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U.P. State Dental Journal

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(Founded in 1953)

(An Official publication of the U.P. State Branch of the Indian Dental Association

Messages

Dr. Dibyendu Mazumdar
BDS (Cal), MDS (BHU)
President, Dental Council of India

I complement the entire team of IDA, UP State for introducing the journal issue on COVID-19, which undoubtedly is a remarkable achievement and the need of the hour the current circumstances. These are challenging times, specially the field of dentistry requires modifications and incorporation of new and safer techniques and equipment safeguarding both the dentist and the patient.

The need of the time is an integration of our inner strengths, technical base, confident and talented upcoming cadre of young dentists in tune with global developments rapidly taking place at brisk pace covering entire set of specializations.

Enormous growth of audience in the field of research has permitted enthusiastic intellectuals to take an active part in the advances.

I hope this journal will provide a platform to share extensive scientific knowledge in the field of dentistry.

Dr. Ravindar Singh
President
IDA, Head Office

On behalf of Indian Dental Association Head Office, I would like to extend my congratulations on publication of the journal by IDA UP State Branch.

The launch of any Journal is the culmination of the efforts of academicians, researchers, editorial team and office bearers . All of them can be truly proud of and deserve to be congratulated for their dedication and commitment.

The journal provides a fantastic opportunity for all the dental practioners and the dental students to express themselves, to demonstrate their academic capabilities and to publish their research findings. Any good journal enhances our capacity to be a critical thinker, capable of weighing, evaluating and integrating new information in our evidence based dental practice.

I am very sure that this Journal with passion, sense of vision and commitment, will help us to enhance our academics and professional skills in our dental profession. It would be highly benefitting the members and the society at large and assist improving the nation's oral health and quality of life and achieving 'Optimal National Oral Health For All'.

Dr. Ashok Dhoble
Hon. Gen. Secretary
Indian Dental Association

It brings us great joy to know that IDA U.P. State is releasing its journal as we all know that this requires thorough planning, research, knowledge and dedicated team effort to collate and publish a journal for the dentist members in your region. I am sure the multiple disciplines and specialties that make up the science of dentistry will make the journal appealing to dental professionals.

It is encouraging to learn that U.P. State branch editorial team and office bearers are making all efforts to maintain high standards of quality that a journal should have besides being innovative and helpful, so that dentists can continually improve their skills.

Wishing you all at U.P. State all the best in this Journal.

Congratulations and best wishes.

Prof (Dr.) S. K. KATHARIA
Executive Committee Member
Dental Council of India, New Delhi
Immediate Past President
IDA, UP State

I am pleased to know that Indian Dental Association, U.P. State Branch is publishing its first online U.P. State Dental Journal. On this happy occasion I would like to extend my warm felicitations and good wishes to the President, Secretary, Editor, Office bearers, Executive Committee members and Members of the Indian Dental Association, U.P. State Branch and Local Branches.

A special greeting to Prof. Anil Chandra, Dean, faculty of Dental Sciences, KGMU, Lucknow and dynamic Editor and his team of Indian Dental Association, U.P. State Branch. I hope journal will give a platform for the exchange of scientific and clinical knowledge to the clinicians and researchers

I wish the grand success of the journal.

I hope this journal will provide a platform to share extensive scientific knowledge in the field of dentistry.

Prof. T.P. Chaturvedi
President
IDA, UP State

It is a matter of great pleasure and satisfaction that with initiation and activeness of the members of Indian Dental Association, UP State branch, we are going to start publication of UP State Dental Journal after gap of approximately 7 years. Further it gives immense pleasure and satisfaction that Prof Anil Chandra, Dean, Faculty of Dental Sciences, K.G. Medical University Lucknow is elected unanimously chief Editor of the prestigious journal for 3 years.

Definitely the upcoming issues of journal will be reflected experience for his marvelous earned academic stature related to dentistry in the printed form which will be beneficial to dental fraternity. The publication of Journal will be certainly provide a befitting stage to share research, clinical knowledge, practicing skills and expertise to the students, practicing doctor, academicians and others.

It is also highly commendable, that the editorial team is going to publish first issue as a special issue focused on the Covid 19 corona virus pandemic diseases. Ultimately it will be beneficial to keep good health for the society and the nation.

I congratulate entire Editorial team under the leadership of Prof Anil Chandra for wonderful, commendable academic job and providing their valuable time, efforts and knowledge for editing the journal. I extend my warm greeting and felicitations to the team for inaugural issue of journal and wish all the best for future.

Dr. Sachin Prakash
Hon. Gen. Secretary
IDA, UP State

I am extremely happy to introduce the first issue of the IDA, UP State Dental Journal. I am glad as this is a great opportunity for researchers, clinicians and academicians to publish their work. Also this journal will give the latest information of the recent developments in dentistry. I am sure this journal will be beneficial to all the dentists. Wishing great success.

Dr. Anil Chandra
Editor- in- Chief
IDA, UP State

The objective of the journal is the publication and wide electronic dissemination of research in all specialties of dentistry. The journal will feature the most advanced developments in our field. It will aim to attract and solicit high-quality original research papers.

There will be special emphasis on the most current topics of interest. The journal will also serve as an effective platform for the promotion of scientific exchange between researchers, academicians and clinicians.

The journal aims to promote international exchange of new knowledge and recent developments in the field of dentistry. It will include original researches, reviews and case reports. High quality researches will constitute the main highlights of this journal.

Dr. Manoj Srivastava
Immediate Past Vice President
IDA, Head Office
Ex-President IDA, UP State

Heartiest congratulations on the publication of this Journal of IDA UP State. IDA members and students will benefit from this update.

Dr. Umesh C. Sharma
President, Elect
IDA, UP State

It is immense pleasure to know that Indian Dental Association U.P. State branch started new addition of IDA Journal of U.P. State with hard work of dynamic editor of U.P. State Branch Dr.Anil Chandra sir ji.
I thank sir on starting new edition of IDA, UP State Journal with cover of conventional Covid-19.
My best wishes for the same and big thanks to editor sir and IDA UP State.

Review Article

Environment Protection in Dental Office for COVID 19

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ABSTRACT

SARS-Cov-2 that is responsible for the recent global outbreak for COVID 19 disease has been reported to be primarily spreading from person to person contact via droplet transmission [1]. In the wake of COVID 19 pandemic, there are several measures that can help protect the dental office environment from becoming the source of transmission to patients and Dental Health Care Personnel (DHCP). The article discusses the general measures, the intra-operatory measures and post-operative measure to prevent transmission of Corona virus through surfaces in dental office. Though the evidence for definite prevention is lacking, still precautionary measures will always be useful.

Key words: Dental office environment, SARS-CoV 2, COVID 19 transmission

Background:

Dental office environment includes all surfaces and air component occupying the facility. The purpose of protecting this environment is to prevent transmission of infection. This is particularly important in case of airborne or droplet infections. SARS-Cov-2 that is responsible for the recent global outbreak for COVID 19 disease has been reported to be primarily spreading from person to person contact via droplet transmission1. In the wake of COVID 19 pandemic, there are several measures that can help protect the dental office environment from becoming the source of transmission to patients and Dental Health Care Personnel (DHCP**).**

General principles/measures for dental office environment protection:

Minimize exposure:

The best way to protect environment from any contamination by infectious agents is to minimize exposure. This can be done by minimizing surfaces in dental office. Any item/equipment not in use or placed only for aesthetic purpose or considered difficult to disinfect can be removed from the dental office, especially in dedicated working areas/operatory. Surfaces which are deemed necessary to be in place but are difficult to disinfect can be covered with protective barriers that can be disposed at the end of the day or at the end of the procedure. These may include computer desktops/keyboards/screens/counter tops etc. Unnecessary movement of patients and contact with DHCP to be avoided. Signage and tapings can be used for the same. Screen guards can be placed at front desks/reception. The maximum/safe number of patients considered for waiting per day should be decided. Contact with surfaces can also be avoided to the maximum for the same purpose, for example preferring cashless transactions, installing sensor based faucets and sanitizer dispensers. All DHCP to be encouraged to change surgical attire (scrub suits) in the dental office, and all personal clothing should be avoided, again to minimize surfaces for disinfection. Personnel involved directly in task of cleaning/disinfection should wear appropriate Personal protective equipment (PPE) and follow strict hand hygiene measures while donning and doffing of PPE and also after completing their tasks Cleaning and disinfection of surfaces:

Centre for Disease Control and Prevention, United States has recently update its guidelines for environment protection in dental office. Earlier CDC recommended cleaning and disinfection of operatory should be deferred at least for 15 minutes after any procedure is completed and patient departure from operatory to allow dispersion of droplets to sufficiently fall from the air and settle down2. In the latest update of 17th June 2020, CDC has recommended that for cleaning and disinfecting operatory after a COVID 19 suspect/confirmed patient, waiting period should be sufficient enough so as to allow enough air exchange to occur2. CDC also recommends that though environmental cleaning and disinfection procedures should be performed consistently and correctly after each patient, there is no mandatory need of sterilizing the operatory between patients.

