required. An aggressive planning to have more specialists through -- normal PG route, through medical colleges, DNB courses and fellowship programs, as without adequate number of specialists, any amount of financial investment will not help in achieving 'Health for all' goal.

Even after addition of 3000 hospitals government has to have the support of private sector to cater to the ever-growing need to cover all. A pro-active support and incentivizing the private sector hospitals can alone realize this goal, as running the hospitals efficiently after they are established is equally important. As partnering with private sector is inevitable; it is equally important to have favorable policy environment created. True spirit of partnership needs to resonate through these policy initiatives.

However, unfortunately it is consistently seen that Government is typically acting as purchaser of the healthcare services. Like a buying customer Government is bargaining hard with the private players, to make then unviable in the long run. Typical short-sighted buyer (of products and services) seldom thinks of seller's welfare and sustainability. He attempts to benefit himself even if it is at the cost of seller's sustainability. The State has to realize it can't afford to behave like typical consumer, as the basic obligation of provisioning healthcare facilities is on its shoulders alone.

Much worst is the situation where the Government is using its sovereign authority to push the private sector around, thinking instinctively that all private player intends to make unreasonable profits. The 'package rates' fixed by the government to buy the healthcare services stand good testimony to the above averments. The healthcare service package rates are arrived typically by bargain or thumb-rule, then being fixed scientifically.

IMA WRITES TO PM MODI AGAINST BABA RAMDEV

Indian Medical Association (IMA) has recently written a letter to the Prime Minister, Narendra Modi to stop the misinformation campaign on vaccination by Yog Guru Baba Ramdev, Owner of Patanjali Ayurved. IMA has urged to take appropriate action under sedition and other offences against Baba Ramdev

According to Dr. J A Jayalal National President, Indian Medical Association is proactively spearheading your commitment for ensuring vaccination of all persons aged 18 and above, as the tool to overcome the Coronavirus pandemic. We are proud to say that the Hon'ble Prime Minister of our country has taken this responsibility on his shoulders to undertake an awareness campaign for educating the masses in India to come forward for vaccination, being provided by the Government of India as free, to be the most efficacious solution for the country to overcome and conquer the menace of Covid-19.

The entire Government of India led from the front by you is working day and night continuously for ensuring smooth availability of requisite quantity of vaccine for effective vaccination of the entire population of the country at the earliest, stage by stage and appealing / reaching out to common man, persuading them to come forward for vaccination to help the entire nation to get rid of Covid-19..

Dr Jayalal said, "We have also proactively supported and endorsed this campaign of the Government and even in the initial days, members and office-bearers of IMA had stepped forward and volunteered to get vaccinated in order to dispel any hesitancy amongst the public in relation to the vaccination program.

With the sincere efforts of the Government and the modern medical health care professionals, India could vaccinate nearly 20 crore people, one of the fastest vaccination drives in the world. We thank your initiative to augment the domestic production of more vaccines and approval of vaccines from other countries to be used in our country."

It is gratifying to note that only 0.06 % of people who have received both the doses of vaccine got minimal infection by a Coronavirus, and very rarely did vaccinated people have any severe infection. It is well proved, that by vaccination we can save our people and country from the catastrophic cascades of this severe infection. Even worldwide, vaccination has been found to be the most effective solution to tackle the Coronavirus pandemic and prevent the loss of lives to the maximum extent possible.

Dr Jayesh Lele, Scretary General, IMA, said, " We are grateful to our Prime Minister for your efforts to address the importance of vaccination in all your public addresses along with Covid-19 appropriate behaviour. We appeal to you to give further motivation for this in your forthcoming MANN KI BAAT episode too. At this juncture, we are pained to bring to your kind notice, two videos where Baba Ramdev, is seen inter alia to be claiming that 10,000 doctors have died in spite of taking both the dose of vaccine and that lakhs of people have died due to allopathic medicine."

He has also claimed that "Allopathy Ek stupid Aur Diwaliya Science Hai" and that thousands of people have died from taking allopathic medicines for treatment of COVID-19 related symptoms. These videos are circulating virally in the social media.

Dr Jayesh Lele, said, "We the members of the modern medicine professional submit that we follow the guidelines and protocols issued by the Ministry of Health through ICMR or the National task force in our treatment offered to millions of people coming to our hospitals."

According to Ravi Wankhade, Past National President, IMA, if someone is claiming that allopathic medicine has killed people. Then it is challenging the Ministry which has issued the protocol for treatment to us as well as the office of the Drug Controller General of India (DCGI) and Central Drugs Standard Control Organisation (CDSCO) which have approved the said allopathic drugs for treating / helping COVID19 patients.

IMA, the professional organization of Modern Medicine Doctors has time and again stated that it respects, acknowledges and compliments all systems of medicine especially our Indian system of Ayurvedic Medicine, as each system is helping our people differently. We are not against any medicine promoted by the Ministry and happy to share the drugs promoted by the AYUSH ministry in most of our public health treatment centers. We opposed certain drugs which were being falsely promoted as "curative" drugs, without any approval from the Ministry / competent authorities. Ministry of AYUSH had also issued a Press Release to Patanjali to stop

advertising / claiming its drug "CORONIL" as a "cure" for Coronavirus.

