

ios

March 2020 | Volume 17 | Issue 4

Times

The Official News Letter of Indian Orthodontic Society



*Indian Orthodontic Society
Pledges to Fight the*

COVID-19 OUTBREAK

*With Its Members, as
Responsible Citizens*



President's Message

Respected IOS Members,

These are extra ordinary times that we are going through with the Covid-19 pandemic. My prayers and good wishes for the safety, good health and well-being of all the members of our society. The Task force set up to guide the members on safe practice and measures have done a great job of preparing the necessary documentation and safe practices to be followed in the battle to prevent the spread of corona virus.

As a precautionary measure we have postponed all the IOS activities for the month of March and April and hope that the proactive measures taken by the government will contain the spread of the infection. Let us all extend our full cooperation to the government during the period of Lock Down to avoid practice and stay at home and spend time with family and peruse your hobbies that was not possible due to our busy lifestyle.

The only activity for the month of March was the D9 Conclave at Chennai, it was an excellent opportunity to interact with the Presidents and Secretaries of all the nine specialties in the presence of DCI President. A fruitful summit and an exercise towards projecting IOS to the Dental fraternity as inclusive society.

My humble request to all the members to follow the directives of the Central/State Government toward the 21 days lock down and be a responsible citizen by staying at home and contribute towards breaking the chain and prevent the spread of the dreaded corona virus. Together as vigilant and responsible citizens we shall overcome the threat and come out victorious against the war against the invisible enemy that has threatened the human race. Please take care of yourselves and your loved ones in these difficult times.

Thank you,
Jai IOS

Dr. Silju Mathew

Indian Orthodontic Society



Secretary's Message

Dear members of the IOS,

The world and our country is going through unprecedented times with the Corona Virus dominating the globe, the news and our thoughts. These are emotional and challenging times since life as we know it has changed over a matter of a few days giving us pause to reflect, introspect and reboot.

The last event attended on behalf of IOS was the D7 meeting in Chennai where presidents and secretaries of nine specialty organizations met on 13th & 14th of March with the president of the DCI as chief guest. Subsequent to that all workshops, programmes in the IOS calendar of events have been cancelled or postponed and the IOS EC has been quick and proactive in sending out an advisory as early as 13th March for the benefit of our members. The IOS Corona task force worked overnight to put together a fact sheet to help our members stay safe and make the right decisions in dental situations that are very high risk. Patient education pamphlets were also sent and put up on the IOS website and FB page. The President IOS has also sent a personal message to all members along with a second advisory from the task force.

Since then, things have quickly changed and this vast nation has gone into lockdown. Since the first Corona case seen on Jan 31st in India, things have escalated but probably less quickly than in other parts of the world where the situation has been surreal and uncontrollable. The covid dashboard launched gives us a real time picture of the infections in the country, statewise distribution, clusters and the overall progress of the epidemic at <http://www.covid19india.org>. This curve controls our lives over the next few weeks and maybe months. But we can control it too.

Let us hope and pray that the decisive and swift measures taken by the government is successful in controlling this pandemic in India. Let us do our bit by staying at home and saving lives. As health professionals, let us strengthen the government's hand in educating other and let us also help those that we employ in our clinics and home to stay at their homes so that we see each other on the other side of this lockdown healthy and safe.

Stay Home! Flatten the curve.

Jai Hind! Jai IOS.

Dr. Sridevi Padmanabhan

Hon. Secretary, IOS



Editor's Message

Respected IOS Members,

The COVID-19 outbreak is shaking the world to its roots. Every one of us, are undergoing a tumultuous phase. Its testing times for us. Let us stay united. Let us act as responsible citizens. The Government with its officials, health authorities and para medical staff is fighting a war against SARS-COV-2. At this juncture, we have a very very simple responsibility- to stay at Home and never make a contact with the outside world. This mere responsibility can totally break the chain of this Pandemic.

As our team commenced the Editorial work for this March 2020 edition, Government had ordered the nation to follow isolation and abide home lock down. Our Morale was down with the nation wide COVID-19 outbreak. Thanks to our President Dr Silju Mathew & Madam Secretary Dr Sri Devi Padmanabhan, who both encouraged to work on this issue. They believed that this Issue would break the mental disturbance to some extent, which our members are facing towards the outbreak. Thanks to my wonderful editorial team who did a great job via "Work From Home" modality.

We wanted this issue to be an eye opener and educative media for our members towards the prevailing outbreak. This issue covers two important articles. One from the renowned Microbiologist and Scientist , Dr. S.P.Thyagarajan, Research Director, Ramachandra University, Chennai. He has given an interview on COVID-19 & SARS-COV-2. Thanks to our Member Dr. Vignesh Kailasam, for arranging this interview in a very short time. Another article is from our member Dr. Vinod Krishnan, Editor of World Federation of Orthodontists. He had given an excellent article which is the need of the hour. It covers the enhanced Sterilisation Protocols and Personal Protection which Orthodontists need to adopt during this Outbreak.

Other articles includes covering Head Office Events, Outstanding women acheivers of IOS, as to commemorate them for Women's Day, Outstanding Athelete of IOS, Voice of your EC Member and Public Awareness Committee activities.

Hope You Enjoy This Issue

STAY SAFE AND STAY AT HOME

Jai IOS
Jai Hind

Dr M.S.Kannan

Editor, IOS TIMES
Indian Orthodontic Society



D9 Conclave

The first ever Summit of Presidents and Secretaries of the Nine Dental Specialties

As Reported By Section Editor : Dr.Swati Acharya

D9 Conclave: The first ever Summit of Presidents and Secretaries of the Nine Dental Specialties was held in Chennai on 13th and 14th of March 2020. The program was organised for the top office bearers of the nine specialities to meet and interact in the presence of the DCI President and appraise him towards the requirement of all the specialities. The program started with the informal introduction and dinner on day one, followed by the formal conclave the next day. On day two The DCI president addressed the gathering and reiterate the need for change and as representative of each speciality requested the main office bearers to put forth the proposal for the changes that is required in the curriculum and the challenges that is faced by each Society that can be addressed by DCI.



The presentation for the Indian Orthodontic Society was done by the President and the Secretary about the best practise followed by the society and what were the expectations from the conclave for IOS. Subsequently all the Presidents and Secretaries of all the Specialities made their presentations, which was followed by a healthy deliberation on issues related to governance, election, funding, research and GST compliance.

It was a great learning experience on the best practices of each specialty, inter-specialty cooperation and synergies. interacting with the dynamic Leaders and great achievers, in the gracious presence of the DCI President. Gratitude to Dr Mohan for facilitating the meeting and being a wonderful host.



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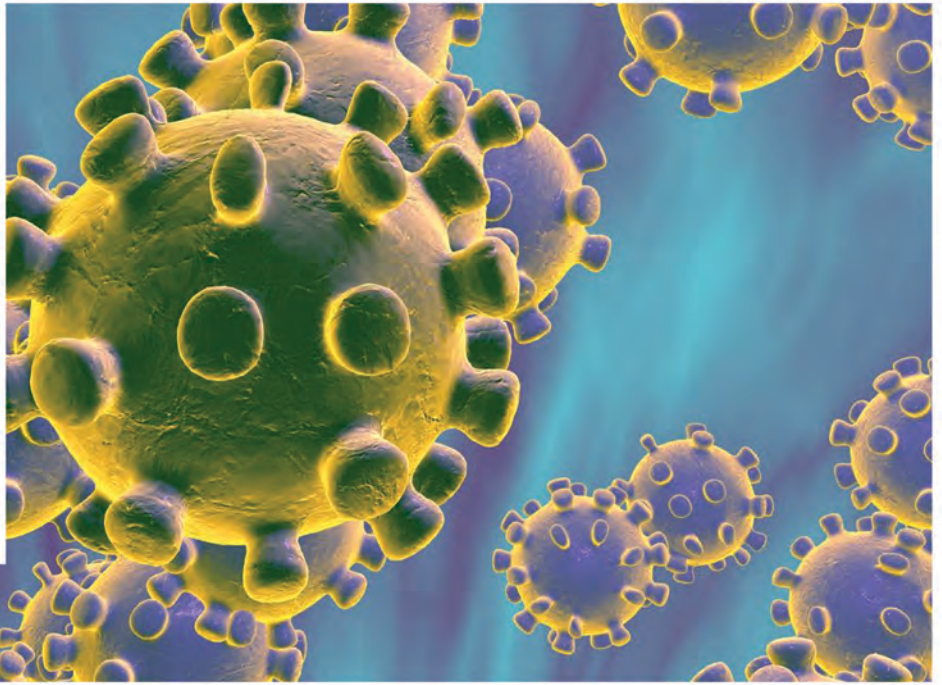


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CORONA VIRUS DISEASE (COVID)-19 STORY

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Section Editor : **Dr. Kavitha Iyer**

IOS Times Editorial Team

*Thank to our Member **Dr. Vignesh Kailasam** for facilitating the Interview”*

In December 2019, there occurred an outbreak of mystery pneumonia in the WUHAN Province of China. By intense research using molecular virology technique, called deep sequencing, five independent laboratories in China identified the causative agent as novel Corona Virus (nCoV). On 12th January 2020, World Health Organisation (WHO) temporarily named the virus as 2019 novel Corona virus (2019-nCoV). The first case of this disease was reported in USA on 21st January 2020. On 11th February 2020, WHO named this novel Corona Virus induced pneumonia as CORONA VIRUS DISEASE-19 (COVID-19). On 31st January 2020, WHO announced COVID-19 as ‘Public health emergency of International concern (PHEIC)’ and subsequently declared it as PANDEMIC.

COVID-19, in view of its pandemic nature, has spread across the globe with fastest momentum in the last two months, primarily through travel. Currently 162 countries are reporting COVID-19 with a morbidity of 80% and death rate of 3-5%. As on 25th March 2020, the number of reported COVID-19 cases are: 332,935. Dr. Tedros Adhanom Ghebreyesus, Director General, WHO said in a press briefing that it took 67 days from the first reported case to reach the first 100,000 cases; 11 days after that to reach

200,000 cases; but just another 4 days only to top 300,000 COVID-19 cases!!

1. What is the new virus?

Coronaviruses (CoVs) are important pathogens for human and vertebrates. They can infect respiratory, gastrointestinal, hepatic, and central nervous system of human, livestock, birds, bat, mouse, and many other wild animals. Corona viruses, in general, are a family of viruses that target and affect mammals’ respiratory systems. According to their specific characteristics, there are four main ‘genera’ of corona viruses, which are called alpha, beta, delta, and gamma. Most of these only affect animals, but a few can also pass to humans. Those that are transmissible to humans belong to only two of these genera: alpha and beta. Only two corona viruses have previously caused global outbreaks. The first of these was the SARS coronavirus — responsible for Severe Acute Respiratory Syndrome (SARS) — which first started spreading in 2002, also in China. The SARS virus epidemic primarily affected the populations of mainland China and Hong Kong, and it died off in 2003. The other one was the MERS coronavirus — or Middle

East Respiratory Syndrome coronavirus — which emerged in Saudi Arabia in 2012. This virus has affected at least 2,494 people since then.

The presently emerged third corona virus is SARS-CoV-2, that causes Coronavirus disease 2019 (COVID-19)

2. Where did the virus originate?

When humans do become infected with a Corona virus, this typically happens via contact with an infected animal. Some of the most common carriers are bats, although they do not typically transmit Corona viruses directly to humans. Instead, the transmission might occur via an “intermediary” animal, which will usually — though not always — be a domestic one. The SARS corona virus spread to humans via civet cats, while the MERS virus spread via dromedaries. However, it can be difficult to determine the animal from which a corona virus infection first started spreading.

In the case of the new corona virus, COVID-19, initial reports from China tied the outbreak to a seafood market in central Wuhan. As a result, local authorities closed down the market on January 1, 2020. However, later assessments have since suggested that this market was unlikely to be the single source of the Corona virus outbreak, as some of the people infected with the virus had not been frequenting the market.