The dental office surfaces can be broadly divided into high touch and low touch surfaces, depending on frequency of contact and also based on risk of exposure involved. It is suggested that high touch/high risk surfaces should have a strict disinfection protocol than low touch/low risk surfaces. The high touch surfaces may include door handles, faucet knobs etc. High risk surfaces may include parts of dental chair frequently touched, and should be cleaned and disinfected after every patient attended. Low touch – low risk surfaces include floor, ceiling, walls etc. and may be cleaned and disinfected at the beginning and end of the day. Cleaning of floors should be done only with wet mopping. Use of brooms is not suggested. In case of spill on floor or any

other surface, immediate cleaning and disinfection to be done irrespective of cleaning schedule.

The general principle of cleaning/disinfection to be followed for routine purpose is to use cleaners and water to clean surfaces of any visible/gross dirt before applying any hospital-grade disinfectant. Similar protocol for floor involves General principle of environment cleaning to be followed: Visibly dirty surfaces to be first cleaned with detergent and water, followed by rinsing/wiping with clean mop/cloth rinsed in water, allowed to dry, lastly mopping/wiping with disinfectant solution.

All surfaces that can be sterilized by heat should be subjected to autoclaving. This includes all instruments used for patient care. Some equipments / instruments are sensitive to heat and so have to undergo disinfection cycles. These include sensors for digital X-rays, large equipments, stethoscope, sphygmomanometer, etc. Since most of these are metal or plastic based, they can be disinfected by 70 percent isopropyl alcohol. Alcohol based disinfection preferred for metal surfaces. Plastic surfaces can be disinfected by 1% hypochlorite solution. Floor wet mopping can also be done using 1% hypochlorite solution. Triple bucket system should be encouraged. Walls up to 7 feet to be disinfected by 1% hypochlorite. Hydrogen peroxide based wipes can be preferred in high risk areas like operatory where aerosol generating procedures are being done.

Ventilation of Dental Office

The 'air' component of dental office is very important to be maintained and protected as this can pose risk to both DHCP and patients coming for care. The primary objective is to keep the dental office well ventilated. CDC recommends that the dental operatory should be oriented parallel to air flow, air flow should be such that it moves from clean to less clean, and if feasible placing patient's head towards the return air vents2. An industrial hygienist/ventilation engineer can be consulted if possible. Heavy duty exhaust fans can be placed to allow outflow of air. The objective is to create 'negative pressure' so that air flowing out is more than air flowing into the operatory. Portable air purifiers can act as adjunct to maintain this airflow. UV light disinfection is also an adjunct to ventilation. However, CDC recommends that there is no evidence for UV light disinfection, only hospital grade disinfectants are proven to disinfect surfaces2.

Time management:

Time management for ensuring cleaning and disinfection schedules should be considered adjusted to the number of patients being attended by the dental facility. Proper timetable for the same can be prepared.

Maintaining storage and supplies:

A dedicated area for maintaining and storage of supplies required for disinfection should be allocated. Stock checking should be done regularly to avoid falling short of supplies.

Monitoring and quality control:

All disinfection and cleaning protocols should be available to all DHCP in the dental office. Compliance to the protocols can be ensured with short, simple checklists. Any deviation from protocols, under any special circumstances should be documented for future reference.

Environment protection during delivery of care:

The dental surgeon can consider dividing spaces/time slots for aerosol/non aerosol producing procedures. Individual rooms/operatory should be preferred for AGPs. High suction/extraoral suction can be considered during AGPs. With open floor plans, removable barriers between dental chair units should be placed. These barriers should be easy to clean and disinfect. There should be a space of six feet between two dental chair units. Portable Air purifiers can be installed (HEPA 13/14 filters preferred). These HEPA units should be within vicinity of patient's chair, but not behind DHCP. They should be positioned so as to not pull air into or past the breathing zone of the DHCP.

Dental Chair unit may be modified to avoid spitting into spittoon. They may be removed or covered with disposable plastic sheets. Cluttering of instruments should be avoided in the dental operatory. Unnecessary instruments should be kept in closets away from potential contamination. and not exposed/uncovered in the operatory. Only the clean/sterile supplies and instruments should be readily accessible. Oral impressions should be thoroughly disinfected before pouring or sending to the laboratory using an appropriate disinfectant.

Environment protection after delivery of care:

Patients should be asked to recover their face with mask/face cover once the treatment is done. Operator should follow proper doffing of PPE protocol in an area close to waste collection bins. Operator/Assistant should not remove mask in the operatory even after doffing rest of PPE. Mask should be removed only after exit from the operatory. Hand hygiene to be performed and then new mask can be donned. DHCP should not enter the operatory for any cleaning/disinfection before enough air changes have occurred, especially after AGP.

All instruments used in care to be collected and cleaned before disinfecting/sterilization as per instrument requirement. Visible dirt to be removed first. An area of three feet in all

directions of the dental chair unit should be cleaned and disinfected. Fresh cotton/ gauge piece should be used for every surface. Dental unit water lines including 3 in 1 syringes, water outlets, hand piece water pipelines, suction lines to be flushed for 30-40 seconds with water or mild disinfectant. All water containers should be removed from dental chair unit and washed thoroughly, disinfected with 1% sodium hypochlorite using clean cotton/ gauge piece and then filled with fresh 0.01% sodium hypochlorite solution and attached back to the dental chair. MOHFW (Ministry of Health nad Family Welfare) has recommended that fogging to be done for treatment areas3: "Fogging or 'No-touch surface disinfection' after a large area has been contaminated. The commercially available hydrogen peroxide is 11% (w/v) solution which is stabilized by 0.01% of silver nitrate. A 20% working solution should be prepared. The volume of working solution required for fogging is approximately 1000ml per 1000 cubic feet. After the procedure has been completed in the operatory (in case of no negative pressure), exit the room and close the operatory for half an hour for the aerosols/droplets to settle down. Perform the 2 Step surface cleaning followed by fogging. The fogging time is usually 45min followed by contact time/dwell time of one hour. After that the room can be opened, fans can be switched on for aeration. Wet surfaces can be dried/cleaned by using a sterile cloth or clean cloth (other surfaces)."

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Review Article

Herbs in Corona

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ABSTRACT

The Ayurveda being the science of life propagates the gift of nature in maintaining a healthy and happy life. There are some herbs which can be used in boosting immunity, fight the foreign pathogens and are safe to use with minimal side effects .It will be good to take preventive measures as there are no drugs or vaccines available for Covid -19. There are several herb species that have antioxidant, anti-inflammatory and antimicrobial properties. They have a wide variety of active phytochemicals including flavonoids terpenoids, polyphenols saponins alkaloids, proteins and peptides.