In this war against the COVID-19 pandemic, modern medicine doctors have been fighting on the front-lines, putting their own lives at risk for treating COVID-19 patients including very critical patients. The country has lost 753 doctors in the first wave and 513 in the second wave. None in the first wave could receive the vaccine and the majority who had died in the second wave also could not take their vaccine for various reasons. However, people such as Baba Ramdev by making false statements are spreading rumours and creating / strengthening [instead of removing] hesitations / superstitions in the minds of the common man thereby discouraging / in effect stopping them from getting vaccinated.

Such rumours and hesitations / superstitions created through false

statements made in the public domain – are leading to a situation where the common man is getting be fooled into doubting the necessity of getting vaccinated and is keeping himself away and not coming forward for imminently essential vaccination exercise – required to be completed as expeditiously as possible.

Baba Ramdev in his publicly made statements has deceitfully and falsely stated that 10,000 doctors have died

According to **Dr Neeraj Nagpal, Convenor, Medicos Legal Action Group, Managing Director MLAG Indemnity and Ex President IMA** Chandigarh, really sir I am grateful that you were a nobody when India was fighting the kargil war and our soldiers were laying down their lives. Were you in your current persona you would have denigrated the Bofors guns, the air force and even the soldiers' sacrifice. Yes we were fighting that war with modern weapons instead of arrows , swords and udankhatola and needed course correction which could only have been done by you. It is a surprise that in your crusade against science and technology you have spared those who developed the rockets, missiles, and satellites in India. We eagerly await Patanjali indigenous weapons of mass destruction (other than you yourself of course)

Your words of wisdom reverberate across the collective conscience of the nation when you talk of natural oxygen cylinders. So many frontline warriors have laid down their lives in this war against corona only because they did not use the oxygen cylinders naturally available to them but only recently discovered by you. It is fortunate that you have the unconditional support of the powers that be who otherwise are very prompt in muzzling any voice of dissent or criticism of the efforts against the pandemic. Such sacrilege and blabbering loquaciousness specially during crisis from any one else would have been rewarded instantly by the Govt with summary arrest and jail term under Disaster Management Act and Epidemic Diseases Act . A person definitely must be of subnormal IQ if he needs to study for 14 years after 12th std to be called a infectious disease specialist. You on the other hand did not even need to be a qualified Ayurvedacharya to find the cure, convince the Government, advertise it, sold it to gullible public and declared victory over Corona while the rest of the world is still grappling with it.

The doctors of modern scientific medicine are definitely not sarvgun sampan as expressed so eloquently by you since they can't even save themselves. I am glad that since you are immortal non believer in modern science the nation and the world will benefit tremendously from your thousands of years of life and consequential experience.

"I wish your followers have faith in your words that it is modern scientific medicine which is actually killing people and hence avoid clogging the hospitals emergency wards. I also wonder whether your current crusade is not at behest of your masters to divert the attention of the public from the massive failure of governance," Dr Nagpal, said.

in spite of taking two doses of vaccination. It is a deliberate move to stall the efforts of vaccination to reach our masses and it needs to be curtailed immediately.

There are numerous reports from various parts of the country where the frontline workers who have been tasked with carrying out the vaccination drives, including ASHA workers – also getting impacted by false and misleading assertions Baba Ramdev and others against vaccination, that they are being assaulted and attacked by people who have fallen for such rumours and superstitions. In some cases, it has been reported that people are fleeing the vaccination drives even by jumping into the river.

This clearly demonstrates the widespread fear and panic created in the minds of the common public through the false, scurrilous and malicious statements made by people such as Baba Ramdev who enjoy huge public following and are able to brainwash the layman.

We are also pained to witness that the invaluable services rendered by nearly 10 lakh Modern medicine doctors, with dedication to keep the mortality of our corona patients around 1 percent despite limited manpower and resources [which many developed countries also couldn't achieve] – are being ridiculed and mocked, and being called a "stupid system".

We appeal to you to take appropriate action against all individuals including Baba Ramdev who are spreading rumours and superstitions [for their own vested interests], and are viciously propagating the message of fear of vaccination and challenging the Government of India's protocols for treatment.

Baba Mr. Ramdev, by spreading rumours, falsehood and superstitions amongst the public - through his false, scurrilous and malicious statements – on the one hand is discouraging / stopping people from coming forward for vaccination thereby completely frustrating the sincere efforts being made by the Government in this regard and on the other hand his only objective being achieved is to make profits and gains at the expense of the lives of millions of people.

Further, by spreading disbelief and rumours about the Coronavirus vaccines and as a result, the vaccination campaign of the Government of India, Baba Ramdev is not only causing disaffection towards Government but is also committing acts which have disturbed and are likely to further disturb public tranquility.

Baba Ramdev is getting success in persuading people, contrary to the campaign of the Government of India for vaccination of the entire country expeditiously for overcoming and conquering the pandemic – is deeply hurting the national interest and his acts of omission and commission in this behalf are clearly constituting an offence of working against the interest of the country.

This in our opinion is a clear-cut case of sedition besides and in addition to causing irreversible damage to the national interest and the poor masses of this country. Such persons should be booked immediately, without any delay, under the charges of sedition and all other applicable provisions of law. We appeal to you to take strict action to ensure that the modern medicine doctors who are risking their lives on a daily basis to treat and help the COVID-19 patients – do not lose their morale or motivation on account of such false and scurrilous statements made in the public domain.

IMA is committed to serving on the frontlines with the Government in this Covid-19 war, however, it needs your support against such attempts to ridicule and mock the modern medicine doctors, and to cause disaffection against the Government and its vaccination program, thereby also endangering the health and safety of the masses.