3. Virology of SARS-CoV-2

Corona viruses are enveloped viruses with a positive sense single-stranded RNA genome (26e32 kb) CoVs belong to the subfamily Coronavirinae in the family of Coronaviridae of the order Nidovirales, and this subfamily includes four genera: Alpha corona virus, Beta coronavirus, Gamma corona virus, and Delta corona virus

The human corona viruses (HCoVs) are detected in the alpha corona virus (HCoV-229E and NL63) and beta corona virus (MERS-CoV, SARS-CoV, HCoV-OC43 and HCoV-HKU1) genera. In late December 2019, patients presenting with cough, fever, and dyspnoea with acute respiratory distress syndrome (ARDS) due to an unidentified microbial infection were reported in Wuhan, China. Virus genome sequencing of five patients with pneumonia hospitalized from December 18 to December 29, 2019, revealed the presence of a previously unknown beta-CoV strain in all of them. This isolated novel beta-CoV shows 88% identity to the sequence of two bat-derived Severe Acute Respiratory Syndromes (SARS)-like coronaviruses, bat-SL-CoVZC45.

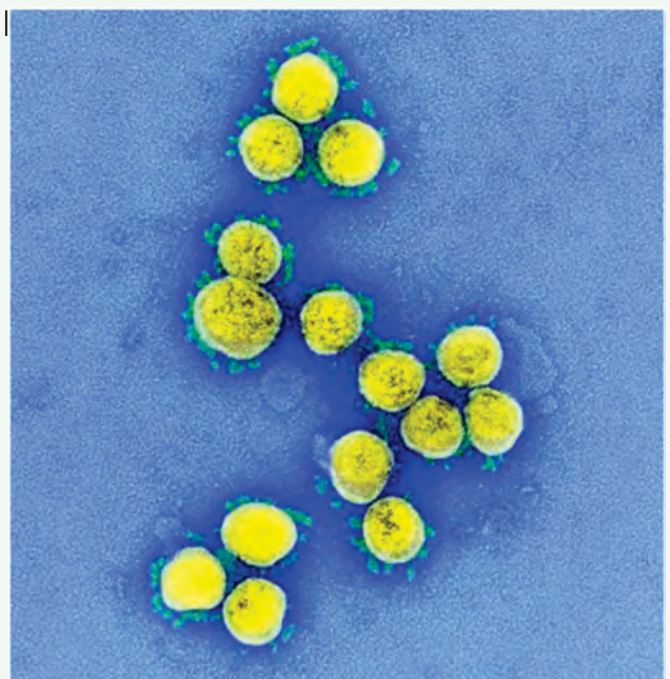
3.1. Coronaviral Genome Structure And Replication

The genome of CoVs is a single-stranded positive-sense RNA (+ssRNA) (~30 kb) with 5'-cap structure and 3'-poly-A tail. The genomic RNA is used as template to directly translate poly protein 1a/1ab (pp1a/pp1ab),

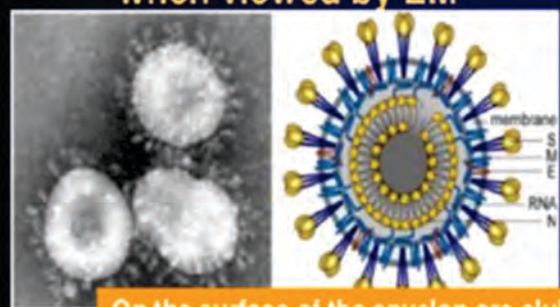
which encodes nonstructural proteins (nsps) to form the replication transcription complex. Most of the nsps of nsp1-16 have been reported for their specific roles in the replication of CoVs. However, the functions of some of the nsps are unknown or not well understood. The known functions of the 16 nsps are summarized below:

Four structural proteins are essential for virion assembly and infection of CoVs. Homotrimers of S proteins make up the spikes on the viral surface and they are responsible for attachment to host receptors. The M protein has three trans-membrane domains and it shapes the virions, promotes membrane curvature, and binds to the nucleocapsid. The E protein plays a role in virus assembly and release, and it is involved in viral pathogenesis. The N protein contains two domains, both of which can bind virus RNA genome via different mechanisms. It is reported that N protein can bind to nsp3 protein to help to package the encapsidated genome into virions. N is also an antagonist of interferon (IFN) and viral encoded repressor of RNA interference, which appears to be beneficial for the viral replication.

4. |



A Crown-like Appearance when viewed by EM



On the surface of the envelop are club-shaped projections that resemble a solar corona

Different CoVs display diverse host range and tissue tropism. Before 2019, there were only six CoVs that were known to infect human and cause respiratory diseases. HCoV-229E, HCoV-OC43, HCoV-NL63, and HKU1 cause only mild upper respiratory disease, and in rare cases some of them can cause severe infection in infants, young children and elders. SARS-CoV and MERS-CoV can infect lower respiratory tract and cause severe respiratory syndrome in human. The new CoV, 2019-nCoV, which belongs to beta corona viruses based on sequence analysis can also infect the lower respiratory tract and cause pneumonia in human, but it seems that the symptoms are milder than SARS and MERS.

4.1. Pathogenesis of COVID-19

Patients with COVID-19 show clinical manifestations including fever, nonproductive cough, dyspnea, myalgia, fatigue, normal or decreased leukocyte counts, and radiographic evidence of pneumonia, which are similar to the symptoms of SARS-CoV and MERS-CoV infections. Hence, although the pathogenesis of COVID-19 is poorly understood, the similar mechanisms of SARS-CoV and MERS-CoV still can give us a lot of information on the pathogenesis of SARS-CoV-2 infection to facilitate our recognition of COVID-19.

4.2. Coronavirus entry and replication

Coronavirus S protein has been reported as a significant determinant of virus entry into host cells. The envelope spike glyco protein binds to its cellular receptor, ACE2 for SARS-CoV and SARS-CoV-2, CD209L (a C-type lectin, also called L-SIGN) for SARS-CoV, DPP4 for MERS-CoV. The entry of SARS-CoV into cells was initially identified to be accomplished by direct membrane fusion between the virus and plasma membrane. Besides membrane fusion, the clathrin-dependent and -independent endocytosis mediated SARS-CoV entry too. After the virus enters the cells, the viral RNA genome is released into the cytoplasm and is translated into two poly proteins and structural proteins, after which the viral genome begins to replicate. The newly formed envelope glyco proteins are inserted into the membrane of the endoplasmic reticulum or Golgi, and the nucleocapsid is formed by the combination of genomic RNA and nucleocapsid protein. Then, viral particles germinate into the endoplasmic reticulum-Golgi intermediate compartment (ERGIC). At last, the vesicles containing the virus particles fuse with the plasma membrane to release the virus.

4.3. Antigen presentation in Coronavirus infection

While the virus enters the cells, its antigen will be presented to the antigen presentation cells (APC), which is a central part of the body's anti-viral immunity. Antigenic peptides are presented by major histo-

compatibility complex (MHC; or human leukocyte antigen (HLA) in humans) and then recognized by virus-specific cytotoxic T lymphocytes (CTLs). Hence, the understanding of antigen presentation of SARS-CoV-2 will help our comprehension of COVID-19 pathogenesis. Unfortunately, there is still lack of any report about it, and we can only get some information from previous researches on SARS-CoV and MERS-CoV. The antigen presentation of SARS-CoV mainly depends on MHC I molecules, but MHC II also contributes to its presentation. Previous research shows numerous HLA polymorphisms correlate to the susceptibility of SARS-CoV, such as HLA-B*4601, HLA-B*0703, HLA-DRB1*1202 and HLA-Cw*0801, whereas the HLA-DR0301, HLA-Cw1502 and HLA-A*0201 alleles are related to the protection from SARS infection. In MERS-CoV infection, MHC II molecules, such as HLA-DRB1*11:01 and HLA-DQB1*02:0, are associated with the susceptibility to MERS-CoV infection. Besides, gene polymorphisms of MBL (mannose-binding lectin) associated with antigen presentation are related to the risk of SARS-CoV infection. These researches will provide valuable clues for the prevention, treatment, and mechanism of COVID-19.

4.4. Humoral and cellular immunity

Antigen presentation subsequently stimulates the body's humoral and cellular immunity, which are mediated by virus-specific B and T cells. Similar to common acute viral infections, the antibody profile against SARS-CoV virus has a typical pattern of IgM and IgG production. The SARS-specific IgM antibodies disappear at the end of week 12, while the IgG antibody can last for a long time, which indicates IgG antibody may mainly play a protective role, and the SARS-specific IgG antibodies primarily are S-specific and N-specific antibodies. Comparing to humoral responses, there are more researches on the cellular immunity of Coronavirus. The latest report shows the number of CD4⁺ and CD8⁺ T cells in the peripheral blood of SARS-CoV-2-infected patients significantly is reduced, whereas its status is excessive activation, as evidenced by high proportions of HLA-DR (CD4 3.47%) and CD38 (CD8 39.4%) double positive fractions. Similarly, the acute phase response in patients with SARS-CoV is associated with severe decrease of CD4⁺ and CD8⁺ T cells. Even if there is no antigen, CD4⁺ and CD8⁺ memory T cells can persist for four years in a part of SARS-CoV recovered individuals and can perform T cell proliferation, DTH response and production of IFN- γ . Six years after SARS-CoV infection, specific T-cell memory responses to the SARS-CoV peptide library could still be identified in 14 of 23 recovered SARS patients. The specific CD8⁺ T cells also show a similar effect on MERS-CoV clearance in mice. These findings may provide valuable information for the rational design of vaccines against SARS-CoV-2.

5. Diagnosis of COVID-19

Clinical diagnosis of COVID-19 is mainly based on epidemiological history, clinical manifestations and some auxiliary examinations, such as nucleic acid detection, CT scan, immune identification technology (Point-of-care Testing (POCT) of IgM/IgG, enzyme-linked immunosorbent assay (ELISA)) and blood culture. However, the clinical symptoms and signs of patients infected with SARS-CoV-2 are highly atypical, including respiratory symptoms, cough, fever, dyspnea, and viral pneumonia. Therefore, auxiliary examinations are necessary for the diagnosis of COVID-19, just as the epidemiological history of exposure etc.,

5.1. Nucleic acid detection technology

The two commonly used nucleic acid detection technologies for SARS-CoV-2 are real-time quantitative polymerase chain reaction (RT-qPCR) and high-throughput sequencing. The authoritative identification method for SARS-CoV-2 is virus blood culture and high-throughput sequencing of the whole genome. However, the application of high-throughput sequencing technology in clinical diagnosis is limited because of its equipment dependency and high cost. So RT-qPCR is the most common, effective and straightforward method for detecting pathogenic viruses in respiratory secretions and blood.

After the outbreak of SARS-CoV-2 in China, many companies soon launched RT-qPCR test kits for clinical diagnosis. The Chinese Center for Disease Control and Prevention (China CDC) recommended the use of specific primers and probes in the ORF1ab and N gene regions for SARS-CoV-2 detection by RT-qPCR. The patient is defined as having a laboratory-confirmed infection when both targets are positive (http://ivdc.chinacdc.cn/kyjz/202001/t20200121_211337.html). Chu et al. [2020] described two 1-step RT-qPCRs (TaqMan-based fluorescence signal) to detect two different regions (ORF1b and N) of the viral genome separately. The negative control samples were all confirmed as negative ones, while samples from two SARS-CoV-2 infected patients were confirmed as positive ones in respiratory specimens by this method. Another study showed that the positive rate of SARS-CoV-2 was 91.7% (11/12) in the patients' self-collected saliva by using RT-qPCR (non-probes SYBR based fluorescence signal), which suggests that saliva is a promising non-invasive specimen for the diagnosis, monitoring, and infection control of patients with SARS-CoV-2 infection. In view of variable sensitivity and specificity of kits, it is essential to improve the detection rate of RT-qPCR for SARS-CoV-2 infection. It is a pride that a Pune-based start-up company in India has got license for the first Indian COVID-19 RT-qPCR kit called "My Lab" kit to be marketed shortly.