Introduction:

The SARS- CoV -2 virus is responsible for ongoing Corona disease. It primarily attacks lung alveoli for its replication. The spike protein of the virus binds to Angiotensin coverting Enzyme -2 (ACE-2) receptors on the surface of type 2 pneumocytes of alveolar lining w hich are internalised and +ssRNA is released with the help of host ribosomal machinery the RNA polymerase (RdRp) enzymeSARAS-CoV -2 synthesizes its polyprotein and multiplies its +ssRNA. The new copies of sars-CoV are released in to alveolar sac by destroying the infected pneumocytes. The inflammatory mediators released after pneumocyte damage recruit immune cells at the infected site. Macrophages released inflammatory cytokines in to the blood leading to vasodilatation of blood vessels increasing capillary permeability of endothelial cells. Neutrophil releases reactive oxygen species (ROS) and proteases to destroy viruses which also damage normal pnemocytes and generate cellular debris in

alveolar space. These inflammatory and immune responses results in to alveolar consolidation leading to increased respiratory rate followed by cough, the systemic inflammatory response acts as messengers to hypothalamus to increase body temperature in some patients the cytokine response goes out of control leading to excessive collateral damage to organs with a possible progression to death. [1]

Presently there is no cure for the disease so prevention should be take on priority till any definitive treatment is discovered or vaccine is developed.

Ayurveda's extensive knowledge is based on preventive care derives from the concept of Dincharya, Ritucharya and Sadvitra (code of conduct). It is plant based science to remain healthy and for the sick to regain health. The awareness about plants which are in our soundings and in day to day use can be helpful in fighting against various infections. Our Ministry of AYUSH recommended certain advice to boost our immunity with special reference to respiratory health.[5, 7]

In Charaksamita there is also chapter about Janpada Dymsa Vyadhi which means world- wide epidemic and advised to stay at home .This is a period to follow healthy Dincharya -wake up early morning, after routine kriya have tea with ginger, cinnamon and cardamom, Tulsi or even mint should be used for making tea. These herbs will boost energy as well as immunity.[6.7]

Some commonly used culinary herbs, spices, and herbal teas have also exhibited antiviral activities. They have antiviral effect either by inhibiting the formation of the viral DNA or RNA or inhibiting the activity of reproduction. The use of dietary therapy and herbal medicines to prevent Covid infection will help community to fight against this pandemic.

The Ayurvedic Rasayana are known for their immune modulator activitie . The adaptogenic and regenerative properties of rasayana botanicals help to maintain physiological homeostasis.

Overview of medicinal plants

The use of medicinal plants for prevention and cure of medical problems is preferred by large number of people all over world.

The plants and herbs resources are unlimited but because of increasing population resources are decreasing fast. Virtually cultures around the globe have relied historically and continue to rely on plants for primary care; around 40% of modern drugs are derived from natural sources using either natural substance or synthesized version.

The medicinal plants have various chemical constituents which have ability to stop the replication cycle of various types of DNA and RNA viruses. The compounds from natural sources can be utilized to control viral infection. A viral infection is mostly seasonal and is often treated with proper medication; some herbs known to have antiviral properties can be used in terms of treatment and improving immunity as well. They inhibit the growth of pathogens and boost immunity and fights foreign pathogens.

There are more than 5000 different types of virus that can cause serious disease like common cold, flu. Hepatitis, HIV, Virus is small infectious agent that replicates only inside living cells and can infect all forms of life like human, animal, plant and other microorganisms. Corona Virus is a new virus and till date no treatment or vaccine is available so it is very important to boost immunity and follow other instructions like maintenance of distance between people, proper hygiene and minimum exposure. Every virus is unique in its structure and behaviour, the herbs that seems to work for other viral infection will need to be tested to

see its effect on corona virus. There are some plants which are commonly used in our kitchen can be helpful in fighting with various diseases as they have antioxidant properties.

Ginger- It belongs to Family Zingiberaceae and its botanical name Zinger officinale. It is a common herb used with tea and other food preparations. It have antiviral, antibacterial and anti-inflammatory properties. Ginger contains compounds like gingerols and gingerone that helps to prevent growth of the virus. It is most common used herb to protect respiratory system. Fresh ginger is more beneficial as in comparison to dried ginger. It is used in nausea resulting from pregnancy and chemotherapy. It is also used as anti inflammatory and in reducing muscle pain. It has antiplatelet activities in dose of 5gram or more will be required for the above effect. It is good sources of antioxidants but do not provide calories or vitamin.[2,3,4]

Tulsi– Holy basil it is commonly found in every Indian home. It belongs to family Lamiaceae and its botanical name is Ocimum sanctum, ocimum tenuiflorum. There are phyto chemicals present like oleanolic acid, urosolic acid, rosmarinic acid, euginol, carvacrol. Essential oils like β-caryophyllene, β-elemene,and germacrene. It has antiviral, immune modulator, anti-inflammatory, radioprotective properties. A study revealed that basil contains compounds like apigenin and ursolic acid which is effective on herpes, hepatitis and enterovirus. It is very strong antioxidant agent and helpful in protecting respiratory system and improving immunity.[2,4,7]

Tulsi

Ashwagandha - This plant is known as Indian Ginseng**.** It belongs to family Solanaceae, botanical name is Withania somnifera**.** It has strong anti-inflammatory and antioxidant properties that improves immunity. It produces immunoglobulin and enhance immunity response and suppress cytokines to treat several inflammatory disease too. It is also rich source of flavonoids, antioxidants, alkaloids amino acids, neurotransmitters and other nutrients. It is helpful in management of thyroids disease and diabetes too. Researchers from IIT Delhi and AIST Japan reported that Ashwagandha beneficial in fighting the new variant of corona virus. The withanaone a natural compound present in Ashwagandha blocks the activity of Mpro or main protease which is a type of protein essential for reproduction of Corona virus. It was found to be the most potent immune modulator through its potential to modulate T cell differentiation, NK cell cytotoxicity as well as T cell, B cell and NOD-like receptor signalling pathways. Molecular docking studies showed that several phyto constituents possess good affinity for the Spike protein, Main Protease and RNA dependent RNA polymerase of SARS-CoV-2 suggesting their application for the termination of viral life cycle. Further, predictive tools indicate that there would beneficial herb-drug pharmacokinetic-

pharmacodynamic interactions with concomitantly administered drug therapy. These are Ayurvedic rasayana can be tried in terms of preventive as well as therapeutic purpose.[1,7,11]

Giloy – Guduch Amrita Family Menispermaceae Botinical name Tinospora Cordifolia. It is also known as Amrita a self explanatory name. It contains antioxidants that protects our body and it also have antipyretic properties too. It provides protection against bacterial and viral infection too. It is effective in Dengue fever in terms of improving platelet counts. It is beneficial for heart disease, diabetes, jaundice and arthritis, also known as the Ayurvedic root of immortality has wondrous healing powers. It possesses anti-inflammatory, anti-cancer, antipyretic, anti-oxidant and immunomodulatory properties. With the high antioxidants present in the compound, the drug can boost immunity and fight free radicals.it contains berberine is known for its antiviral properties. It will be helpful in fighting some of the symptoms associated with COVID-19.[1,7,11]

Giloy

Shatavari –family Asparagaceae botanical name is Asparagus racemosus. There are certain alkaloids are isolated from satavari roots. Asparagamine A, isolated from root of the plant .Steroidal saponins, shatavaroside B, Filiasparoside C, satavarins, immunoside are isolated from root of the plant.[1,7]

Pippali - It belongs to Family Piperaceae Botanical name is Piper longum**.** Kalimirch is one of the ingredient of Trikatu. Trikatu is commonly used for respiratory tract infection and chronic pain is combination of Ginger, Pepper and Pippali. Pippali enhances the absorption of Giloy when used in combination as suggested by Ayush department. Peepli is a traditional medicinal herb which is also known for its strong aromatic notes. The regular use of pippali root may helpful in curbing down symptoms of respiratory tract infection, bronchitis, cold, cough, asthama. It also improve blood circulation strengthen immunity and useful in relieving pain because of its anti-inflammatory properties.[7,11]

Yastimadhu, Mulethi or Liquorice- It belongs to family Fabaceae. The botanical name is Glycyrrhiza glabra**.**

The sweet herb, also known as mulethi or liquorice has been hailed for its therapeutic benefits, especially for those who are suffering from a cough, cold or flu. Its anti-inflammatory properties are helpful in problems related to sore throat and cough.