FALSE PROPAGANDA...

A vicious, malicious, purposeful, utterly false propaganda is carried out by a section as a diversionary tactic as they don't have any real answers to the rightful objections raised by the entire medical fraternity under the banner of IMA..... **BY DR RAVI WANKHEDKAR**

They were raised to protect the health of common man and against the anti national, anti government utterances. Misleading objections to government prescribed treatment guidelines and anti vaccination speech is in direct conflict with the continuous efforts of our government lead by Hon PM to control this pandemic. Instead of presenting a united front, creating useless controversies just to promote Business is highly unethical and objectionable. Celebrities should use their status to promote Covid appropriate behavior and vaccination.

Boosting morale and appreciating the frontline health care workers is need of hour,as our Hon PM always does.

To demean the proven and time tested modern medicine in such trying times is nothing but playing with health of gullible common people. Prior to the formation of IMA, four All India Medical Conferences had been held the first at Calcutta in 1917 under the Presidentship of Lt. Col. Raghavendra Rao, the second at Delhi in 1918 with Sir Nil Ratan Sircar as the President, the third in 1919 with Dr. M.. N. Odedar as its President and the Fourth at Nagpur in 1920 under the Presidentship of Rao Bahadur Dr. Maharaj Krishnan Kapur. It was at the 5th conference held at Calcutta on 28th December, 1928 under the Presidentship of Dr. G. V. Deshmukh of Bombay, that a resolution was adopted forming an All India Medical Association with the objects of promotion and advancement of medical and allied sciences in their different branches, the improvement of public health and medical education in India and the maintenance of honor and dignity of the medical profession. In the year 1930, the All Indian Medical Association and the body was duly registered under the Societies Registration Act, XXI of 1860.

The association had come in to being at a time when there was political unrest and the country was passing through big turmoil. Yet, it was a matter of great satisfaction that the stalwarts of the medical profession in those days like Dr. K. S. Ray, Sir Nil Ratan Sircar, Dr. B. C. Roy, Dr. M. A. Ansari, Col. Bhola Nath, Major M. G. Naidu, Dr. B.N. Vyas, Dr. D. Silva, Dr. N. A. Ghosh, Dr. D. A. Chakravarthi, Dr. Viswanathan, and Capt. B. V. Mukherjee actively participated in the promotion of the Association. Some of these stalwarts were also active in the Indian National Congress and had their terms in the jail for participating in the struggle for Independence of the country.

Though the Association was formed with only 222 members. Yet even with this numerical strength, it could achieve its position of strength and command respect from the British rulers. It could prevent the appointment of British rulers. It could prevent the appointment of British IMS Officer as a Commissioner of Medical Education in 1929 and it could achieve to organize an all India Medical Register and include the licentiates in it. The Medical Council of India Act was got amended to have an elected President in place of a nominated one and it was a matter of a pride that Dr. B. C. Roy, one of the most illustrious past Presidents of IMA, became the first elected President of Medical Council of India.

The Headquarters Office of the IMA was originally located in Calcutta. At the suggestion of Dr. S. C. Sen supported by Dr. B. V. Mulay, Dr. Chamanlal C. Mehta and Maj. General Amirchand, the IMA Headquarters was shifted to Delhi in January 1949, after the attainment of Independence.

During the British Rule, some selected members of the profession were members of the British Medical Association which had branches in India. The stalwarts of Nationalist IMA ultimately succeeded in reaching an agreement with British Medical Association that they would have no branches in India.

The list of national presidents for last 92 years , since inception of IMA is a testimony of the secular credentials.IMA and the entire medical fraternity has never discriminated it's patients or anyone on basis of Caste, Creed, Religion, Gender or Nationality.

Neither has it been involved in any unethical or unlawful activities. It has respected all recognized systems of Medicine of our country. The opposition to mixing up systems also is protect the purity and thereby the growth of each system.The so called "Contractor/Thekedar" is in fact doing more harm to Ayush systems by promoting quackery at the cost of official, real and original Ayush medicines for selfish business interests.

His so called 3-6 months course to create "unqualified drs" to serve in his own Business is an insult to hard working recognized and registered Ayush graduates who spent minimum 5 & half years to be qualified.

(The author is Past National President, IMA)

DON'T OPPOSE MODERN MEDICINE

It is unfortunate that in the country of origin of Ayurved it is being discussed as a valid pathy by a person called Ramdev who himself is not a qualified Ayurved specialist & is using it against Modern Medicin…..… **BY DR VINAY AGGARWAL**

"Many of modern medicine doctors have lost their lives treating Covid-19. Nurses, paramedical staff and Safai karamcharis have also got martyred. To make casual remarks about their death should not be tolerated."

Ayurved has existed for thousands of years and its accomplishments cannot be denied. But to pit it against Modern Medicine is deplorable. Baba Ramdev is doing this to divert the issue from his derogatory statements against Modern Medicine Science Doctors by giving it even religious colour.

Today the issue that needs discussion is ' Over coming to Coronavirus pandemic' Almost 25 million cases with more than 3 lac deaths in India alone have taken the Nation with surprise and so much despair. Modern Medicine has done extensive research on it and is making continuous efforts to understand the virus and its clinical implications further. In such a scenario we should applaud it, instead of trying to run down one pathy against another.