5.2. CT scans and other diagnostic methods

For the diagnosis of COVID-19, many clinicians proposed CT scans should be one necessary auxiliary diagnostic method because it is more sensitive. For individuals with a high clinical suspicion of SARS-CoV-2 infection with negative RT-qPCR screening, a combination of repeated RT-qPCR tests and chest CT scan may be helpful. The typical CT images show bilateral pulmonary parenchymal ground-glass and consolidative pulmonary opacities, sometimes with a rounded morphology and a peripheral lung distribution.

Given the shortcomings of the currently used nucleic acid detection and CT scans for the diagnosis of COVID-19, clinical laboratories should apply some immunological detection kits that target viral antigens or antibodies as soon as possible. Currently, POCT of IgM/IgG and ELISA kits for SARS-CoV-2 have been developed and pre-tested by some companies and have shown higher detection rates than nucleic acid detection. The sensitivity of SARS-CoV N-based IgG ELISA (94.7%) is significantly higher than that of SARS-CoV S-based IgG ELISA (58.9%) but the sensitivity of SARS-CoV-2 IgG/IgM remains to be studied. Hence, developing other sensitive and specific auxiliary methods is necessary and urgent for the diagnosis of COVID-19.

6. How is the virus transmitted?

The virus is thought to spread mainly between people who are in close contact with one another (within about 6 feet) through respiratory droplets produced when an infected person coughs or sneezes. It also may be possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, but this is not thought to be the main way the virus spreads. Learn what is known about the spread of newly emerged coronaviruses at <https://www.cdc.gov/coronavirus/2019-ncov/about/transmission.html>.

7. What are the symptoms of COVID-19?

Patients with COVID-19 have had mild to severe respiratory illness with symptoms of Fever, cough, shortness of breath. As severe complications from this virus disease, Some patients develop pneumonia in both lungs, multi-organ failure and in some cases death.

8. How can I help protect myself?

People can help protect themselves from respiratory illness with everyday preventive actions. Avoid close contact with people who are sick. Avoid touching your eyes, nose, and mouth with unwashed hands. Wash your hands often with soap and water for at least 20 seconds. Use an alcohol-based hand sanitizer that contains at least 60% alcohol if soap and water are not available.

the instructions on how to get care without exposing other people to the individual's illness. While sick, avoid contact with people, don't go out and delay any travel to reduce the possibility of spreading illness to others on one hand and taking medical care on the other.

That is, the virus likely takes about 5–6 days to give rise to symptoms once it has infected a person.

Although the WHO note that experts estimate that the new virus's incubation period may last anywhere between 1 and 14 days, they suggest in their coronavirus Q&A section that the most likely duration is about 5 days.

9. Treatment of COVID-19

Even though there is no COVID-19 specific treatment currently available, efforts are being made adopting the 'drugs-repurposing strategy'. Scientists and clinicians are trying the drugs already proven for the treatment of Malaria, HIV and Arthritis for the treatment of COVID-19 through clinical trials. They are: 1. Chloroquines, the synthetic quinine from Cinchona used against Malaria for years has been shown to slow down entry and replication of COVID-19; 2. Hydroxy Chloroquine, which is a less toxic metabolite of Chloroquine earlier used for the treatment of autoimmune diseases is now being tried against COVID-19 with better efficacy; 3. Kaletra is the combination drug used for HIV-disease, consisting of Lopinavir and Ritonavir, which is also tried in the treatment of COVID-19. 4. Remdesivir, an antiviral used against Ebola, SARS and MERS earlier, is now shown to have antiviral effects for COVID-19 by preventing RNA replication and hence used. 5. Losartan, an anti-hypertensive preventing angiotensin enzyme is also tried in COVID-19. 6. Favipiravir is the Japanese drug licensed for Influenza, currently tried in COVID-19 patients. and 7. Actemra, an immunosuppressant used in the treatment of Rheumatoid Arthritis, quietening cytokine storm is being used in COVID-19.

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About The Author

Prof. S.P. Thyagarajan, is a D.Sc., in Microbiology in addition to his Ph.D. and M.D. Degrees, and has also been conferred with several Fellowship titles including those by National Academy of Sciences and National Academy of Medical Sciences. The most recent honor accorded to him in June.2018 is the "Honorary Fellowship of Royal Society of Physicians & Surgeons, Glasgow, UK in Travel Medicine. He has put in 48 years of teaching and research experience in Tamilnadu Medical Colleges, University of Madras and Sri Ramachandra University. He has till date completed 60 research projects funded by national and inter-national funding agencies. He has published 347 research papers and 20 books in the area of infectious diseases and Drug development from Natural products; He is the recipient of 42 International/National/State Awards in recognition of his scientific and academic contributions. The most recent one is Dr. APJ. Abdul Kalam Award in Science & Technology by Government of Tamilnadu in 2017. He has collaborated with international Scientists/Clinicians from 26 countries with mutual visits to these countries/institutions. He has guided 32 candidates for their Ph.D and 12 candidates for post-doctoral research. He is the inventor of a patented drug for the treatment of Chronic jaundice, called Hepatitis-B from the Indian medicinal plant, Phyllanthus amarus, [Kizhanelli in Tamil], which has already been marketed by an University-Industry agreement under the brand name "VIROHEP" by Rallis India Pharmaceuticals/ Shreya Life Sciences, Mumbai, bringing financial benefits to the University of Madras.

Prof. Thyagarajan, as the Vice-Chancellor of the University of Madras between 2003-2006, besides bringing laurels to the University through "University with Potentials of Excellence" and other schemes, spear-headed the 150th year celebrations of the University by securing a special grant of Rs.125 crores from Govt. of India and conducted the 150th Year celebrations on 4-5, Sept, 2006 inaugurated by His Excellency, Dr. A. P. J. Abdul Kalam, Former President of India

Prof. S.P. Thyagarajan, on completion of his term as Vice Chancellor of University of Madras, has currently taken up the position of Professor of Eminence & Dean (Research) at Sri Ramachandra University, Porur, Chennai. He has established State-of art Central Research Facilities in the University and is coordinating organizationally and administratively all the International and national level funded research projects and collaborations of the University, with several Centres of Excellence in research granted by these agencies like NIH, WHO, DST DAE, ICMR, DBT etc.,

During his higher education career spanning over a period of 48 years, he has served as Chairman/Member of several Expert Committees of UGC/ICMR/DST/DBT/DRDO/MOES/WHO/NAAC Peer Teams and developed UGC Regulations, Multicentric Research projects of funding agencies and National Programmes of MHRD including RUSA for the State Universities and Colleges.

COVID-19 OUTBREAK ESSENTIAL INFORMATION THAT ORTHODONTISTS SHOULD KNOW AND FOLLOW

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Section Editor : **Dr.Kavitha Iyer**

INTRODUCTION

COVID-19 (coronavirus disease 2019) caused by SARS-CoV-2, a positive-sense single-stranded RNA virus from the family Coronaviridae, has been designated as a pandemic and Public Health Emergency of International Concern by the World Health Organization (WHO). The outbreak of COVID-19 occurred in the area of Wuhan, China and has spread exponentially to other parts of the world. The published genome sequence for this novel coronavirus has a close resemblance with other beta-Coronaviruses such as SARS-CoV (first identified in 2002 and caused severe acute respiratory syndrome coronavirus), and MERS-CoV (first identified in 2012 and reason for Middle East respiratory syndrome), which are known to be zoonotic or transmitted from animals to humans. When writing this report (25.3.2020) over 4,22,613 people have been affected worldwide claiming 18,891 deaths (above 4%) demonstrating the severity of the contagion associated with it.

Considering the nature and potential of rapid spread among public and health care providers (HCPs) including dental care professionals, we should be prepared ourselves not to contract it. We should also be cautious enough not to become potential carriers of the disease and at the same time protect our offices from becoming source of this nosocomial infection. The proximity which we keep with our patients while performing orthodontic treatment, the amount of aerosol we generate, and handling of sharp instruments makes us one among high risk groups prone for this virus attack. If we ignore about hygiene and observe precautions while working on our patients, the office can become areas of cross contamination and potentially expose patients to cross-infections. As the current understanding goes, a vaccine for this disease might take minimum of three to six months to be developed and a proper drug for cure might take as long as 18 months. So, once this acute out-break is over and when dental practices resume their normal work, they should be prepared to identify a patient with possible COVID-19 infection, and able to refer them to appropriate treatment centres.

THE COVID 19 VIRUS ATTACK: THE PHENOMENON UNVEILED!

COVID 19 is no different than any other virus and requires entry to individual human cells in order to infect the human host. Once inside, the virus binds to proteins that the cell normally uses for its own functions, essentially hijacking the cell and turning it into a coronavirus factory, which then spill out and spread to new cells. Wrapp et al [1] identified that the 2019-nCoV makes use of a densely glycosylated spike (S) protein, a trimeric class I fusion protein that undergoes a substantial structural rearrangement to fuse the viral membrane, to enter host cells. During viral infection, the trimeric S protein is cleaved into S1 and S2 subunits, in which the S1 contains the receptor binding domain (RBD), which directly binds to the peptidase domain (PD) of Angiotensin-converting enzyme 2 (ACE2) gene (ACE2), while S2 is responsible for membrane fusion. When S1 binds to the host receptor ACE2, another cleavage site on S2 is exposed and is cleaved by host proteases, a process that is critical for viral infection [2].

The primary physiological role of ACE2, a type I membrane protein expressed by epithelial cells of the lung, intestine, kidney, and blood vessels, is the maturation of angiotensin, a peptide hormone that controls vasoconstriction and blood pressure. ACE-2 degrades Angiotensin II to generate Angiotensin 1-7, thereby, negatively regulating Renin-Angiotensin System. Zhou et al. showed that SARS-CoV-2 could use ACE-2 from humans, Chinese horseshoe bats, civet cats, and pigs to enter ACE-2-expressing HeLa cells (used to test the effects of radiation, cosmetics, toxins, and other chemicals on human cells as well as to do gene mapping and study human disease processes) [3]. Lung cells are particularly vulnerable to COVID 19 attack because they express high amounts of the ACE2, the "lock" protein which SARS-CoV-2 uses for entry. A schematic illustration of how virus attacks and attaches to the host cells and its sequel is provided as Figure 1