The sweetness in Liquorice comes from glycyrrhizn which is 30-50 times the sweetness of the sugar .the phytoestrogens present are isoflavene glabrene and isoflavane glabridin are present in root of mulethi.

It protects lung from inflammation by inhibiting cortisol metabolism one of the cause behind inflammation. It has imunomodulator properties.[7,11]

Ajawain or caraway. It belongs to family Apiceae Botinical name achyspermum ammi. Ajwain is used in traditional medicine various disorders it contains thymol, gamaterinene , p-cymene and other compounds which are predominantly

terpenoids. Its properties in literature as antifungal, hypolipidemic, antihyprertensive, abotifacient, antitussive is reported.[13]

Ajwain

Fennel- Family Apiceae Botinical name Foeniculum vulgare. The main compound of fennel seeds is trans anethole which is found to be quite effective against herpes virus, it boosts immunity and decrease inflammation in the body. The selenium which is present in fennel seems to stimulate production of killer T-Cells, which can improve immune response to any kind of infection. Raw fennel is good source of Vitamin C, which is essential for collagen synthesis and also works as antioxidant. Choline present in fennel is helpful in improving memory, learning and muscle movements.

Garlic. It belongs to family Amaryllidaceae, botanical name is Allium sativum. It has medicinal properties. It, effectiveness against influenza A and B HIV HSV-1, viral pneumonia and rhinovirus is reported. Garlic contains sulphur containing compounds allicin, aioene, diallyl polysulfides vinyldithinis, S-allycystene and enzyme. Saponins flavonoids and Maillard reaction products which are not sulphur containing compounds. Thomas Sydenham valued it application in small pox. Garlic was used as an antiseptic to prevent gangrene during world war I and II.[5,7]

Coconut oils – It have Lauric acid and caprylic acid which ae helpful in boosting immune system.[10]

Resveratrol- There are certain food items rich in resveratrol like peanut, pistachios, grapes blueberries, strawberries or even cocoa are helpful in fighting stress and infections.[9]

Vitamin C. The fruits rich in vitamin C are amla, red pepper, lemon and orange. Consumption of these fruits will help in fighting against certain viral and bacterial infections.[9]

Amla – Family – Phyllanthaceae Botanical name Phyllanthus emblica. Every part of Amla tree like bark, fruits, and leaves and flowers have medicinal properties. Fruit is sore and astringent (kasaya) in taste (rasa) with sweet (madhuram) bitter (tikt) and pungent (katu) secondary taste (anurasas) its qualities are light and dry (laghu and ruksha) and post digestive effect is sweet (madhuram) and energy is cooling. It is primary constituent in ancient herbal rasayana called chyawanprash. Fruits contain high amout of ascorbic acid Vitamin C, wllagitannins, emblicannA. 37% Emblicanin B 33%and pedunculagin 14%bitter taste is derived from these ellagitannins. It also contains punicafolin, phyllanembliniA, Phyllanembin other poly phenols such as flavonoids, kaempferol ellagic acid and gallic acid. Vitamin C plays important role in prevention of Covid infection and advised by AYUSH to take chyavanprash .[10,13,16]

Neem –Family Meliaceae Botinical name Azadirachta indica. Ayurveda was first to bring its antihelminthic, antifungal,

antidiabetic, antibacterial, antiviral, contraceptive and sedative properties. In skin disease detoxify blood, and balance blood sugar level. But it has some toxic effect when used in large doses it can lead to encephalopathy, miscarriage, infertility, and low blood sugar. Every part of neem is useful. Nimbin and nimbidin are main constituent responsible for qualities. Neem oil should be used in small children can lead to death. Long term use can be harmful for kindey and liver. Large amount of neem consumption can be fatal for patient, judicious use should be done.[8,13]

Neem

Haldi, Haridra, Turmeric is from family Zingiberaceae, botanical name is Curcuma longa. It is used in most of the our food items. It has potential effect on viral infection and have anti-inflammatory properties. It is a srong antioxidant, and immunomodular. Phytochemical present in turmeric are diarylheptanoids curcumin, demethoxycurcumin and bisdemethoxy curcumin are present [7 ,13]

Turmeric

Lavang,Clove- family Myrtaceae botanical name Syzgium aromaticum. Long use in traditional medicine euginol is effective in dental pain and treatment of dry socket its role in reduction of fever is still unclear but its use in aroma therapy in reported. [13]

Dalchini (Cinnamon) Fmaily Lauraceae Botinical name Cinnamomum verum, cinnamomum Casssia. It has been used as spices in daily life without any side effects. Its antioxidants, anti-inflammatory, antidiabetic, anticancer activities are reported. It also have activities against neurological disorders like Parkinson's and Alzeimer,s diseases. It is used in form of bark, essential oils, phenolic compounds, flavonoids and isolated compounds. The antioxidants, and antimicrobial activities may occur through the direct action on oxidants or microbes whereas the anti-inflammatory, anticancer and ant diabetic activities occur indirectly via receptor mediated mechanisms.[13,17.]

Kalimirch ,Black Pepper - Family Piperaceae, Botinical name is Piper nigrum. It increases the absorption of selenium, vitamin B 12, beta-carotene and curcumin. It is described in Buddhist Sammannaphala Sutta. Budhists used to carry this folk medicine. It contains phyto chemicals including amides, piperidine, pyrrolines.[13]

Munakka (Raisin) – Munakka or Raisin is basically a variety of dehydrated or dried grapes. In Indian system of medicine it has high amount of natural sugar sucrose and

glucose which are considered very helpful in gaining weight. It is rich sources of boron a micronutrient and calcium which are helpful strengthening of bones and teeth. It has Catechin(antioxidant), Kaempferol (flavonoids) which are helpful in decreasing growth of colon cancer.[13]

Lemon- It belongs to family Rutaceae. Botanical name is Citrus limon. Lemon is rich source of Vitamin C. It contains numerous phytochemicals including terpenes, polyphenols and tannins. Vitamin C is ascorbic acid which is an essential nutrient involved in tissue repair and enzymatic production of neurotransmitter. It is use for prevention of treatment of scurvy.[13]

Ginseng root. It is described in traditional Chinese medicine have anti-inflammatory properties and helpful in boosting immunity and brain function. Panax ginseng, Panax notoginseng are Korean and Chinese ginseng.[9]

In Ayurveda Agni and Bal restoration is very important, Agni is energy responsible for metabolism and transformation and bal is innate/acquired immunity and strength. The preventive aspect of o management aims to maintain health of a healthy individual and improve disease resistance capacity which is key factor in prevention of Covid-19 infection

These can be achieved by proper use of Aahar (food), Vihar(life style) and administration of various oushadhis (medicines), Resayana (immunomodulators) panchkarma.

Aaharam– It is the most important pillars of life and it is described in Ayrveda as Mahabheshajam (above all medicine). It Improves vitality, strength and ojas that is immunity so wholesome food is foremost factor for growth and unwholesome food is the sources of all diseases. The balanced diet in Ayurveda it should have all six components Madhur, Amla, Lavan ,Katu , Tikt and Kasaya . It is comprised of consuming warm unctuous balanced diet and after digestion of previous meal.

Viharam life style is important pillar to maintain good health as well as to cure diseases it gives the understanding about social relation, behaviours. It includes dincharya, ritucharya and sadvitra (code of conduct) etc.[6,9]

Recommendations of AYUSH Department of India

A. General Measures.

1. Drink warm water through the day
2. Daily practice of Yogasana, Pranayama and meditataion for atleast 30minutes.
3. Spices like Haldi(Turmeric), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) are recomonded in cooking.

B. Ayurvedic Immunity Promoting Measures.

1. Take Chyanvanprash 10 mg in morning, diabetics should take sugar free Chyanvanprash.

2. Drink herbal tea,that is kadha made up of Tulsi (basil), Dalchini (Cinnamon), kalimirch (Black pepper), Shonth (Dry ginger), and Manakka (raisin) once or twice per day add jaggary/lemon juice .