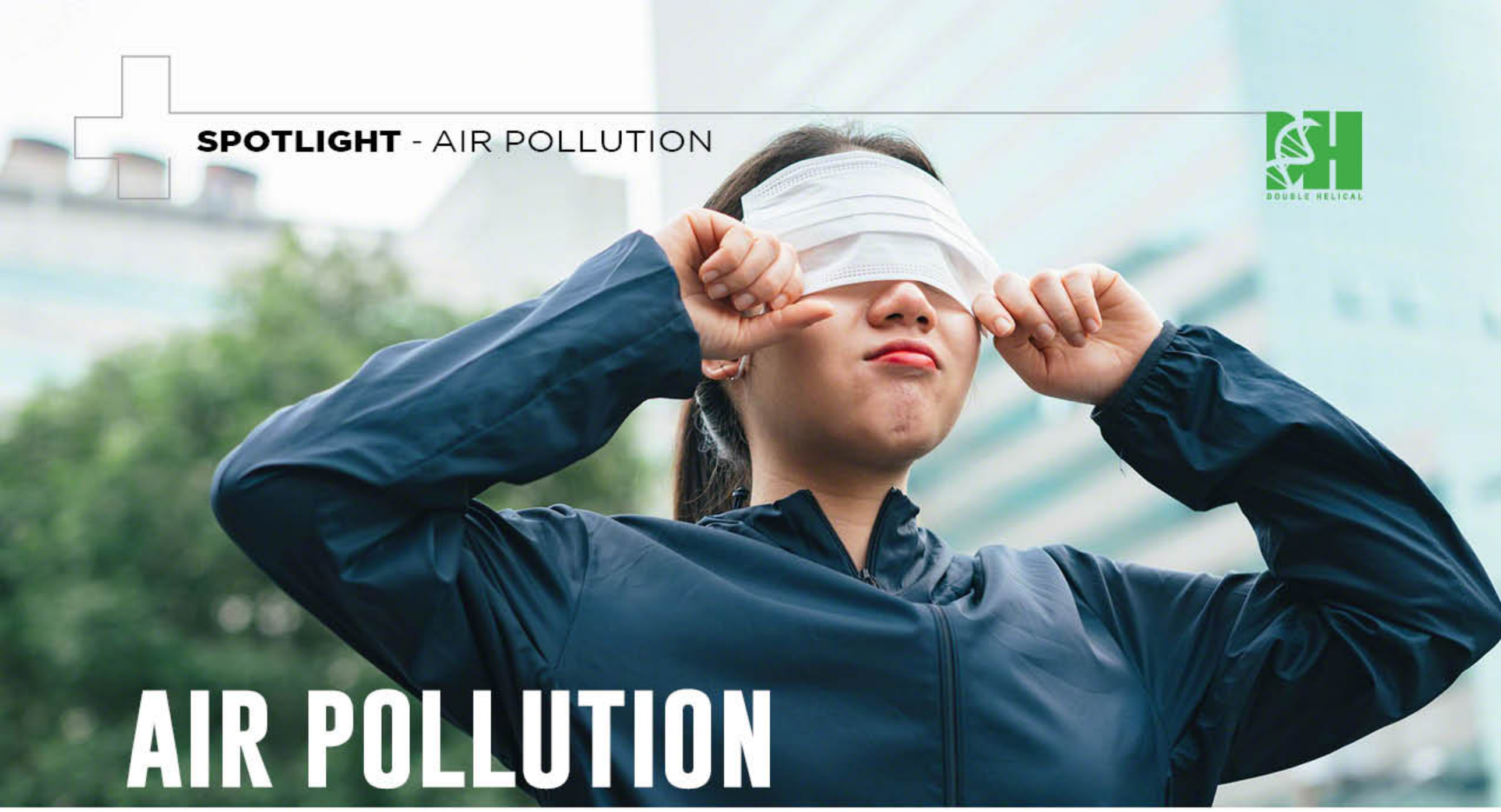
Vaccination is recognized worldwide as the most potent weapon against the virus. To denigrate the vaccine should be considered as an affront to humanity and anti national activity. Deaths are unfortunate but to ascribe them as failure of treatment is travesty of justice. By stating that more people have died of treatment than without treatment, Ramdev is trying to create doubt in the minds of general innocent public regarding treatment of Covid-19. All hospitals are treating the patients in accordance with, the guidelines given by the Central government, through the Corona Task Force including representatives of ICMR, AIIMS, National Virology Institute and other prominent medical institutions with inputs from abroad.

Many of modern medicine doctors have lost their lives treating Covid-19. Nurses, paramedical staff and Safai karamcharis have also got martyred. To make casual remarks about their death should not be tolerated. Those who have died didn't commit suicide; they laid their lives trying to prevent others from dying. One should not just have respect for them but should have reverence.In such a pandemic we need support of every Indian.

I hope Ramdev understands this and comes forward to support the Corona warriors.

I appeal to all my medical and non-medical friends to pay homage to Corona warriors. The best way would be to talk to your friends and community about their sacrifices. In this pandemic all of us are using Social media much more. Let's use it to dispel the fake propaganda by Ramdev about our system of medicine. Remember it's not Ayurved versus Modern Medicine, its real Doctors versus a unqualified quacks who masquerades as "Mr. Know it all". It's our duty as a Doctor and as a citizen to counter this false propaganda. Let's make videos, post statements, articles etc. to counter the propaganda against Doctors. Remember its not IMA versus someone. It's your beliefs versus someone who is denigrating your beliefs. IMA as your representative body would do its best. But more importantly it's you who have to defend your scientific medicine. Let's fight this menace together.