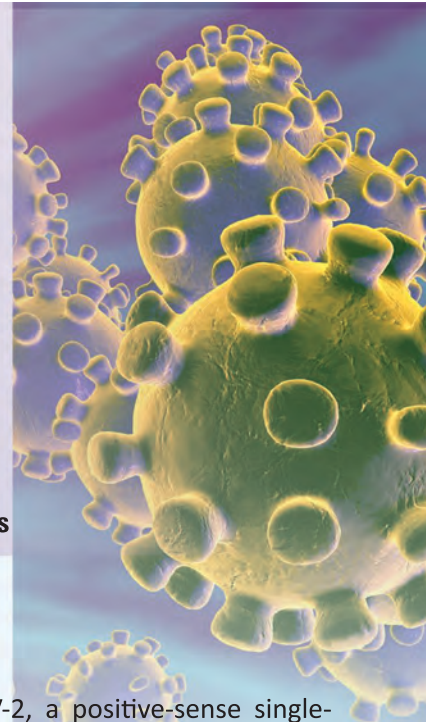


Fig 1

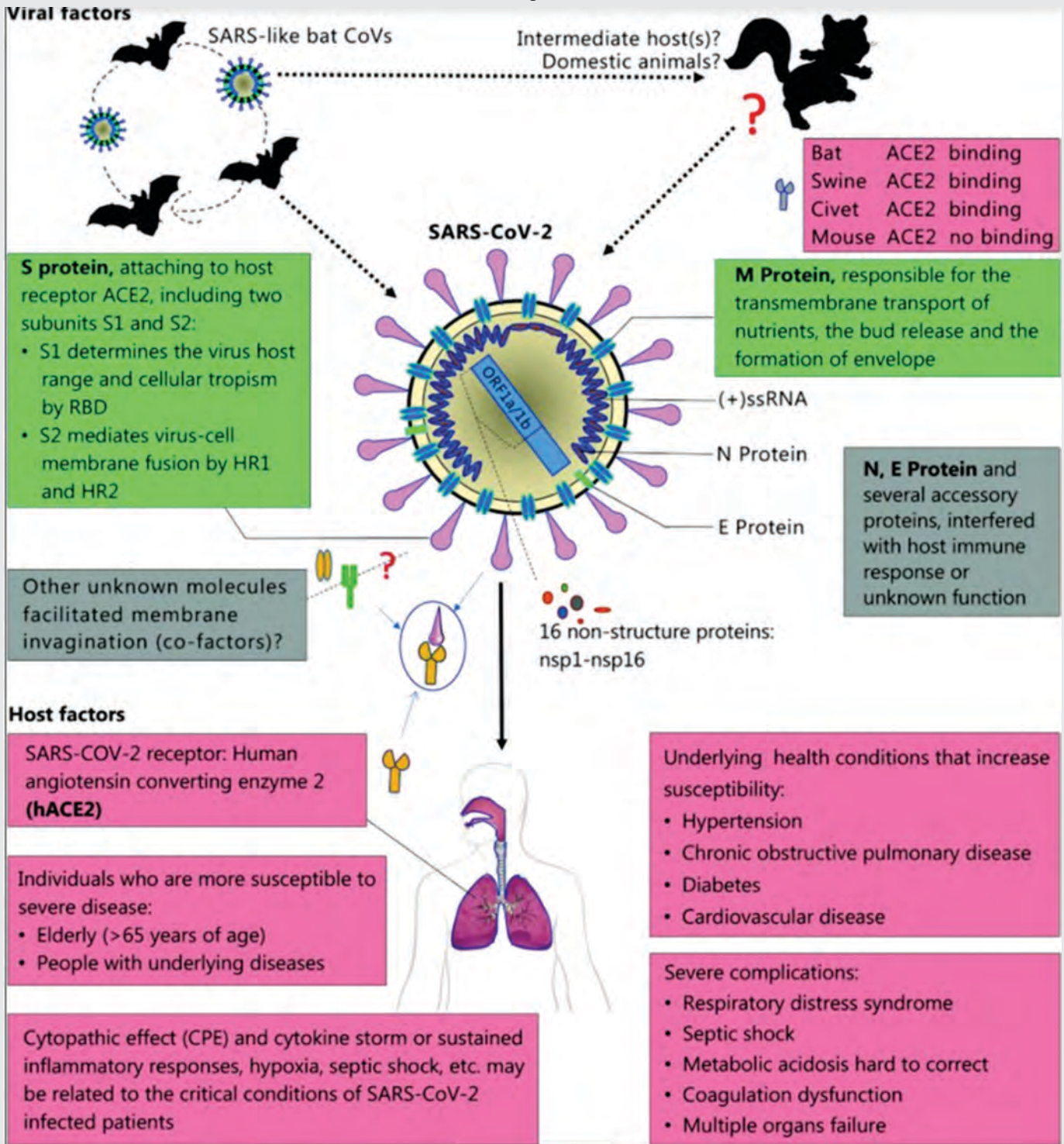


Figure 1: Viral and host factors that influence the pathogenesis of SARS-CoV-2. Bats are the reservoir of a wide variety of coronaviruses, including severe acute respiratory syndrome coronavirus (SARS-CoV) - like viruses. SARS-CoV-2 may originate from bats or unknown intermediate hosts and cross the species barrier into humans. Virus-host interactions affect viral entry and replication. Upper panel: Viral factor. SARS-CoV-2 is an enveloped positive single-stranded RNA (ssRNA) coronavirus. Two-thirds of viral RNA, mainly located in the first open reading frame (ORF 1a/b), encodes 16 non-structure proteins (NSPs). The rest part of the virus genome encodes four essential structural proteins, including spike (S) glycoprotein, small envelope (E) protein, matrix (M) protein, and nucleocapsid (N) protein, and also several accessory proteins. S glycoprotein of SARS-CoV-2 binds to host cell receptors, angiotensin-converting enzyme 2 (ACE2), that is a critical step for virus entry. The possible molecules facilitated membrane invagination for SARS-CoV-2 endocytosis are still unclear. Other virus proteins may contribute to pathogenesis. Host factors (Lower panel) can also influence susceptibility to infection and disease progression. The elderly and people with underlying disease are susceptible to SARS-CoV-2 and tend to develop into critical conditions. RBD, receptor-binding domain; HR1, heptad repeats 1; HR2, heptad repeats 2 (Adapted from Guo et al., 2020 [11]).

SYMPTOMS AND PROGRESSION OF DISEASE

There is still much uncertainty around its clinical presentation, but the spectrum of disease may range from mild-to-moderate illness to pneumonia or severe acute respiratory infection. Guan et al [4] in 2020 reported that the median incubation period for the disease is 4 days (interquartile range, 2 to 7). Fever is identified as the most common symptom (present in 88.7% of admitted patients) and 67.8% of the patients developed cough (67.8%) while nausea or vomiting (5.0%) and diarrhoea (3.8%) were present, but uncommon. It is also identified that the presence of any coexisting illness/co-morbidities resulted in more severe form of the disease in 38.7%. In another study, apart from the above symptoms, myalgia or fatigue (44%), sputum production (28%), headache (8%), haemoptysis (5%), and diarrhoea (3%) were reported. Out of 40 patients hospitalized, more than half of patients (22) developed dyspnoea. The median duration from illness onset to dyspnoea was 8.0 days (Inter Quartile Range (IQR) 5.0–13.0). The median time from onset of symptoms to first hospital admission was 7.0 days (4.0–8.0), to shortness of breath was 8.0 days (5.0–13.0), to ARDS was 9.0 days (8.0–14.0), to mechanical ventilation was 10.5 days (7.0–14.0), and to ICU admission was 10.5 days (8.0–17.0) [5].

LABORATORY INVESTIGATIONS – CONFIRMING COVID 19 INFECTION

It is to be remembered that not all patients should undergo laboratory investigations as most of the symptoms of COVID 19 are similar to that of common cold/seasonal flu. Patients who meet the following criteria should be referred to an appropriate centre for confirmation of the disease – (i) A patient with influenza like illness (fever $\geq 37.8^{\circ}\text{C}$ and at least one of the following respiratory symptoms, which must be of acute onset: persistent cough (with or without sputum), hoarseness, nasal discharge or congestion, shortness of breath, sore throat, wheezing, sneezing or (ii) acute respiratory distress syndrome (ARDS) requiring admission to hospital and have either clinical or radiological evidence of pneumonia.

Laboratory diagnosis of COVID-19 can be done through two pathways - the detection of the corona virus itself, and the detection of the body's adaptive immune response to the virus. The confirmation of the disease is made through real-time RT-polymerase chain reaction (rRT-PCR) detection of the SARS-CoV-2 virus (the virus that causes COVID-19) in either upper respiratory specimens (nasopharyngeal and oropharyngeal swab or wash in ambulatory patients and/or lower respiratory specimens: (sputum (if produced) and/or endotracheal aspirate or bronchoalveolar lavage in patients with more severe respiratory disease). The viral genes targeted so far include the N, E, S and RdRP genes [6]. The algorithm [7] followed in patients suspected with COVID 19 is provided as Figure 2.

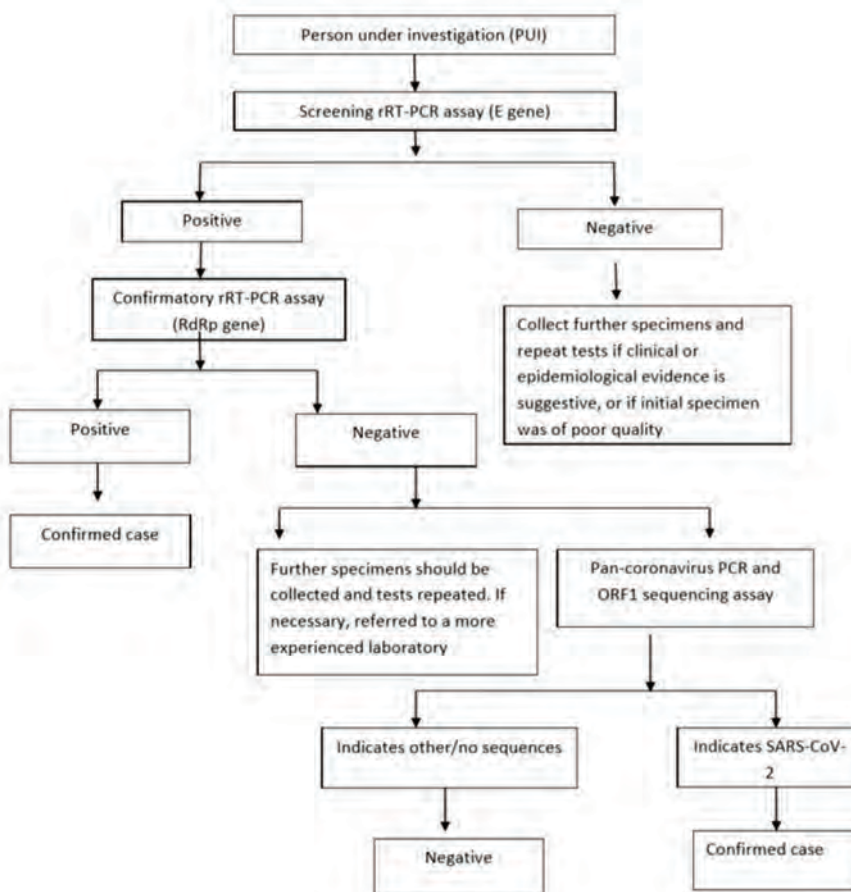


Figure 2 : Laboratory algorithm followed for specimens collected from a suspected COVID 19 patient (From website <https://www.ecr.co.za/news/news/coronavirus-testing-covid-19-sa/> - Accessed 25.3.2020.)

Fig 2

The second approach utilizes specific IgM antibodies to SARS-CoV-2, which become detectable 3-5 days after onset of symptoms. The rapid test kits developed utilizes a qualitative lateral flow immunoassay for the simultaneous detection of IgM and IgG antibodies to SARS-CoV-2 in whole blood, serum or plasma specimens. The test cassette contains recombinant SARS-CoV-2 antigen conjugated to coloured particles. When a specimen is added to the sample well of the cassette, any IgM and IgG present in the specimen will bind to the antigen conjugate, forming coloured coronavirus antigen-antibody complexes. This mixture migrates laterally along the membrane to the test region, where anti-human IgM and anti-human IgG have been immobilised. These capture any IgM and IgG complexes that have formed, resulting in the appearance of coloured lines. If the specimen contains SARS-CoV-2 IgM antibodies, a coloured line will appear in the IgM test line region. If the specimen contains SARS-CoV-2 IgG antibodies, a coloured line will appear in the IgG test line region. To serve as an internal control, a coloured line will always appear in the control line region, indicating that the proper volume of specimen and buffer has been added, and correct procedure has been followed.

WHY SHOULD DENTISTS BE CONCERNED?

Direct (cough, sneeze, and droplet inhalation transmission) and contact transmission (contact with oral, nasal, and eye mucous membranes) forms the two major routes of SARS-CoV-2 transmission, out of which respiratory tract [5], the eye exposure [8] and salivary [9] contacts are considered to be major portals through which the virus to enter the body. Recent research by Xu et al., [10] confirmed the presence of ACE2 receptors in oral mucosa and the epithelial cells of tongue bringing into light the infection susceptibility of oral cavity and potential risk it poses to dentists and dental practice settings. In addition, it is reported that SARS-CoV-2 (COVID 19) can persist on surfaces for a few hours or up to several days, depending on the type of surface, the temperature, or the humidity of the environment. van Doremalen et al [11], in their recent research concluded that the virus remained viable in aerosols throughout the duration of experiment (3 hours), with a reduction in infectious titre from 103.5 to 102.7. SARS-CoV-2 was found to be more stable on plastic and stainless steel (up to 72 hours) than on copper (4 hours) and cardboard (24 hours), although the virus titre was greatly reduced (from 103.7 to 100.6). Due to the unique characteristics of dental procedures where a large number of droplets and aerosols could be generated, the standard protective measures in daily clinical work are not effective enough to prevent the spread of COVID-19, especially when patients are in the incubation period, are unaware they are

infected, or choose to conceal their infection. More importantly, there has been no consensus on the provision of dental services during this COVID-19 pandemic period.