3. Golden milk Half tea spoon Turmric in 100 ml hot milk once or twice per day.

C. Simple Ayurvedic procedures.

1. **Nasya**- nasal application of Sesame oil, coconut oil or ghee in both nostrils in the morning and evening.

2. **Oil pulling therapy-** Take one spoon of sesame or cococnut oil in the mouth for 2,3 minutes gargle it and then spit it off. Drinking is not advisable it should be followed by warm saline gargle.

D. During dry cough sore throat

1. Steam inhalation with Ajwain (Caraway seed) or fresh Pudeena leaves once in a day.

2. Lavang- clove powder can be mixed with natural sugar/honey can be taken 2-3 times per day in case of dry cough or throat irritation. But if symptoms persists it best to consult Physician.[10]

There are few potential approaches to use dietary habit in prevention against Covid -19 that is use of herbs, food as diet supplements to prevent infection and to strengthen immunity. Use as air disinfectant and as surface sanitizing agent to provide a disinfected environment. Coating of mask with antiviral agent can be beneficial but toxicity to the human should also be considered. Traditionally steam inhalation is used for upper respiratory tract infection.

Aroma therapy can be beneficial. The antibacterial and antiviral activities of essential oils can be used as air sanitizer for prevention of disease.

Ayush-64

"The Central Council For Research In Ayurvedic Sciences developed this formulation some 10-15 years back for frequent fevers and especially malaria. It is a combination of seven Ayurvedic herbs including saptaparna, katuki, kiratatikta and kuberaksha among others. "It is an antipyretic which opens up the micro channels of the body so that all the nutrients are well-absorbed. According to the Ayurveda school of thought, any disease, including COVID-19, which is feverish in nature, is caused by a low-performing digestive system. "AYUSH-64 is a bitter-tasting formulation which enhances digestion, enabling your body to absorb nutrients well. That is how it will help in fighting COVID-19. Moreover, it also improves immune system, which is crucial or fighting with any disease.[11]

Conclusions:

The prevention of this pandemic condition can be achieved by adapting proper food habits, healthy life style and boosting immunity. Immunity is vital factor for good outcome of this pandemic. There is no definitive treatment modality or medication is available for treatment of Covid -19 infections it will be good to take preventive measures. The herbal products are widely used and safe but all drugs carry risk, it can produce allergic reactions. The use of all herbal agents should be with all precaution and in supervision of specialists .The creation of awareness is very important among all people regarding prevention of Covid- 19infection.

Above all mental health and safety is on the top priority. Do not be panic. Keep faith in God, do your duties let him think about you.

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Review Article

Dealing with Covid-19 in Dentistry

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ABSTRACT

The entire global community has been gripped by coronavirus 2 pandemic which was first reported in Wuhan city of China in December 2019. Although, all possible efforts are being made by the countries to contain the virus, but the cases of Covid-19 are still on rise. This virus primarily spreads through respiratory droplets and contact with the infected person. As the dental surgeons treat emergency and urgent dental procedures on patients which might have the virus, they should take extreme care to prevent nosocomial spread of infection. This article highlights the challenges in dentistry and treatment protocol as well as precautions to be taken by the dental surgeons in present times.

Introduction:

International Committee on Taxonomy of Viruses (ICTV) named the new coronavirus as

severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on 11 February 2020.[1]

The reason for choosing this name was the genetic relationship of new coronavirus with the virus responsible for the SARS outbreak in the year 2003. Despite this relation, these two viruses are different from each other. World Health Organization (WHO) on 11 February 2020 announced the name of the new disease as COVID-19.[2] The first evidence of the novel β-coronavirus (2019-nCoV), characterized by severe pneumonia, was reported in Wuhan city of China.[3] WHO declared this viral pneumonia as public health emergency on 30th January 2020.[4,5]

Global/Indian Scenario:

According to the WHO Coronavirus Disease (COVID-19) Dashboard, total confirm cases are 9,472,473 with 484,236 deaths reported globally as of 26/06/2020.[6] In India, the total confirmed cases are 490,401 with 15,301 deaths.[6]

Common clinical symptoms:

The common clinical symptoms of this virus infection include fever, myalgia, cough, or fatigue.[7] The less common symptoms include headache, sputum production, hemoptysis, and diarrhoea. Radiologically, the most common Computerized tomography (CT) finding are ground-glass opacity and bilateral patchy shadowing.[8]

Possible Transmission Routs:

Dental professionals should be aware of possible routs of transmission of COVID-19 during the treatment of such patients. The possible routes of spread of the virus include:

1. Direct Transmission (Cough, Sneeze, and Droplet inhalation)[7]
2. Direct contact with eye, mucous membrane.[9]
3. The virus also detected in the stool of an infected person after 7 days of illness.[10]

However, further investigations are awaited to stablish the feco-oral transitions of the virus.

Challenges in Dental Practice:

There is high affinity of virus to human angiotensin converting enzyme 2 (ACE-2) positive cells which are abundant in salivary glands.[11] This makes the situation critical for the dentist and supporting staff. They are required to prevent themselves from aerosol contaminated with saliva and other potentially infective oral fluids during the treatment of positive or suspected patients.[12,13] Research on different human Corona viruses concluded that inanimate surface remains infective for a long time up to 9 days. This duration depends upon type of material and surrounding temperature etc.[14]

Therefore, in the present scenario, three major concerns of a dental surgeon while treating a patient include direct contact with infected individual, contamination by droplet and aerosol, and touching a contaminated surface.

In view of these facts, it is extremely critical time for dental professionals to decide the emergency patients and what treatment should be offered to them.

Treatment protocol in Covid-19 situations:

Ministry of Health and Family Welfare has given clear guidelines for dental professionals in Covid-19 pandemic situation.[15] Some of the important points of these guidelines are summarized below-

Screening of the patients:

- Only emergency and urgent procedures to be undertaken in dental offices.

- The assessment of the patient can be done by tele screening. The current and past medical history to be recorded by telephonic interview to rule out the possibility of infection with coronavirus. The screening questions should particularly focus on the symptoms of Severe Acute Respiratory Illness (SARI) such as fever, cough and or shortness of breath. Symptoms of Influenza like illness such as fever, cough, running nose and sore throat should also be analysed.
- In case, there is any positive response, the treatment should be postponed for 3 weeks if there is no dental emergency.

Tele consulting:

- If the requirement of emergency management is not identified based on the telephonic screening, the patient should be advised medications and other local measures to manage the dental problems.
- If there is need of the emergency/urgent treatment, the patient can be seen in the dental offices after calculation of the risk and benefits associated with each treatment.

Patient handling in dental office:

- It is advised to entertain those patients in the dental office whose history is already recorded by telephonic screening and who have prior appointment.
- Body temperature of the patient should be recorded at clinic entrance and a written informed consent should be obtained.
- Patient should be discouraged to wear/bring any accessories and using the dental office washrooms.
- 10 ml of 0.5% PVP-I solution should be used as a mouth rinse for 60 seconds.
- Waiting chairs should be kept distantly, preferably at one meter.

Precautions to be taken in dental office:

The dental surgeons must follow standard as well as airborne and contact precautions along with hand hygiene practices and appropriate use of personal protective equipment (PPE) to prevent the spread of infection. American Association of Endodontists has given following recommendations for the management of dental patients [7]

- Dental surgeons should not treat COVID-19 suspected/confirmed patients in a routine dental setting. Negative pressure treatment room or Airborne infection isolation rooms (AIIRs) should be used to treat these patients.
- In case of need, health care centres with AIIRs and anticipatory knowledge would help dentist to provide the urgent dental care.
- Clinic premises, surfaces, instruments, and equipment etc should be cleaned/sanitized/ sterilized as per the standard protocols/guidelines.
- Minimum invasive technique along with minimum aerosol generation techniques should be used.
- Rubber dam should be used, whenever possible, to reduce the contaminated aerosol.
- Wherever possible, extraoral radiographs should be utilised. Intraoral radiographs should be restricted because of possibility of excessive salivation and gag reflex.

- Cross-infection risk can be reduced by using disposable, single-use devices, and instruments.