(The author is Past Former National President IMA)



AIR POLLUTION AND EYE DISEASES

There is an often overlooked association of air pollution and eye Diseases. The bad quality of environmental air can result in premature break-up of the preocular tear film and corneal epithelial damage causing significant irritation and discomfort……

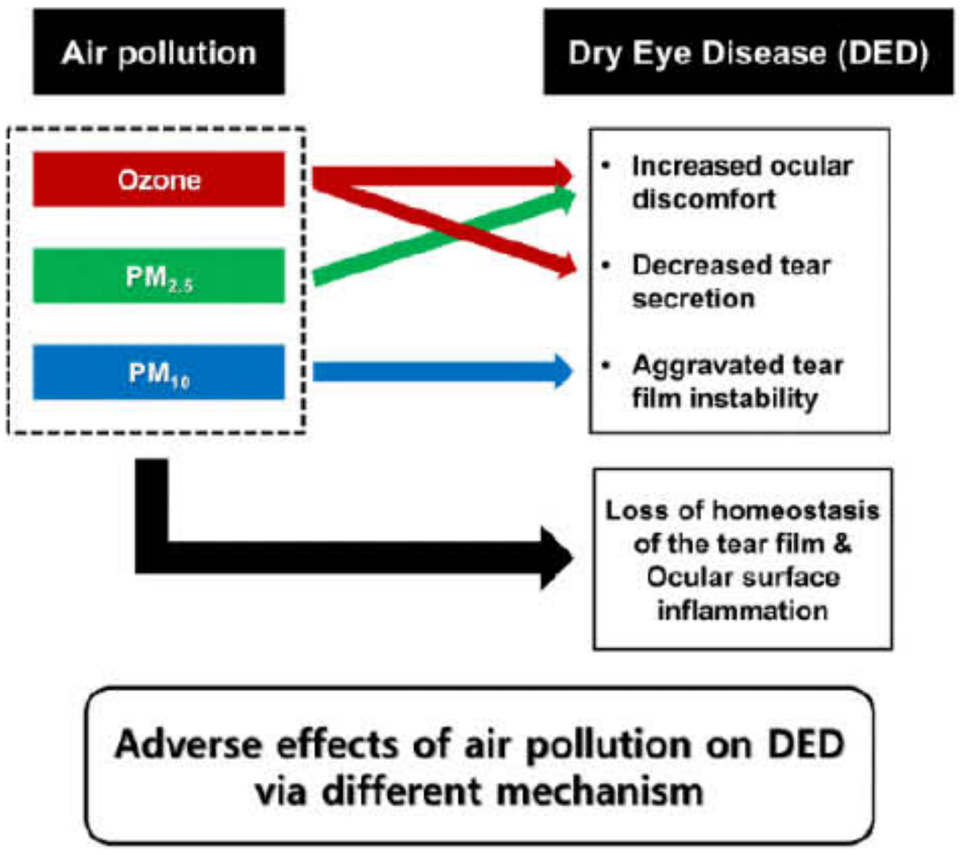
BY DR VIKAS VEERWAL

Air pollution is a serious health issue that impacts quality of life, as long term exposure is associated with respiratory and cardiovascular problems, as well as increased hospital admissions and healthcare spending. These phenomena have been observed in the west as well as in Asia, and with urbanization, such problems are expected to worsen with time.

In severe cases, pollution can even increase mortality but by improving environmental conditions, it has been shown that health indicators can respond favourably. According to the World Health Organization, air pollution consists of different particulate including particulate matter (PM), ozone, carbon monoxide (CO), nitrogen dioxide (NO2) and sulphur dioxide (SO2). The number after PM refers to the aerodynamic diameter of the particles; i.e. PM10 refers to particles <10 μm, and PM2.5 refers to particles less than 2.5 μm. PM10 is generated from construction and road dust, whilst smaller particles (PM 2.5) are derived from combustion sources such as wood and biomass fuels. Regardless of the type of pollutant, pollution is a widespread issue as it can affect occupations both outdoors and indoors.

Eye structures are continuously and directly exposed to the environmental air pollutants. Due to the constant contact of the preocular tear film, cornea and conjunctiva with the surrounding air, toxins can damage or alter the physiology of these ocular structures. The quality of environmental air can result in premature break-up of the preocular tear film and corneal epithelial damage causing significant irritation and discomfort.

Air pollution can affect the eye, causing complaints of eye redness, irritation, watering, foreign body sensation, and blurring of vision; however the link to the environment



is sometimes overlooked by eye professionals. Conditions associated with air pollution are primarily: different forms of conjunctivitis, allergies, red eye syndrome, dry eye syndrome and meibomian gland dysfunction.

High concentration of toxic pollutants in the air may also cause a narrowing of the retinal vessels, which leads to disorders in its microcirculation. The connection between air pollution and cataract has also been suggested. Since the ocular surface can be easily examined, it can also serve as an indicator of the impact of pollution on health. Despite the importance of the effects of pollution on the eye, research in this area has remained limited in regards to direct associations of the types of pollution with different ophthalmological abnormalities.