THE ROLE WE SHOULD PLAY IN PREVENTING COVID 19 SPREAD

All organizations and health care agencies, such as Indian Orthodontic Society, Indian Dental Association, Dental Council of India, American Dental Association, American Association of Orthodontists and Centres for Disease Control and Prevention (CDC) recommended that the dental facilities should postpone elective procedures, surgeries, and non-urgent dental visits, and prioritize urgent and emergency visits and procedures for the time being.

WHAT CONSTITUTES ORTHODONTIC EMERGENCIES?

True orthodontic emergencies are rare but can happen and range from minor to serious problems. Loose brackets, pointed arch wires, sharp edges of brackets and ligatures and tooth pain after activation appointments can be considered as minor ones while severe unmanageable pain of jaws or teeth, swelling of face, swollen or infected gums or any trauma to face or teeth resulting in broken appliances and/or sharp edges hurting the oral mucosa or tongue should be considered serious issues requiring immediate attention. It is recommended that while dealing with serious emergencies in dental office, orthodontists should take strict personal protection measures and avoid or minimize operations that generates droplets or aerosols.

HOW DO WE TAKE CARE OF INFECTION CONTROL? [12]

Orthodontic offices should post visual alerts, such as posters at the entrance and in strategic places (e.g., waiting areas, elevators) to provide information to patients about hand hygiene, respiratory hygiene, and cough etiquette. The offices should also provide supplies for respiratory hygiene and cough etiquette, including alcohol-based hand rub (ABHR) with 60-95% alcohol, tissues, and no-touch receptacles for disposal.

The pre-check triage:

Orthodontic offices should strictly establish precheck triage to measure and record the temperature of every staff and patient as a routine procedure. Every patient visiting the facility should be provided with a questionnaire asking about the health status and history of contact or travel. All suspected patients with fever and

their accompanying persons should be provided with medical masks and should be registered and referred to designated hospitals. Care must be taken to schedule the appointment of suspected individual as the last patient of the day to decrease the risk of nosocomial infection. We should implement restricted access to clinical areas and make it mandatory that the parents and/or siblings should wait in the reception room itself.

Patient consultation:

The operating room, in cases of group practice, should be designed in such a way that the adjacent dental chairs should maintain six-foot minimum distance when seating patients. Always request the patients to brush their teeth before coming to their appointments to minimize contamination. When inside the operatory, in order to reduce the microbial load in the oral cavity, povidone iodine mouth rinse should be provided. Intraoral x-ray examination, which can stimulate saliva secretion and coughing should be avoided as far as possible and resorted to extraoral dental radiographs, such as panoramic radiography and cone beam CT, as appropriate alternatives during this COVID-19 outbreak period.

It is mandatory to use personal protective equipment, (PPE) including masks, gloves, gowns, and goggles or face shields, in order to protect skin and mucosa from (potentially) infected blood or secretion. As respiratory droplets are the main route of SARS-CoV-2 transmission, particulate respirators (e.g., N-95 masks) are recommended for routine dental practice. When wearing a face mask, do not pull the mask under the chin. This will allow contamination on the neck to transfer to the inside of the mask. At the same time replacing the mask from the face exposes the mouth and nose to those contaminants.

Orthodontists and health care providers (HCP) in the facility should perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and after removing PPE, including gloves. Hand hygiene after removing PPE is particularly important to remove any pathogens that might have been transferred to bare hands during the removal process. It is always advisable to use buttoned clinic jackets instead of scrub tops that must be pulled over the head, bringing the soiled garment in contact with the eyes, nose, and mouth.

Patients with symptoms of suspected COVID-19 or other respiratory infection reporting for orthodontic emergency should not be allowed to wait in the reception area and should be treated in a private chair separately. Once they

are in the operatory, get them in and out dental chair quickly. If dealing with a broken bracket, consider using orthodontic wax to cover the spot rather than taking the time to rebond the bracket and consider doing it when the patient is well. The patient should be referred for testing and ask the individual if they will let you know their test results and consider an immediate closure of your office pending test results. If the results are positive, everyone who entered the office after the affected patient should be notified immediately.

Working with aerosol generating equipment

Procedures that are likely to induce coughing or that generates aerosols, such as the use of a 3-way syringe or airtor handpieces (Such as bonding, debonding and re-fixing broken brackets), should be avoided (if possible) or performed cautiously. If it is deemed necessary to perform such procedures, the HCPs in the room should wear an N95 or higher-level respirator, eye protection, gloves, and a gown compulsorily. The number of HCPs present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for the procedure. Ideally these procedures should be done in Airborne Infection Isolation Rooms (AIIRs), which are single-patient rooms at negative pressure relative to the surrounding areas, and with a minimum of 6 air changes per hour (12 air changes per hour are recommended for new construction or renovation). Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter directly before recirculation. Room doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized.

INFLUENCE OF COVID 19 ON WORKPLACES

Employees of the health care system could be absent because they are sick, they are care-givers for sick family members and/or children (if schools and day cares are closed), have at-risk people at home such as immunocompromised people or due to fear of contracting the disease. Employees who have symptoms of acute respiratory illness are recommended to stay home and not come to work until they are free of fever (cut off is 100.4° F [37.8° C] or greater), signs of a fever, and any other symptoms for at least 24 hours, without the use of fever-reducing or other symptom-altering medicines (e.g. cough suppressants).

Considering the growing nature of the pandemic, affecting more than 195 countries to date, the consumer interest to protection equipment will rise leading to

Table 1: Sterilization/disinfection protocol - checklist

Item	Questions	Yes/No
Hand hygiene	Before and immediately after removing the gloves	
	After touching instruments bare-handed	
	Do you use surgical gloves for all surgical procedures (biopsy, periodontal surgery, apical surgery, implant surgery, and surgical extractions of teeth)?	
Personal Protection Equipment (PPE)	Do you use Masks, Protective Eyewear, and Face Shields while working on all the patients?	
	Do you perform Hand hygiene immediately after removal of PPE?	
	Do you wear protective clothing (reusable or disposable gown, laboratory coat, or uniform) that covers personal clothing and skin (e.g., forearms) likely to be soiled with blood and/or saliva?	
Respiratory hygiene/cough etiquette	Are Signs posted at entrances?	
	Have you provided Tissues and no-touch receptacles for disposal of tissues in the waiting area?	
	Have you provided Resources for patients to perform hand hygiene in or near waiting areas?	
	Are you offering face masks to coughing patients and other symptomatic persons when they enter the setting?	
	Has your facility been equipped with separate waiting area or have provisions to make patients with respiratory symptoms sit as far away from others as possible?	
Sharps safety	Are all sharps disposed of in a puncture-resistant sharps container located as close as possible to the area in which the items are used?	
	Do you follow work practice controls (one-handed scoop technique for recapping needles, removing burs before disconnecting handpieces)?	
	Are sharps containers disposed of in accordance with local regulated medical waste rules and regulations?	

Table 1: Sterilization/disinfection protocol - checklist

Sterilizing patient care items	Do you discard single use items after one use itself?	
	Do you clean and heat sterilize reusable critical and semi critical dental according to manufacturer instructions between patient use?	
	Do you use proper FDA approved ultrasonic cleaner, instrument washer, washer-disinfector for cleaning instruments and patient materials?	
	Do you appropriately wrap/pack instruments for sterilization after cleaning and drying with proper indicator packings?	
	Do you label sterile packs with the sterilizer used, the cycle or load number, the date of sterilization, and if applicable an expiration date?	
	Do you use a biologic indicator (i.e., spore test) at least weekly and with every load containing implantable items?	
	Do you store instruments after sterilization without compromising the sterility?	
	Do you clean and heat sterilize dental handpieces (including the low-speed motor) and other devices not permanently attached to air and waterlines according to manufacturer instructions?	
	Does your facility have an instrument processing area has a workflow pattern designed to ensure that devices and instruments clearly flow from high contamination areas to clean / sterile areas (i.e., A clear separation of contaminated and clean workspaces)?	
Digital radiography	Do you use approved barriers to cover the sensor and barriers are changed between patients?	
	Do you clean the sensor and disinfect with an intermediate-level, hospital disinfectant?	
Environmental infection control	Do you facility clean and disinfect the clinical contact surfaces with disinfectant after each patient?	
	Do you clinic have affiliation with any government approved agencies to handle the medical waste?	
	Do you use Sterile saline or sterile water as a coolant / irrigant when performing surgical procedures?	

shortage for the same. At the same time there will be shortage/delay or cancellations of supplies to and from COVID19 affected countries. Orthodontic offices when re-open after closure in accordance with the acute outbreak, should view all these issues with caution and make sure that the supplies are adequate, and the employees are healthy. The checklist provided as Table 1 can be used as a guide to check whether proper infection control protocols are in place in orthodontic offices.

IF WE RESIDE AND PRACTICE IN AREA WHERE COMMUNITY SPREAD HAS HAPPENED

It is mandatory that we limit to one- point of entry to the dental facility. All visitors, upon entry itself, should be actively assessed for fever and respiratory symptoms and if positive, should not be allowed inside the facility. If restriction to all visitors are implemented, facilities should consider exceptions based on patient's emotional well-being and care.

Orthodontic offices should constantly communicate and collaborate with public health authorities and if possible, should designate a specific person for dissemination of information to health care providers working in the facility. If any known or suspected COVID-19 patients patient turns up in the office, the designated person should communicate with the concerned personnel before transferring them to other departments in the facility (e.g., radiology) and to other healthcare facilities.

WHAT IF EXPOSURE OCCURS IN THE DENTAL / ORTHODONTIC OFFICE?

Treating infected/suspected patient

Once an infected/suspected case has been transferred from the dental office, the room where the patient was placed should not be used, the room door should remain shut, with windows opened and the air conditioning switched off, until it has been cleaned with detergent and disinfectant. If a suspected case spent time in the waiting area or toilet facilities, then these areas should be cleaned with detergent and disinfectant as soon as practically possible, unless there has been a blood or body fluid spill which should be dealt with immediately. The usual PPE equipment and protocols apply when cleaning and disinfecting these areas too. It is mandatory to remove and discard PPE as clinical waste. Once cleaning and disinfection have been completed, the area can be put back in use.

Employee Exposure

According to the Occupational Safety and Health Administration (OSHA) recently published guidance on preparing workplaces for COVID-19, healthcare employees performing aerosol-generating procedures (such as dentists) and laboratory personnel collecting or handling specimens on known or suspected pandemic patients are considered to be the ones with very high exposure risk. If an employee exposure is suspected in the office, it is mandatory to send home all employees who worked closely with that employee for a 14-day period to ensure that the infection does not spread. Before the employee departs, ask them to identify all individuals who worked in proximity (three to six feet) with them in the previous 14 days to ensure you have a full list of those who should be sent home. If you work in a shared office building or area, you should inform building management so they can take whatever precautions they deem necessary. It is recommended to close off areas used by the ill persons and wait up to 24 hours before beginning cleaning and disinfection to minimize potential for exposure to respiratory droplets. Open outside doors and windows to increase air circulation in the area. Cleaning staff should wear gloves and clean and disinfect all areas (e.g., offices, bathrooms, and common areas) used by the ill persons, focusing especially on frequently touched surfaces. Additional PPE might be required based on the cleaning/disinfectant products being used and whether there is a risk of splash. If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection and diluted household bleach solutions, alcohol solutions with at least 70% alcohol, and most common environmental protection agency (EPA) - registered household disinfectants should be used for disinfecting the surfaces [13].

MANAGEMENT OF MEDICAL WASTE

The medical waste, including disposable protective equipment generated by the treatment of patients with suspected or confirmed 2019-nCoV infection are regarded as infectious medical waste and should be transported to the temporary storage area in a double-layered yellow colour medical waste package bags with a "gooseneck" ligation. The reusable instruments and items should be pre-treated, cleaned, sterilized, and properly stored in accordance with the CDC guidelines. All waste from suspected contaminated areas should be removed from the room and quarantined until patient test results are known (this might take 48 hours); and if the patient is confirmed to have COVID-19, further advice should be sought from the local health protection team.