As the dental surgeons are considered at a great risk of getting infection of coronavirus due to the nature of the procedures performed, extreme care and precautions should be taken by them to prevent themselves as well as supporting staff.

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Review Article

COVID-19 (SARS COV-2): Current and Future Implications In Dentistry

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ABSTRACT

The outbreak and rapid community spread of SARS-CoV-2 (COVID-19) has created an international emergency in the health care system and worldwide economic crisis. Novel coronaviruses are a group of virus belong to coronaviridae family which will cause zoonotic infections (transmitted from animals to humans) similar to as SARS and MERS. COVID-19 initially originated in Wuhan seafood wet market in mid-December and then transformed into major public health concern across the 214 countries and territories around the entire world. On 30th January 2020, WHO declared this outbreak as "Public Health Emergency of International Concern" (PHEIC). Despite of every effort taken across the entire world; it is still spreading quickly due to community pattern of spreading infection. Primary route of transmission occurs through droplets, aerosols and contact routes. The risk of cross infection is more between dental health care personnel (DHCP) and patients. So, providing an emergency and urgent dental care to patients is necessary in this pandemic situation with utmost care by an effective infection control guidelines and protocols. Due to characteristics of dental settings, the risk of cross infection can be very high. This article aims to discuss the risk involved in dental practice and recommendations to provide optimum dental care and simultaneously to prevent nosocomial infection.

KEYWORDS: Covid 19, Dental Management, Infection Control Protocol.

Introduction:

Coronavirus is an enveloped single stranded RNA beta type of coronavirus with a diameter of 60–140nm, elliptical or spherical in shape with a crown-like appearance posing higher risk to all countries and constantly spreading mortality rate as high as 3.4%. The zoonotic nature and genomic sequence of this novel coronavirus is similar to coronavirus found in

bats and pangolins which has close resemblance to Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) occurred in 2002 and Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in 2012 [1]. Structurally, the SARS coronavirus (SARS-CoV) consists of well-defined 14 amino acid binding residues which will interact directly with human Angiotensin-Converting Enzyme 2 present in lungs. Out of these amino acids, 8 have been conserved in SARS-CoV-2. The route of entry into the human cell for SARS-CoV-2 is Angiotensin Converting Enzyme (ACE2 receptor) mainly affecting the lower respiratory tract.

The average incubation period for Covid 19 ranges from 2 to 14 days having a mean incubation time of 5.5 days. The main routes for transmission of Covid 19 virus are direct contact from person-to-person, through sneezing, coughing, inhaling droplets and indirect close contact with less than 6 feet distance, aerosols, inhaled droplets and through fecal-oral routes [2,3]. The entry of infection sites are nose, mouth, and eyes. Moreover, Covid 19 coronavirus can bind to human angiotensin converting enzyme 2 (ACE-2) cells, apart from lung epithelial cells, it is also highly concentrated in salivary glands. Due to presence of SARS-CoV-2 in saliva poses a high risk for dentist to perform dental procedures. Dentists are one among the very high-risk categories for transmission of the virus, because most of the dental treatment having use of aerosol-based procedures. Contamination can happen directly between operators and patients due to droplets during pre-clinical assessment or conversation with the asymptomatic patients present in the outpatient departments (OPD) [3]. It is important to perform only urgent and emergency dental procedures with proper care. Due to high risk of transmission and the nature of the virus, the treatment protocols and modifications in patient management is very important to prevent cross infection among dental health care personnel and patients. Due to nature of SARS-Cov-2 and its routes of transmission, dentists, dental auxiliary staff, assistants and patients are at higher risk of infection during dental treatments.

Symptoms of COVID-19:

The most common symptoms are

- Fever
- Dry cough
- Shortness of breath

The primary nonspecific symptoms include

- Myalgia
- Nausea
- Diarrhea
- Reduced sense of smell (hyposmia)
- Abnormal taste sensation (dysgeusia)
- Abnormal chest X-ray and computed tomographic (ground-glass opacities are typically found in the chest)

Usually 80% of infected patients have only mild symptoms resembling flulike symptoms and seasonal allergies, but these patients can act as asymptomatic “carriers” and also serve as reservoir for virus [4]. Severe forms of this disease have a predilection for men with a mean age of 56 years with preexisting chronic illnesses such as cardiovascular disease or immunosuppression. The majority of cases have spontaneously resolved. However, some people especially elderly and patients with chronic systemic disorders developed various fatal complications, including organ failure, septic shock, pulmonary edema, severe pneumonia, and acute respiratory distress syndrome.

Diagnosis:

The recommended test for SARS CoV 2 is Conventional or Real Time RT-PCR. Sample should be taken from throat and nasal swab, bronchoalveolar lavage, sputum and tracheal aspirate which is collected in Viral Transport Medium and transported in cold chain. Antibody based tests for detection of antibody (IgM and IgG) against SARS COV 2 can be used as a diagnostic test, which is rapid and cost effective.

Risks in Dentistry

Dentists are among the highest risk categories for transmission and contamination of the coronavirus, with many routine dental procedures having the potential to transmit the virus through aerosols.

In response to this challenging pandemic, the Centre for Disease Control and Prevention (CDC), American Dental association (ADA), the National Health Services (NHS), as well as other health regulatory bodies have provided advice to dentists to regulate dental services and provide them guidance in order to protect themselves, their co-workers, and their patients from this infection [6].

Asymptomatic (carrier) patients as well as patients with an acute respiratory illness may come for dental treatment at outpatient dental settings. It is important to provide treatment to patients with urgent need of emergency dental procedures, the primary goal should be to prevent transmission of infection to patients and dental healthcare personnel [7]. The growing fear of cross-infection, and the possible role of dental practice in spreading the infection, authorities have obliged dentists to step aside and to confine themselves in home quarantine like other non-healthcare sectors of the population.

Dental drills cause the formation of aerosol and splatter commonly contaminated with bacteria, viruses, fungi and blood.[1] Oral surgery drills also cause aerosol in addition to splatter. Aerosols are liquid and solid particles (<50 μm diameter) suspended in air for protracted periods. Splatter is a mixture of air, water and/or solid substances (50 μm to several millimetres diameter), may cause health risk for the dental team.

Dentists are asked to provide emergency dental procedures only, during which they must follow the recommended cross-infection control protocols. Therefore, the main bulk of published research directed to dentists, has mainly focused on giving a background on the pandemic and recommendations of cross-infection control measures. Many other aspects of dental practice are also important in addition to infection control, including prevention and minimal treatment during this pandemic.

Prevention: Provision of Dental Healthcare during the COVID-19 Pandemic

The ADA has maintained a consistent stand since the pandemic was started. They called dentists to postpone elective dental procedures for all dental patients, and to provide dental treatment only for urgent or emergency cases [6]. The main aim was to minimize potential for healthcare transmission of COVID-19, and to avoid shortage of PPE for healthcare personnel caring for those with COVID-19, or dental healthcare personnel providing urgent dental care in emergency cases. They further clarified the meaning of dental emergencies as “potentially life-threatening conditions that require immediate treatment to stop ongoing tissue bleeding, alleviate severe pain, or infection”; therefore, the emergency conditions indicated for treatment include cellulitis, uncontrolled bleeding, or trauma [7]. Within this context, provision of urgent dental treatment is to be done in regular dental clinics, and not to direct patients to emergency rooms even afterhours unless a life-threatening emergency is encountered. Types of urgent dental care was also clarified in detail to include severe dental pain; certain infections such as pericoronitis, postoperative osteitis, dry socket, or abscess/cellulitis; trauma such as symptomatic fractured tooth or avulsion/luxation; as well as certain urgent restorative procedures [7,8].

Patient Triage.