POLLUTION CAUSING THE EPIDEMIC OF DRY EYE SYNDROME (DES)

Our tear film is composed of three components: aquatic, lipid and mucous. Disorders in production, vaporization or composition of tear film are thought to be a cause of dryness of the eyes. Dry eye syndrome

(DES) is the most common ophthalmic condition, its frequency varying between 11–58%. Many factors can have an influence on the occurrence of DES's symptoms: smoking cigarettes, drinking alcohol, low humidity, air pollution, sunlight exposure, wearing contact lenses, socio demographic factors, ophthalmic surgeries in the past. Schirmer's test and break-up time (BUT) test are often used in diagnosing DES.

In people living in the big cities disorders of tear film were observed more often. In inhabitants of polluted metropolis results of Schirmer's test and BUT test were significantly lower than in those living outside of the city (13.4 mm vs. 16 mm; 13 s vs. 19.2 s). In one study conducted at **All India Institute of Medical Sciences**, Delhi it was observed that environmental conditions have a very significant effect on ocular surface health and incidence of subclinical ocular surface changes was high among persons travelling in highly polluted area.

Inhabitants of strongly polluted areas of Delhi in India complained about reddening and irritation of the eyes two times more often than the control group. A study conducted on 55 inhabitants of Brazil showed the association between exposure to a high concentration of NO2 and disorders of the tear film and a feeling of eye discomfort.

It is more of a concern for wearers of contact lenses, because in this group the influence of air pollution is more visible. Another study held in Southern Korea on 16,824 people showed the connection between high levels of ozone and NO2 in the air and low humidity and occurrence of DES. High level of PM10 and NO2 in big cities was associated with shortening of break-up time, indicating increased dryness.

USE OF FACE MASKS AND DRY EYE DISORDERS

With the current Covid-19 pandemic, use of face masks has

certainly become essential. Widespread use of face masks, while helps the prevention of novel corona virus transmission, it has shown to increase ocular dryness and irritation. Patients wearing masks for extended periods may be more likely to experience these symptoms. With use of face masks air blows upward from the mask into the eyes. This increased airflow likely accelerates the evaporation of the tear film which, when continuous for hours or days, may result in ocular surface irritation or inflammation.

WHAT CAN BE DONE TO PROTECT YOUR EYES BETTER

There are many steps you can take to help minimize the effects of air pollution on your eyes.

1. Avoiding exposure: The golden rule, of course, would be to avoid exposure to harmful pollutants. On days when the pollution levels are noted to be high or there is a public health warning, stay indoors. You can easily check current air quality index on your phone using different apps that are readily available. In case you cannot avoid exposure to the environment and have to step out, make sure you wear protective eyeglasses which will minimize your exposure to the pollution causing agents.
2. Hand hygiene: Wash your hands often and try not to touch your eyes
3. Increase water intake: Stay hydrated as it helps in adequate tear formation. It becomes imperative when external factors such as smog increase your chances of dry eyes and eye irritation.
4. Eat Healthy: Have a healthy diet rich in Omega 3 fatty acid including lots of green leafy vegetables, carrots, spinach, almonds, walnuts, berries and fish which are extremely good for the eyes.
5. Wear sunglasses when outdoors.
6. Avoid eye rubbing: In case of significant irritation, avoid rubbing your eyes repeatedly as it predisposes to risk of infections. Cold compresses of the eye may help in reducing itching and irritation sensations.
7. Lubricating eye drops: While many over-the-counter lubricating drops are available in the market, it is essential to get your eyes examined by your Ophthalmologist before using any eye drops.
8. Reduce screen time: While the COVID pandemic has significantly increased our screen time, we need to understand that long hours of exposure to different devices exacerbates dry eye symptoms. Avoid the excessive use of screen devices, including mobile phones and laptops. If essential, ensure adequate and frequent periods of rest to avoid eye fatigue, dry eyes, and computer vision syndrome.
9. In case of persistent irritation, redness or itching, you must visit your Ophthalmologist for an evaluation. Appropriate and timely intervention can prevent long term damage to your eye and improve your symptoms.