	Incubation	Prodromal	Pneumonia	Immunological	
CLINICAL STATUS PHASES		- Fever - Cough - Sore throat - Arthralgia, Myalgia - GI (diarrhoea, vomiting, abdominal pain)	- Fever (recurrent or persistent) - Lethargy - ↑CRP, ↓ALC - CXR features of pneumonia	- Hypoxia or progressive exertional dyspnoea or shortness of breath - ↑CRP, ↓ALC - ↑RR, ↓SPO2	- Shock - ARDS - Multi-organ failure
PATHOPHYSIOLOGY	Most patient will be in this stage and do not progress into pneumonia phase		Clinical deterioration	Most mortality in this phase	
MANAGEMENT	Nasopharyngeal Replication	Nasopharyngeal replication, binding to ACE2 receptors (lungs, liver)		Cytokine storm (Interleukins + TH2)	
CATEGORY	3 - 14 days (median 5 days) Contact tracing Isolation Observation	Day 1 - Day 7 Observation Hydroxychloroquine OR Chloroquine	Day 8 - Day 10 Hydroxychloroquine If progressive, add: Lopinavir/Ritonavir (Kaletra)	Hydroxychloroquine/ Chloroquine + Lopinavir/Ritonavir (Kaletra) + Ribavirin / Interferon Beta-1b +/- Immunomodulators (eg. steroids/IVIG/Tocilizumab)	
CATEGORY	1. Asymptomatic	2. Symptomatic but no evidence of pneumonia	3. Pneumonia	4. Pneumonia with hypoxia	
CATEGORY				5. Critically-ill with shock/MOF/ARDS	

Figure 3: Latest understanding of COVID 19 – clinical progression and proposed management (adapted from the infectious disease unit, Penang General Hospital, Penang, Malaysia; Last updated on 22.03.2020)

THE RESEARCH UNTIL NOW IN TREATMENT FOR COVID19

Given the lack of effective antiviral therapy against COVID-19, current treatments are mainly focusing on symptomatic and respiratory support according to the diagnosis and severity of symptoms including respiratory distress and pneumonia. It is reported by Guo et al., [14] that common antiviral drugs and systemic corticosteroid treatment used in clinical practice previously, including neuraminidase inhibitors (oseltamivir, peramivir, zanamivir, etc), ganciclovir, acyclovir, and ribavirin, as well as methylprednisolone for influenza virus, are invalid for COVID-19 and not recommended. Remdesivir has been reported to treat the first case of COVID-19 in United States of America successfully [15]. Scientists have confirmed that the protease inhibitors - lopinavir and ritonavir - used to treat infection with human immunodeficiency virus (HIV), could improve the outcome of MERS-CoV and SARS-CoV patients. A report from Korea demonstrated decrease in β -coronavirus viral loads of a COVID-19 patient significantly after lopinavir/ritonavir (Kaletra®, AbbVie, North Chicago, IL, USA) treatment [16].

Chloroquine, which was used to treat malaria for many years, is a repurposed drug with great potential to treat COVID-19. Several possible mechanisms are proposed for its effectiveness such as inhibition of pH-dependent steps of the replication of several viruses, immunomodulatory effects suppressing the production/release of TNF- α and IL-6, and an autophagy inhibitor interfering with viral infection and replication [14]. In vitro studies have demonstrated that a combination of remdesivir and chloroquine is effective in COVID 19 management. The protocol, which can easily be adapted and followed in COVID 19 patients proposed by Infectious disease unit of Penang General Hospital in Penang, Malaysia (updated on 22.3.2020) is provided as Figure 3.

In an advisory released by National task force for COVID 19 of Indian Council of Medical Research (ICMR) on 22.3.2020 [17], it is recommended that hydroxy-chloroquine (400mg twice daily on day 1 followed by 400mg once weekly for next 7 weeks) taken with meals can be used as a prophylactic measure in SARS-CoV 2 infection in high risk populations. This can be taken by asymptomatic healthcare workers who are involved in management of COVID 19 suspected individuals and asymptomatic house-hold contacts of laboratory confirmed COVID19 patients. This is not recommended for children below 15 years and those who have known hypersensitivity to hydroxychloroquine-4 - aminoquinoline compounds or in persons with known retinopathy.

CONCLUSIONS

COVID 19, the global pandemic, is continuing to grow more than 3 months after it was first detected in December. The first case of this viral disease in India was reported on 30 January 2020, with a direct link to Wuhan, the capital of Central China's Hubei province itself, from where the outbreak was initiated. Afterwards, there appeared multiple sources linked to the Indian infection, such as from Italy, Iran, Spain and middle east countries to name a few. It is of relief that the

infection rate (R0; pronounced as “R naught -is a mathematical term that indicates how contagious an infectious disease is) of COVID-19 in India is reported to be 1.7, which is remarkably lower than in the worst affected countries [18]. The government has also issued a complete lock down of whole country along with closure of all international borders and stopping all domestic airline operations in order to prevent spread of the disease. This pandemic has affected each and every one in the country with major setbacks on economy, education, trade, tourism and what not.

It is difficult times for all us at the same time an opportunity to show the unity and solidarity to our dear nation and act as its responsible citizens. As health care providers, we orthodontists, should take part in this fight against dreadful virus attack, in whatever way we can and become helpful to the government authorities. Without having any proper treatment protocols and vaccines, the only way to prevent the spread of this disease is through the way of social distancing, which each and every one should observe in order to prevent devastating effects to our motherland. It is our moral responsibility to adapt proper hygiene, sterilization and disinfection protocols and appropriate screening methods, in order to keep our offices a safe place for patients, visitors, fellow colleagues and staff specifically and our state and nation at large.

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International Women's Day Celebrity Interview

From our Own Hon. Secretary – Dr. Sri Devi Padmanabhan
The 1st Women Secretary of Indian Orthodontic Society

Covered By : Editor , Dr. Kannan Sabapathy

On the occasion of
World International
Women's day (8th March)

A special message from the first lady Hon. Secretary of the Indian Orthodontic Society Dr. Sridevi Padmanabhan. (SP)

IOS times editor Dr. Kannan Sabapathy (KS) :The theme for International Women's Day (8 March) 2020 is, I am Generation Equality: Realizing Women's Rights. This was adopted in 1995 at the Fourth World Conference on Women in Beijing, China. Do you think women have achieved equality?

Dr. S P:Despite significant progress women have made in many streams, the emerging global consensus is that there is still a long way to go in establishing equality. While social media loves a good story and idolizes and encourages successful women, the reality is quite different probably due to social & cultural barriers. Women in the workforce are distinctly less than men even in progressive countries and there are several reasons for this. Family pressures, lack of a support system with children and shifting priorities after marriage are some of them.

Dr. K S:Do you think Men or women make better leaders?

Dr. S P:There is evidence to show that women have excellent leadership qualities, being as skillful and intelligent as men, more altruistic, better soft skills and multitasking abilities. Unfortunately there is a gap between what data shows and what people perceive. Women in various streams are handicapped by their inability to network as much as men can, are not very good at promoting themselves and this is a distinct handicap when climbing up the ladder. Also people at the top are mostly men. But if given a fair chance and in leadership positions, they have proven to be excellent leaders. Unfortunately it has not been recognized that women need to work harder to prove they are as good as men and end up doing more in a collaborative team, leading to burn out and stress.

Dr. KS: Your journey in IOS.

Dr.SP:I have been a member of the IOS since 1996 and got elected into the EC in 2009 mostly because I wanted to serve as Editor, JIOS. Having lost that election in 2010, I went on to serve another three terms as EC member before I was elected as Editor, JIOS from 2014 to 2018. I was elected as Hon. Secretary in 2018. When I came in, I needed an EC term to be editor and I never expected to stay this long but IOS has been a major part of my life for the last decade or so. I have been blessed to receive the support of so many mentors, advisors and have made many friends in this wonderful journey and the encouragement I received has brought me here. I can't say that the drive has always been smooth but it has been exciting. I have learnt on the job from so many others, acquired capabilities and skills that I never thought I could possess and have felt a sense of satisfaction when things have gotten done.

Dr. K S:The IOS registration which has seemed a near impossible task has got sorted out in your term. How did you manage it?

Dr. S P:JointSecy (Dr.Gnanashanmugham) and I had made several trips to Vellore and when we started out it was with a lot of trepidation and misgivings. It involved a lot of grunt work and several wo(man) hours in terms of record sourcing ,assimilation and submission. We were blessed to have a good teammate in our treasurer Dr.Sanjay Labh who powered our efforts from Delhi. Things got resolved faster than we expected, thanks to him and we are glad to say that the IOS is now back on track.

Dr.KS:How are you able to balance IOS responsibilities with your family commitments & your profession?

Dr.SP:I believe that with privilege comes responsibility. I tend to be a compulsive worker and this involves sacrifice of a lot of personal and family time. I am blessed with a supportive and understanding family .Maybe because my husband served as the president of the Indian and Asian Prosthodontic societies,this helped him understand and encourage me. My father has also been quietly encouraging and supportive whenever I was in doubt and this means a lot to me.

Dr.KS:How do you see the role of women in IOS?

Several women in the orthodontic profession are doing extremely well in practice, teaching and research and it is difficult to name them all. But the number of women who opt for positions in IOS administration are less. It is easy to see why. IOS EC & Office bearers posts are honorary , involves a lot of travelling, time away from family and additional expenditure.

The number of women who have served the IOS in various capacities from 1992 to present is very less and I take this opportunity to acknowledge them for the benefit of the younger members. I am not sure of the data before that and I apologize if I have left someone out.

We have also had a few women executive members who have actively contributed to the Indian Orthodontic Society administration.

Dr.M.S.Rani, Dr.Reena R Kumar, Dr.Hina Desai, Dr.AnnaVaz, Dr.Bela Jain
Dr.TapasyaJuneja, Dr.PujaKhanna, Dr.RevathiPeddu, Dr.MridulaTrehan
Dr.SwatiAcharya, Dr.Kavithalyer, Dr.PadmaPriya, Dr.Vedavathi

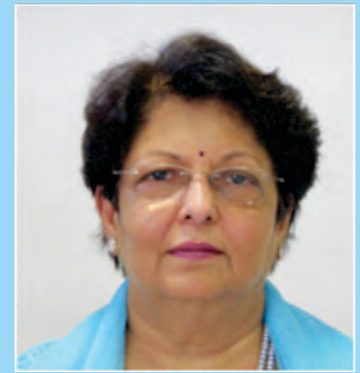
What would you say to the women in IOS?

I wish that more women would choose to come into the IOS administration. As you can see, the numbers over the last 28 years is very small .I am not saying that women need to be heard but I am saying that maybe a lot can get done and women can contribute and do it well.

To quote Stephen Covey "What you do has far greater impact than what you say".



Dr. Alka Banker and Dr. Kalyani Trivedi
served as Joint Secretary and Treasurer respectively



Dr. Asha Verma
(Served as Vice President & President)



Dr. Ashima Valiathan
served as Editor, JIOS.



Dr. Mala Ram Manohar
served as Vice President



Dr. Gauri Vichare
has been the only lady IBO director

Women's Day

March 8th 2020!

An Equal world! An Enabled World!

Section Editor: Dr. Swati Acharya

A special thanks to Dr. Salil Nene for his humble contribution towards this section !



Celebrated on March 8 every year, it is a day dedicated to honoring achievements of women throughout history and across the world. It is a day for women from different backgrounds and cultures to band together to fight for gender parity and rights.

The world and our society have witnessed a significant change and attitudinal shift in women's and society's thoughts about women's equality and emancipation. With more women taking up responsibilities in our society and respective fields, greater equality in legislative rights in the world, and also an increased mass of women's visibility through their achievements as role models in every aspect of life, women have gained true equality.