According to the recent publications, triage was performed when patients entered into the clinics. No telephonic pre-triage was recommended. Performing triage to investigate current health status and/or the presence of risk factors for COVID-19 development is strongly suggested when receiving patients [9]. Patients should be asked for any contact with infected people

occurred or whether they have travelled in highly epidemic areas.[9]

If a patient had a positive history of contact and/or symptoms, no treatment should be performed, and the patient should be reported to the sanitary authorities, to quickly impose quarantine and/or hospitalization depending on the severity of the situation [10]. Meng et al. recommended postponing dental treatments up to 14 days after the exposure [9,10]

In case of absence of contacts and/or symptoms, dental procedures can be performed, provided that full precautions should be implemented. Body temperature should be registered, possibly with a non-contact forehead thermometer, and presence of suspected symptoms (coughing, sneezing, respiratory difficulty) should be excluded [9]. It is also important to apply the same safety measures to people accompanying the patient.

Prescription of Mouth Rinses prior to Dental Treatment.

The studies suggested use of antimicrobial mouth rinses containing oxidative agents to control SARS-CoV-2, prior to dental procedures [8,9]. Mouth rinses containing 1% hydrogen peroxide, or 0.2% povidone can be used to reduce microbial load in saliva and its potential effect on SARS-CoV-2 [10] Mouth rinses are strongly recommended in cases where the rubber dam is not possible for dental procedures.

Hand Hygiene.

Hand hygiene is a critical measure for reducing SARS-CoV-2 transmission [10] It is crucial to perform thorough hand washing when meeting patients and nondisinfected surfaces or equipment's, and it is recommended to avoid touching eyes, mouth, and nose without having hands carefully washed. A protocol involving 5 hand washings (2 before and 3 after treatment) was proposed to reinforce professionals' compliance [10].

Personal Protective Equipment for Dental Practitioners.

SARS-CoV-2 transmission predominantly occurs through airborne droplets. In this sense, the use of standard PPE consists of gloves, mask, and gown. Additional equipment should be utilized including face protection, goggles, mask, face shield, gloves, gown or coverall, head cover, and rubber boots protective equipment, is strongly recommended to protect eye, oral, and nasal mucosa [9,10]

As respiratory droplets are main source of SARS-CoV-2 transmission, particulate respirators (e.g., N-95 masks authenticated by the National Institute for Occupational Safety and Health or FFP2-standard masks set by the European Union) are recommended for routine dental practice. [10]

Limitation of Aerosol-Producing Procedures.

Peng et al. highlighted the risk related to the performance of dental procedures, when handpieces and ultrasonic devices are employed [10]. As reported by Meng et al., it is advisable to minimize the operations involving the generation of aerosol and droplets while employing use of personal protective equipment [8,9]. It is advised to use hand instruments for scaling, which is equally effective as ultrasonic scaling. In selective cases chemical caries removal or atraumatic restorative techniques can be considered. If rotary instrumentation must be performed, rubber dam isolation should be applied [9,10, 11].

Cleaning of Potentially Contaminated Surfaces.

Careful disinfection of surfaces, with attention to door handles, chairs, and desks are strongly suggested. Moreover, a dry environment in the dental office was recommended to control diffusion [12, 13]

Disinfection

Recommendations have been provided regarding the management of operating rooms to attenuate the environmental contamination and optimize infection control through quaternary ammonium compounds or isopropyl alcohol. Alcohol or sodium hypochlorite-based disinfectants are active against coronaviruses and they should be used to disinfect every component of the dental chair and the surfaces that are in contact with aerosol spray as well. 0.1% sodium hypochlorite and 70% isopropyl alcohol have been suggested for surface disinfection. Removing equipment's and instruments from the room is not necessary and covering all possible surfaces with disposable covers may help in improving the contact infection control [14, 15].

Conclusion:

Sars-CoV-2 is a very infective virus that causes COVID-19, a disease with a very broad range of manifestations, from lack of symptoms to ARDS and eventually death. Because of the oral route of transmission of this pathogen dentists are among the health professionals who are exposed to high risk of infection. When the disease is at community level, it is paramount that dental care professionals protect themselves, their staff and patients, avoiding any risk of spreading the virus. It is important to remember that completely asymptomatic patients are carriers of the infection. In view of this, it is mandatory to postpone any elective treatments and dentists should treat only emergencies or provide care to those who required essentially either in dental clinic or in hospital care.

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Review Article

Role of Teledentistry during Covid-19 pandemic: A review

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ABSTRACT

Background: Teledentistry can provide an innovative solution to continue dental practice during the current pandemic. It involves rationale use of information and communication technologies that provides care remotely.

Method: Articles on teledentistry, pertinent to this review, were searched and consulted from Cochrane database PubMed & Google Scholar.

Results: Teledentistryenables dentists to cater various kinds of dental care needs, while maintaining physical distancing with patients. Various domains of teledentistry include teleconsultation &telescreening, telediagnosis, teletriage and telemonitoring. Telediagnosis platforms are used worldwide to reduce the need of close clinical oral examinations. The current pandemic has shown that the dental practice using teledentistry can be considered as safest method of patient care.

Conclusion: Teledentistry is a feasible option for both dentist and patients during the Covid-19 pandemic because this can complement the existing compromised dental system by extending care to additional patient population at a reasonable cost and it can also target the problem of shortage of dental specialists up to a great extent.

Keywords: COVID-19 - Teledentistry– pandemic

Introduction:

The Covid-19 pandemic has created unique challenges in existing healthcare systems across the globe. The route of transmission of this Coronavirus has a significant involvement on dental practice. Almost all the dental procedures produce aerosols and droplets which can be contaminated by microorganisms thereby causing easier spread of infections. Dental treatment invariably involves close inspection, examination, diagnostic and therapeutic interventions of the naso-oro-pharyngeal region that is why dental professionals are most prone to get infected with Covid-19 disease[1].

As a result, during the current pandemic, most routine dental procedures all around the world have been suspended and only emergency dental procedures and surgeries are being performed. However, looking at the current increasing trend of COVID-19 cases, it does not appear that this pandemic will end anytime soon. In fact, even the WHO also had quoted recently that this Covid -19 virus in coming time, may become merely an endemic virus in our communities and chances are that it would never go away[2].

In these circumstances teledentistry can provide an innovative solution to continue dental practice during the current pandemic, as well as beyond[3]. The initial concept of teledentistry was developed as part of the blueprint for dental informatics, which was drafted at a 1989 conference funded by the Westinghouse Electronics Systems Group in Baltimore[4]. Later it developed as a combination of telecommunications and dentistry, involving the exchange of clinical information and images over remote distances for dental consultation and treatment planning.[5]

So, During COVID-19 pandemic, dentists should use teledentistry for distant assessment of patients, triage, and provision of dental care. Teledentistry is 'not' a new specialty. It is just an alternative method to deliver the existing dental services.[6] Fundamentally, teledentistry involves rationale use of information and communication technologies that provides care remotely and it also enables dentists to cater various kinds of dental care needs, while maintaining physical distancing with patients. It reduces hospital visits and enables patients to safely consult their dental problems or concerns from their homes.

Various domains of Teledentistry:

1. Teleconsultation &Telescreening

In Covid-19 times telephone screening should be encouraged as a first point of contact between the patient and the dentists, all the information in context to the patients' chief complaints should first be discussed over telephone.[7] Another method is video conferencing in which dental professionals and their patients may listen, visualize and communicate with one another from distant places. It is also helpful for handicapped patients. Long time video conferencing or real-time discussion is not always feasible as it depends upon good internet connections, therefore yet another method involves transfer of all case related documents including clinical information, still images of the condition to dentists through forwarded emails for treatment planning and consultation[8]. In this way teleconsultation reduces the number of visits and referrals. The use of telemedicine consultation via the XPA3 Online system is also a valuable tool in the management of dental patients used in some countries. In the current scenario of COVID-19 pandemic & it can contribute in minimizing the spread of disease[9].

2. Telediagnosis

Telediagnosis makes use of technology to exchange images and data for making diagnosis of oral lesions[10]. Various kinds of telediagnosis programs and platforms are

used worldwide to reduce the need of close clinical oral examinations like, Estomato Net, telecytology, Mobile Mouth Screening Anywhere (MeMoSA®), tablet-based mobile microscope (CellScope device) etc. These platforms help a clinician in early detection of oral potentially malignant lesions and oral cancers even without the physical presence of patients. These days, smartphones are also being used for detection of dental caries. During the current COVID-19 pandemic, few studies recently illustrated the use of WhatsApp and teledentistry in making a differential diagnosis of oral lesions[11].