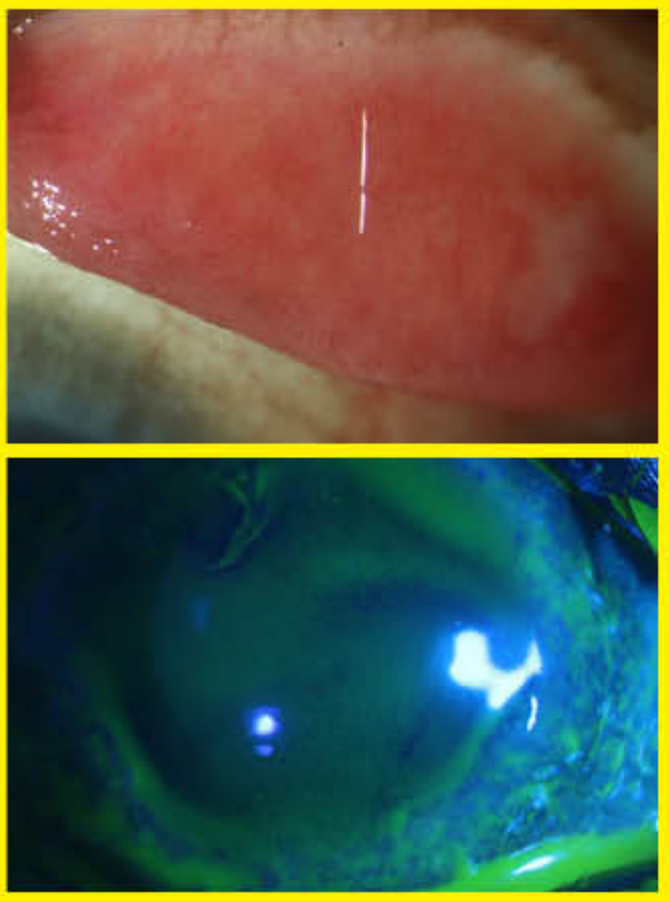


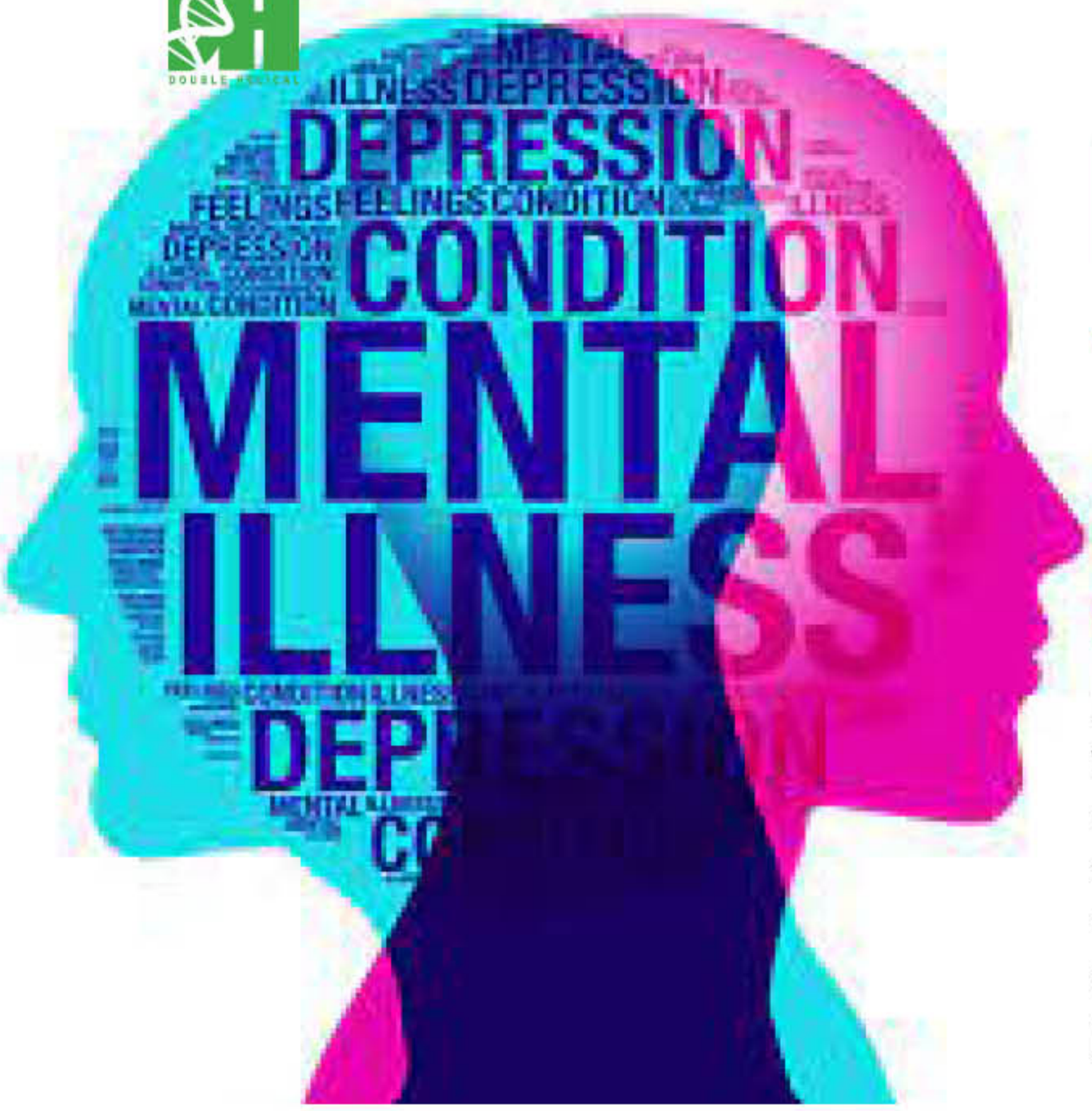
Figure: Images showing allergic reaction of the conjunctiva and dry eye causing poor ocular surface resulting in discomfort, photophobia and irritation to the patient

CONCLUSION

The dramatic rise of air pollution in the big cities all over the world in recent years caused growing concern about its adverse effect on human health. Eyes remain particularly vulnerable to air pollution. Both chronic, long-lasting and short-term exposure is harmful with exposure to a high dose of toxic air pollutant resulting in symptoms of conjunctivitis or dryness even on the same day. Tear film, cornea, and conjunctiva have constant contact with ambient air, so toxins that it contains can directly affect them and interfere with its functions.

Limiting exposure to high levels of air pollutants, using protective eye gear, lubricating drops when advised, and timely visiting an Ophthalmologist to get yourself evaluated are some of the measures that can help us through this environmental crisis. However, the most important issue is to urgently introduce systemic solutions to reduce the levels of air pollution before significant and permanent damage to our health takes place. Individuals, society, organisations and government need to work at every level to tackle this significant health problem.