While the day itself carries the theme of female empowerment across the globe, the way it's acknowledged and celebrated differs from country to country.

To embrace this day the office bearers of Indian orthodontic society marked Women's day celebrations with nominations under three categories (age groups) based on their achievements. The winners were Dr. Raja Lakshmi SJ, Dr. Bhagyalakshmi Avinash and Dr. Gauri Shekhar Vichare.

As individuals we are all responsible for our own thoughts and actions every day. We can choose to challenge stereotypes, broaden perceptions, improve ourselves with situations and celebrate women's achievements.

So to make a difference, we should think globally and act locally! Let's Make everyday International Women's

Dr. Rajalakshmi S J, MDS

Miss Wheelchair India 2014

Miss Popularity Miss
wheelchair World 2017

Ambassador of Miss
Wheelchair World in India

Brand ambassador of
Wheelchair sports

Travelled 13 Countries on
wheelchair

3 National awards 2017(
Government of India)

National award honored by Mr.
President as role model of India

Tedx speaker

Peer trainer for WHO
wheelchair service training

Rated as one of the Bold Women in India

Women Empowerment Drive 2018 - 10 days car driven
across Karnataka

Assistant professor at Government dental college,
Bangalore

Proprietor - SJ Dental Square, multi specialty dental
clinic

Chairperson - SJ Foundation (works for the causes of
disabled)



She is blessed with 2 different lives in the same lifetime one of the abled & other of the differently abled. Her journey on wheelchair began when she was 21 years old due to a road accident leading to spinal cord injury, unsuccessful surgeries & a wheelchair for lifetime. Being on wheelchair, she completed Bachelors of dental surgery, did a course in Psychology, Fashion Designing, Vedic Yoga, wheeled the ramp for Orion Fashion Week 2015 and went on to bag a Gold Medal in Masters of Dental Surgery. From being an Assistant Professor in a dental college to being the proprietor of dental clinic S J Dental Square & serving as the chairperson of my organization S J Foundation which works for the causes of the disabled, she has involved herself in various activities. Recently received national appreciation award by Indian Orthodontic Society at Jaipur. Won a national award for Role model of India by government of India honored by Mr president of India, December 2017 at Delhi. She was also honored with few more national awards, Hindustan Ratna award and APJ Abdul kalam achievers award 201

Dr. Bhagyalakshmi Avinash MDS, PhD

Dr Bhagyalakshmi Avinash is currently working as Reader, Dept of Orthodontics, JSS Dental College & Hospital, Mysore has finished her BDS & MDS from GDCRI, Bangalore. She completed her PhD from JSS Academy of Higher Education & Research, Mysore. Her PhD research was awarded as the "Best Research Paper" at the 51st IOC & 8th WIOC held at Goa.

She is presently pursuing FAIMER (Foundation for Advancement of International Medical Education & Research)- an international fellowship from MAHE, Karnataka. Her recent start up, "Breathe Healthy" which is an Inter professional Collaboration between ENT, Paediatrics & Orthodontics has gained a lot of appreciation from the Medical fraternity. She was awarded the Best Inter professional Project poster at the ICON-IPEPC conference held at Malaysia in December 2018 for her work on 'Breathe Healthy'.

Presently she also running Breathe Healthy special clinic at JSS Hospital, Mysore where in ENT & Paediatric Doctors & PG students are learning about the importance of orthodontic management of airway problems.

This Inter professional collaboration was also accepted by Oral Health Innovation Conference organised by Ministry of Health & Family Welfare & AIIMS, New Delhi. She is trained and certified in E-Learning teaching learning methodology & Healthcare accreditation which includes NAAC.

At her workplace, she is the representative of important bodies of JSSAHER like,

- 1) Internationalization & Collaboration Division
- 2) Sustainable Development Goals & Quality Division
- 3) Training & Placement Cell
- 4) National Career Scheme, Ministry of Labour & Employment (MoHRD)
- 5) Internal Quality Assurance Cell

Dr. Gauri Shekhar Vichare

She is currently working as a Professor and Post graduate teacher, Dept. Of Orthodontics, Bharati Vidyaapeeth Deemed University Dental College, Pune.

Graduated in 1984 from Nagpur University and completed masters in orthodontics from the same university from the very first batch in 1987.

She is a Diplomate of Indian Board Of Orthodontics and M.orth. RCS Ed (Royal College of Surgeons, Edinburgh in 2002).

She is also an Ex-officio Board of directors, Indian Board of orthodontics and chairperson of the board for the year 2008.

She completed her PhD in 2014 and clinical experience since last 32 years.



Athelete of The Month

Dr.Uma Revathi (LM 1994)



Endurance Cyclist

Section Editor : Dr.M.S.Kannan

Dr Uma completed her graduate degree from the Dental College, Chennai, Tamilnadu. She state entrance and 55th rank in All India MDS 2005-2006. She joined Sri Venkateswara Dental College as senior lecturer in the year 2009, presently working as the Professor in the same college. She own a private practice at Adambakkam, Chennai.

She was never into any form of regular athletics in her school or college days being a nerd student that her friends often refer her as. She was like every other working woman going to work, taking care of her son and family. Two years after her child delivery, she was diagnosed with her familial disease, the Autosomal Dominant Adult polycystic kidneys and liver. The disease began showing its first symptoms in her, an elevated blood pressure. She was put under anti hypertensives. Life became monotonous and continuing.

It was then MOSG conducted a cycling event for 35 kms which was organized by Dr. Kannan and Dr. Sridevi. That was her first long distance cycling which instilled some sort of slight confidence in her, but she never thought then that she would become this much passionate about cycling.

A year or so after this, one of her neighbor and good friend Mr. Anil Sharma who is the founder of a volunteer fitness group named Vibrant Velachery came to her clinic for a dental complaint. Though he used to talk about these cycling activities even before, she showed more interest that time since she wanted to keep herself more fit owing to her health issues. She became her coach and that's how it all started. And there has been a never look back. Slowly she started with a distance of 25- 50km.

Then moved on doing long distances, the first one came in the form of Home event (Rolls the Wheel by VV) she did 50K and surprisingly came first, soon upgraded to 100K (WCCG 100K ride) there also she stood first in female category.

Her growing interest into cycling introduced her to BRM rides (Brevet des Randonneurs Mondiaux). These are long distance rides conducted by Audax India Randonneurs club under the leadership of Audax France. These rides consists of 200/300/400/600/1000/1200/1400/3000KMs conducted across India by Audax India club, on completing ride of 200/300/400/600 Kms in an Audax year (01st Nov to 30th Oct) the rider will be given the title of Senior Randonneur (SR). She made up my mind to become one and the first test ride for 200 KM was planned.

It was a midnight 200KMs ride called Independence Day ride, started on 15th of Aug 2017 to commemorate Independence Day. She was determined to do this ride encouraged by her husband and supported by her coach and group VV. But on the evening of 15th it started raining cats and dogs. There was water logging all over and the weather prediction was not optimistic, so her family urged her to give up. She could not convince her husband. She wanted to give it a last try. So she said to her husband like she would go to send off the other members. But she carried her cycle and other items along. At the event, she spotted one more lady rider, she had a good excuse for convincing her husband again and somehow succeeded in her attempt and the ride started. It was quite a challenging and thrilling ride, water logging and complete darkness at most of the places with only front lights showing the way. Her group members never left her alone. The dawn came and it was a wonderful village side route . The ride was continuing and being the first long distance ride, her back and shoulders started aching but she was keeping her mind strong. She finished the ride an hour earlier than the prescribed timing. She could not believe herself that she had done a 200km.

Dr. Uma Says...

“ There was no look back from then on and I started my BRM series. 200/300/400 went on without many hurdles with my group riding along throughout. The setback came from 600KMs ride, it was rainy season again, there was a

heavy down pour near Tindivanam and I was almost freezing, got raincoat from fellow rider and was continuing since we were already running out of time. To make the situation worse one of the team rider met with a crash, again lost some time. We were able to finish only after a delay of 1 hr beyond the prescribed cutoff. So this ride could not be counted in the series and I had to do yet another 600 km in order to qualify for the SR. Madras Randonneur didn't have any schedule for 600KMs then, the most nearby event was at Trichy by Trichy Randonneur club, and that was supposed to be an Epic ride touching the last tip of land India with U turn point at “Dhanushkodi”. It turned out to be truly Epic ride with climb of Pamban bridge, the stretch between Rameshwaram and Dhanushkodi with blue sea line on both sides, what a sight to remember and cherish all through life. I had goose bumps all through that particular stretch. The headwinds were very high throughout the routes adding additional challenge. While riding, we were referring to the roads as going to moon since there were continuous uphill. Since 600 km's time limit was 40 Hrs, it means you have to be sacrificing two days of sleep. It becomes very difficult on the second night especially. But here is where your mind strength becomes more important not to give up. After so many hurdles, finally my history was done; I finished 15 minutes before the cutoff and became a proud SR.

All these rides are not mere cycling, they teach us a lot of life lessons as well. These rides have brought in a lot of tolerance and patience in me. I have taken rest on roadsides and places where I would not have even preferred to stand otherwise. We hardly get a few minutes to rest while riding and we cannot afford to lose even a second of that, so we have adapted ourselves to get accustomed to whatever the situation dictates and demands. This has influenced my general attitude to life as well. One more important thing that I will attribute to these rides is, I have started to believe more in humanity because of the people we met during the rides. All these rides mostly happen through interior village routes and there have been a lot many incidents of the villagers supporting us, insisting us to have water and butter milk, offering shelters voluntarily, their inquisitiveness in knowing our motive behind these rides, the wonderful children shouting and cheering at the top of their voices, etc. Many a times I have heard exuberant voices on seeing a woman rider amongst mostly men crowd. It makes you feel proud that you are indirectly inspiring every woman towards the fact that everything is possible by all despite the gender. These rides have taught us the importance of working in groups, handling the physical and mental exhaustion, dealing with punctures and other repairs and so many.

In addition to taking the cycling as part of exercise training

and events, I take an extra step to serve the environment by cycling to work whenever possible. There are people in our group who regularly cycle to work despite have posh cars at home. I have myself seen people giving way for you at signals, the bus drivers waiting for the cyclists to pass when we are near to bus stops and so many other exhibits of the acknowledgment that people have towards the hard work. It gives a lot of pride and complacency when I park my cycle in my allotted car parking at college. I have always tried my best to take the happiness to the community by conducting cycling events at college, at my apartment and with my friends.

Currently am looking forward for 1000KMs and beyond, who knows I might even try the “Paris Brest Paris” ride of 1200KMs in France –Paris, the so called PBP (Mecca of endurance cycling). I don’t really know how far my health condition will allow me to stretch, but I believe in the saying “life is not over until it’s over”. Living life the way you want is the gift everyone should gift themselves with.”







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BRACES SELFIE / SMILING CONTEST REPORT

Reported by Dr Gaurav Gupta,
Chairman of Public Awareness Committee

The Public Awareness Committee-2020 of Indian orthodontic Society as a part of its yet another activity for the year Smile 2020 conducted the Braces Selfie/Smiling Contest which ended on the 15-03-2020. All interested participants submitted a smiling selfie (A selfie (/ˈselfi/) is a self-portrait digital photograph, typically taken with a digital camera or smartphone) of their ongoing braces patient with braces visible with a caption about braces like “braces are good” etc. The main purpose of this contest was to get some good smiling photographs of ongoing patients with braces which can be used as models/public awareness content on various social media platforms as well as for the patient awareness website. Winners were selected by a panel of 5 judges based on creativity, originality and relevancy of the photos submitted to the Contest theme. The top three winning images were awarded to:-

1. Ms Ritupriya Mallik treated by Dr Avik Kumar Biswas LM 3625 with caption of her photograph as “Shining with my braces”.
2. Ms Varsha Gangadhar treated by Dr Romil Shah with caption of her photograph as “brace yourself for charismatic smile”
3. Ms Rashi Bhardwaj treated by Dr Ayush Garg SLM 8467 with caption of photograph being “Just like diamonds, braces make smile flawless”

A detailed Public Awareness campaign had been presented to the EC during the 2nd EC meeting held on 22-02-2020 at Hyderabad, Respected IOS members look out for this Public Awareness Space in IOS times for all the update related to the Public Awareness Committee and updates about all the interesting activities coming your way throughout the year.

On behalf of the Public Awareness Committee we would like to thank all the members for their enthusiastic participation in the contest. Looking forward to your similar participation in all our future activities

Chairman: Dr Gaurav Gupta

Members: Dr Divyaroop Rai, Dr Anand Tripathi, Dr Ashish Garg



1st Prize Ms Ritupriya Mallik treated by Dr Avik Kumar Biswas LM 3625 with caption of her photograph as “Shining with my braces”.



2nd Prize Ms Varsha Gangadhar treated by Dr Romil Shah with caption of her photograph as “brace yourself for charismatic smile”



3rd Prize Ms Rashi Bhardwaj treated by Dr Ayush Garg SLM 8467 with caption of photograph being “Just like diamonds, braces make smile flawless”

Voice of Your EC Member

Section Editor- Dr. Kavitha Iyer

IOS Times shall cover Interview of EC Members in current office. These EC Members are selected by us the members, to represent us in the head office. They shall share an Insight of their experience, responsibilities, balance of their daily life style with honorary IOS Office work through this interview. Their interview should be an eyeopener for the general membership on the weightage of their responsibility and shall guide and inspire the aspiring members who want to serve IOS in the future.

This Issue Shall cover interviews of EC Members who are debutants in the Current IOS EC.

- **Dr. C V Padma Priya**, Bhimavaram, Andhra Pradesh
- **Dr. Virag Bhatia**, New Palasia, Madhya Pradesh
- **Dr. Reji Abraham**, Hassan, Karnataka
- **Dr. Siddarth Shetty**, Mangalore, Karnataka

Dr Padma Priya C V

Professor & Head
Associate Dean (Student Support Services)
Vishnu Dental College, Bhimavaram, AP

What inspired you to pursue as an EC member of IOS?

The feeling of self-satisfaction that comes when one sees the growth of your speciality and fellow colleagues is indeed great. I've enjoyed my academic career of 20 yrs so far, but I really feel I've got more to offer as an independent member. Also, my existing academic and professional work instilled in me an ability to put forward ideas clearly and concisely which are essential for an EC member. My passion for my profession has only been multiplying & I will take this as an opportunity to contribute to the society at a larger level. Emphasis on the dedication, passion and personal time required to serve in EC

Given the increasing pressure and demands placed on working women, balancing work and personal life is very challenging and stressful for many women.

One should know the importance of planning ahead in order to save time and stress. I arrange my daily tasks in order of priority.

Equally important, is the ability to embrace our career and family by believing in ourselves & having a positive outlook.

What is your Current responsibility in EC

Presently I am a team member of the Academic Council & Curriculum Revision committee for 2019-2020

Where do you look at yourself, down in 10 years in IOS EC.

For a beginner like me, these 10 years play a significant role. Working with IOS can cement my step in a positive direction. For what I have heard, this organization is as good as it gets. I can ask no more. I can contribute to my full capabilities in the upcoming years. In return, I can see myself sharpening my skills. I can feed my knowledge with the experience of the existing work team which is fantabulous. My academic career has helped me bloom into a professional with great managerial skills myself. Years ago, I wanted to be where I am today. So 10 years from now, I want to set up realistic goals for myself and also for my organization. I will keep the same fire alive within and I hope I will achieve my goal.



What advice would you give for IOS members who are keen to serve as an IOS EC Member

My suggestion for the members of the IOS would be to actively participate & enrol in all the initiatives under the theme 'smile 2020', work as a team, take timely advices from seniors, strive to be united & as our president rightly said "a lot of unnecessary misunderstandings and hurdles can be easily overcome with a smile". They should be excited to take up managerial responsibilities in the coming few years. Besides, I also believe the women members in the IOS have the potential to lead projects & if they are able to deliver in a team, I am sure the Indian Orthodontic Society will give them the chance to become one of the forerunners.



Dr. Virag Bhatia,

Orthodontist

New Palasia, Madhya Pradesh

What inspired you to pursue as an EC Member of IOS?

I joined BDS in 1998 when dentistry was at its peak as a profession. In 2008 after completing my MDS I started my professional career as a full time teacher and private practitioner. Last 12 years orthodontics has given me all the name, fame and recognition. So it's time to return back to the branch which has given me everything in life and what better way to do it than serving the society as an Executive Committee Member.

Emphasis on the dedication passion and personal time which is required to serve the IOS EC

Being an IOS EC member needs a lot of commitment and dedication and you need to take time out of your schedule to serve the IOS. You are member of 3 to 4 sub committees and are given particular work in all

these sub committees. Apart from that there are 5 EC meetings you need to attend during your one-year tenure as an EC Member, 2 EC meetings are held at the national conferences whereas three are in between for which you need to take a day or 2 out of your own schedule for each EC meeting. All CDE programs held by IOS are to be approved by the EC Members.

What is your current responsibility in this EC?

Currently I am part of three committees

1. The IOS Research Committee
2. IOS Curriculum Revision Committee
3. IOS Student Welfare Committee.

In IOS Research committee this year we have been able to lay down the guidelines to provide research grants to both life members and student members. These guidelines will be followed every year to give research grant to both student members & life members. In the IOS curriculum revision committee we have to formulate revision guidelines for existing curriculum, PG preclinical, topics to be covered in the current perspective and change in examination pattern required considering the current situation.

In IOS Student Welfare Committee we were given the work to select 30 competitive papers for IOS PG Convention Hyderabad, we are also working on international exchange program for students, reduced registration fees for students, research forum for students.

Where do you look at yourself down in 10 years in IOS EC?

10 years is a long time, but would like to play a role in the growth of IOS and Orthodontics. Making IOS a society, which is more inclusive than exclusive. Need to find ways to motivate our student member to become life members. With changing times we as a society also have to think out of the box.

What advice would you give for IOS members who are keen to serve as an IOS EC MEMBER?

Those Members who are keen to serve the society are always welcomed by the society. Any member who is keen can definitely join in, with every new member comes a new thought process to take the society to greater heights.

Jai Hind Jai IOS

Dr REJI ABRAHAM

Dean Administration, Professor & Head
Department Of Orthodontics & Dentofacial Orthopaedics
Sri Hasanamba Dental College & Hospital
Vidhyanagar, Hassan-573202, Karnataka.

What inspired you to pursue as an EC member of IOS?

I felt that in recent times the Orthodontists are facing new challenges in a big way. The non-specialists practicing orthodontics casually is one among them.

The deteriorating standard of specialty training at dental colleges, the reluctance of the trainees to undergo proper training and the pressure on the dedicated specialty teachers are a matter of real concern. Another issue which bothered me is the reluctance of a large number of orthodontist to join the IOS.

Again the high registration charges of the conferences and PG conventions are preventing the IOS members from attending these events. I felt a need to address these issues and this persuaded me to be part of the IOS administrative body as an EC member.

2) Emphasize on the dedication, passion and personal time which is required to serve the IOS EC.

Being part of the administrative team of the IOS is an honorary job and need real dedication and passion as one need to spend their personal time and resources. He has to spend his own money for travel and will have to skip their practice / work. One has to communicate with the members, understand their issues and convey it to the IOS administration and try to address the problems. But definitely it is worth the pain and surely can quench your thirst to serve the society.

3) What is your current responsibility in this EC?

I am privileged to be part of 2 committees

- 1) Study group committee
- 2) Finance committee

Along with these assigned jobs I am striving hard to do justice to the objectives which persuaded me to be part of the IOS administrative team and at times had to step out of the comfort zone for the same.

4) Where do you look at yourself, down in 10 years in IOS EC?

10 years is really a long time to predict but I am sure I will be right there as part of the IOS doing my best for its betterment.

5) What advice would you give for IOS members who are keen to serve as an IOS EC member?

It is a great platform for the service minded and IOS definitely needs selfless, fearless visionaries to take it forward.



Dr. Siddarth Shetty, MDS

LM 219, Professor & Head
Department of Orthodontics & Dentofacial Orthopedics
Manipal College of Dental Sciences, Mangalore

What Inspired you to pursue as an EC member of IOS?

I've been a member since 17 years and attended AGM's at various conferences. I felt it was only natural to aspire for a seat at the the head table. **Emphasis on the dedication, passion and personal time which is required to serve the IOS EC.** I've just attended one EC meeting as of March. The speed and efficiency of the EC members to implement initiatives is commendable. I'm sure it's a real sacrifice for the Principal office bearers and it takes a toll on their practice and personal time. It's definitely passion which drives the EC.

What is your current responsibility in this EC?

I am a member of the public relation and communication committee.

Where do you look at yourself, down in 10 years in IOS EC?

10 years is too far down the road to visualize :). I would like to be in any position where I can make a positive impact. The post doesn't matter.

What advice would you give for IOS members who are keen to serve as an IOS EC Member ?

If you have an intention of doing something to raise the standards of Indian orthodontics and make a difference for the members, then contest the elections and try to get in. The IOS needs you.

COUGH ETIQUETTE

(ADVISORY FROM INDIAN ORTHODONTIC SOCIETY)

COVER YOUR COUGH



Cover your mouth and nose with a tissue when you cough or sneeze

OR



Cover your mouth and nose using your **UPPER SLEEVE**, not your hands, when you cough or sneeze

Put the used tissue in a waste basket

OR



Wash your hands with soap and water

Clean them with an alcohol-based hand rub if soap and water are not available



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INDIAN ORTHODONTIC SOCIETY

Public Advisory



ATTENTION

STOP THE SPREAD OF COVID-19

(ADVISORY FROM INDIAN ORTHODONTIC SOCIETY)

For Everyone's Safety, we need to know if you have
FLU-LIKE SYMPTOMS such as:



**COUGH /
DIFFICULTY IN BREATHING**

FEVER / HEADACHE



JOINT/MUSCLE ACHE



FATIGUE / WEAKNESS

DIARRHEA / VOMITING



STOMACH ACHE

Please tell our STAFF

Your safety & well-being are our first concern

STOP THE SPREAD OF COVID-19

(ADVISORY FROM INDIAN ORTHODONTIC SOCIETY)

BASIC HYGIENE RULE

- ★ WASH HANDS before & after Checking every patient
- ★ Nails – well cut & avoid Nail Paints
- ★ Take-off jewelry and watches that you'll take home later
- ★ Keep the room Ventilated



PERSONAL PROTECTIVE EQUIPMENT

- ★ Wear Disposable Gowns, Caps
- ★ Change Gloves after checking every patient
- ★ Change Mouth Mask if wet or contaminated & do not store in your pocket
- ★ Use Safety Glasses or Protective Face Shields



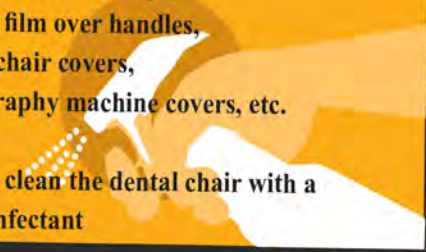
- ★ Immerse instruments in disinfectant immediately after use
- ★ Follow good washing practices with Ultrasonic or Thermidisinfector
- ★ Dry the Instruments thoroughly
- ★ Sterilise in a **Type B** autoclave

Follow Sterilization



Clean and disinfect frequently touched objects and surfaces.

- ★ Use disposable material
 - Drapes on counter tops,
 - Barrier film over handles,
 - Dental chair covers,
 - Radiography machine covers, etc.
- ★ Thoroughly clean the dental chair with a surface disinfectant



IOS Congratulates Dr. DIVYAROOP RAI for his valuable contribution of the COVID_19 TASK FORCE POSTERS as Education Material – Both for Orthodontists and the Patients.

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- Improved patient comfort with enhanced facial contours.
- Improved utility with refined Hemi Hooks™ and permanent I.D. marking system.
- Confidence in performance. The Mini Diamond is made from a stronger grade of stainless steel than traditional brackets. The result is smaller brackets that don't compromise strength.

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