(The author is Associate Consultant - Cornea, Cataract and Refractive Services, Centre for Sight, New Delhi)



REALIZE YOUR OWN ABILITIES

Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to make a contribution to his or her community.....

BY DR ALEXANDER THOMAS

The WHO stress that mental health is "more than just the absence of mental disorders or disabilities." Peak mental health is about not only avoiding active conditions but also looking after ongoing wellness and happiness.

THE FOLLOWING ARE SOME OF THE RISK FACTORS:-

1. CONTINUOUS SOCIAL AND ECONOMIC PRESSURE

A. Modifiable factors for mental health disorders include:

Socioeconomic conditions, such whether work is available in the local area, Occupation, A person's level of social involvement, Education, Housing quality

B. Non-modifiable factors include gender, age and ethnicity

2. BIOLOGICAL FACTORS

Genetic family history can increase the likelihood of mental health

conditions, as certain genes and gene variants put a person at higher risk.

However, many other factors contribute to the development of these disorders.

Having a gene with links to a mental health disorder, such as depression or schizophrenia, does not guarantee that a condition will develop. Likewise, people without related genes or a family history of mental illness can still have mental health issues. Mental health conditions such as stress, depression, and anxiety may develop due to underlying, life-changing physical health problems, such as cancer, diabetes, and chronic pain.

COMMON MENTAL HEALTH DISORDERS

The most common types of mental illness are as follows:

- Anxiety disorders
- Mood disorders
- Schizophrenia disorders

A - ANXIETY DISORDERS

People with these conditions have severe fear or anxiety, which relates to certain objects or situations. Most people with an anxiety disorder will try to avoid exposure to whatever triggers their anxiety.

PANIC DISORDERS

People with a panic disorder experience regular panic attacks,

which involve sudden, overwhelming terror or a sense of imminent disaster and death.

PHOBIAS

Phobias are deeply personal, and doctors do not know every type. There could be thousands of phobias, and what might seem unusual to one person may be a severe problem that dominates daily life for another.

OBSESSIVE-COMPULSIVE DISORDER (OCD)

People with OCD have obsessions and compulsions. In other words, they experience constant, stressful thoughts and a powerful urge to perform repetitive acts, such as hand washing.

POST-TRAUMATIC STRESS DISORDER (PTSD)

PTSD can occur after a person experiences or witnesses a deeply stressful or traumatic event.

B.MOOD DISORDERS

People may also refer to mood disorders as affective disorders or depressive disorders.

People with these conditions have significant changes in mood, generally involving either mania, which is a period of high energy and elation, or depression. Examples of mood disorders include:

• **MAJOR DEPRESSION:** An individual with major depression experiences a constant low mood and loses interest in activities and events that they previously enjoyed. They can feel prolonged periods of sadness or extreme sadness.

• **BIPOLAR DISORDER:** A person with bipolar disorder experiences unusual changes in their mood, energy levels, levels of activity, and ability to continue with daily life. Periods of high mood are known as manic phases, while depressive phases bring on low mood. Read more about the different types of bipolar here.

• **SEASONAL AFFECTIVE DISORDER (SAD):** Reduced daylight triggers during the fall, winter, and early spring months trigger this type of major depression. It is most common in countries far from the equator. Learn more about SAD here.

C.SCHIZOPHRENIA DISORDERS

Mental health authorities are still trying to determine whether schizophrenia is a single disorder or a group of related illnesses. It is a highly complex condition.

Signs of schizophrenia typically develop between the ages of 16 and 30 years, according to the NIMH. The individual will have thoughts that appear fragmented, and they may also find it hard to process information.Schizophrenia has negative and positive symptoms. Positive symptoms include delusions, thought disorders, and hallucinations. Negative symptoms include withdrawal, lack of motivation, and a flat or inappropriate mood.

TREATMENTS

1 - PSYCHOTHERAPY, OR TALKING THERAPIES

This type of treatment takes a psychological approach to treating mental illness. Cognitive behavioural therapy, exposure therapy, and dialectical behaviour therapy are examples.

Psychiatrists, psychologists, psychotherapists, and some primary care physicians carry out this type of treatment.

It can help people understand the root of their mental illness and start to work on more healthful thought patterns that support everyday living and reduce the risk of isolation and self-harm.

2 - MEDICATION

Some people take prescribed medications, such as antidepressants, antipsychotics, and anxiolytic drugs.

Although these cannot cure mental disorders, some medications can improve symptoms and help a person resume social interaction and a normal routine while they work on their mental health.

Some of these medications work by boosting the body's absorption of feel-good chemicals, such as serotonin, from the brain. Other drugs either boost the overall levels of these chemicals or prevent their degradation or destruction.

3 - SELF-HELP

A person coping with mental health difficulties will usually need to make changes to their lifestyle to facilitate wellness. Such changes might include reducing alcohol intake, sleeping more, and eating a balanced, nutritious diet. People may need to take time away from work or resolve issues with personal relationships that may be causing damage to their mental health.

People with conditions such as an anxiety or depressive disorder may benefit from relaxation techniques, which include deep breathing, meditation, and mindfulness. It is also noted that having a support network, whether via self-help groups or close friends and family can also be essential to recovery from mental illness.

(The author is National President, Association of Healthcare Providers India)

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