3. Teletriage

Teletriage involves screening about dental history and comprehending dental treatment according to urgency of the desired treatment and risk and benefits linked with treatment procedures via smartphone by specialists. While triaging it should also be mentioned to patient that prior appointment is mandatory for getting treatment at clinic[7]. It has also been used for assessment of school children located remotely and prioritize them for dental care and treatments.[12,13] Several times Teletriaging is also done by web based systems and recently apps like m Oral health (mobile phone based oral health) screening systems are also being used.[7]

4. Telemonitoring

Monitoring is an important aspect during and after dental care, which involves regular visits of patients to their dentists. As during covid-19 times, face to face interaction is being avoided, telemonitoring becomes a vital tool for dentistry thereby reducing the chances of infection. Telemonitoring reduces the time taken by dentists for monitoring their patients and at the same time it also reduces cost of physically visiting and waiting time of the patients.[14]

Barriers and suggested solutions:

A. **Barriers related to acceptance of teledentistry by dentists**

Every problem comes with a solution, and so is the dentistry in covid-19 times. Yet Teledentistry is a feasible option for both dentist and patients, it also has various roadblocks in its way. Learning a new skill that too after a certain age can be a hesitating process and so can be the teledentistry, because of fear of inaccurately diagnosing a condition using this technology. Many dental practitioners may find it difficult to opt this new method, whereas others may find it easier if they are tech savvy but for that they require trained technical support staff. Many practitioners face problems of poor internet access, hardware problems etc.

A major roadblock is lack of financial reimbursement of the services rendered via teledentistry. To overcome this, a pp/web based programs are being designed targeting these problems.[15]

So, to increase the acceptance of teledentistry, dentist must be well trained about this technique, therefore it should be incorporated in undergraduate and postgraduate curriculum also, so that, future dentists become well-versed with teledentistry use. The current pandemic has shown that the dental practice using teledentistry can be considered as safest method of patient care.[16]

B. **Barriers related to acceptance of teledentistry by patients**

Any technique cannot be considered successful unless it is widely accepted and easily used by its end users. Teledentistry being a new method of dental consultation will take time to become a familiar method for patients. To make this technique acceptable to the patients, they should be thoroughly explained about the potential risk of visiting dentist unnecessarily and benefits of teledentistry. It can be assumed that as the use of telemedicine among patients popularizes, teledentistry technique also will gain momentum. Generally in India there is a conventional mindset among patients that, until they do not see their Practitioner, the trust does not build up. This mindset can only be changed via education and promotion regarding teledentistry in patients by various means, so that we can be ready for future pandemics if occurs unfortunately.[17,18]

Conclusion:

Dentistry is an integral part of our healthcare system, which has been severely compromised during the current pandemic of COVID-19, but teledentistry has not yet become the integral part of mainstream oral health care system. The main reasons are lack of technological support, education among dentists and patients regarding use of teledentistry. A variety of technology driven web/application based programs and platforms are available for teledentistry and are being used in developed countries. India also needs to be 'Vocal for Local' in development of such technological support this direction, and then only in India teledentistry can be incorporated into routine dental practice. Teledentistry, apart from being beneficial for individual dental practice, can play a major role in providing services to distant population in outreach locations in context of public health programs during covid-19 pandemic. If not fully replace, at least teledentistry can complement the existing compromised dental system during the current pandemic by extending care to additional patient population at a reasonable cost and it can also target the problem of shortage of dental specialists up to a great extent. Teledentistry should be incorporated in undergraduate and postgraduate curriculum also, so that, future dentists become well-versed with teledentistry use.

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Review Article

Changing Trends In Dental Education During Covid -19 Pandemic –A Review

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ABSTRACT

The coronavirus (COVID-19) has spread to many countries across the world since its origin. Once the need for "social distancing" was announced as a primary preventive tool, there has been deficiency of all face-to-face contact in teaching and training programs which lead to the impact of COVID-19 on the field of dental education. Dental education is such that it needs live patients for demonstration of clinical skills by teachers as well as for practice by dental students along with lectures for theoretical concepts. At this time, distant teaching methods using the internet, enables communication between academics and students through virtual libraries, lectures through web portals, video conferencing webinars and telecommuting. During this pandemic time various dental schools across the globe are focussing on virtual reality simulating patients using various technologies like 'haptic' etc. VR simulation technology is a valuable resource to traditional dental training methods to be considered during the COVID-19 pandemic to enable distance learning.

Keywords: COVID-19, dental education, dentistry, VR simulation

Introduction:

COVID-19 (CO-Corona, VI- Virus, D-Disease)[1] is a novel disease originated in Wuhan city of China, in December, 2019. It has spread to many countries across the world since its origin. The COVID-19 pandemic has forced the world into a health and economic crisis. All the affected countries in the world, have established different forms of lockdown, interrupting numerous ordinary routines and affecting work, free movement, trade, and, in particular, education[2].

Amid the time of COVID-19 pandemic, face-to-face classroom educational activities with undergraduate and postgraduate dentistry students have been nearly interrupted worldwide. Educators are scrambling to adapt to social distancing (self-quarantine) and some virtual alternatives are being used to continue teaching activities.[3]

Challenges and Influence of COVID-19 pandemic on dental education:

Once the need for "social distancing" was announced as a primary preventive tool, there has been deficiency of all face-to-face contact in teaching and training programs which lead to the impact of COVID-19 on the field of dental education.[4, 5]

Worldwide, all the institutes including dental institutes have been facing the devastating COVID-19 pandemic outbreak. Lockdowns and strict need for social distancing in pre-clinics and clinics, caused clinical learning inaccessible to dental students. The parallel problems further includes economic instability; suspension of academic conferences and convocation ceremonies; and unwanted shifts in pre-planned projects and activities until unpredictable time.[6]

Dental education is such that it needs live patients for demonstration of clinical skills by teachers as well as for practice by dental students along with lectures for theoretical concepts. Because of this pandemic, all the dental colleges in India have suspended classroom lectures and halted the patient work in clinics except for emergencies, although now they are planning to start preclinical simulation activities in their laboratory with social distancing.

At this time, distant teaching methods using the internet, enables communication between academics and students through virtual libraries, lectures through web portals, video conferencing webinars and telecommuting. These all methods allow a better suited way of education and enable us to teach dental curriculum and ensuring the learning outcomes associated with all skills required.[6] Tools like smart phone applications and demonstrative videos of all kinds of preclinical and clinical learning methods are an effective solution to keep the theoretical development up-to-date. All academic implementation of these tools would ensure the quality of education.[7]

Of late almost all the dental colleges started arranging lectures for their students through various web portals which has a common issue of network connectivity but the biggest challenge is to keep the students on other side attentive as there is no face to face interaction which occurs in physical classroom teaching. Moreover ensuring even physical presence of students on other side while using slide share mode is also a hidden issue in online lectures.

Preclinical and clinical training is also of utmost importance for dental students, as it is during this stage that these students learn various manual and cognitive skills that prepare the students to enter the dental profession.[8] It is the necessity of dental course that dental students cannot complete their course until they complete their work on set number of patients (patient quota) under the surveillance of their teachers, for which presence of sufficient number of patients in OPD is required.

According to historians, pandemics typically have two types of endings: the medical, which occurs when the incidence and death rates plummet, and the social, when the epidemic of fear about the disease wanes.[9] Looking at the current scenario of the COVID-19 cases, it is likely that this pandemic will not end anytime soon.

Therefore availability of sufficient number of patients in this COVID-19 time is a new challenge to these learners. However, a sufficient amount of face-to-face practical hours with simulation models or clinical training on real patients is no longer feasible in COVID-19 pandemic time. Therefore real time problem solving exercises, multimedia workshops, webinars, and computer-based exams can be used as a teaching tool for making them experience the real clinical conditions. During this pandemic time various dental schools across the globe are focussing on virtual reality simulating patients using various technologies like 'haptic' etc. This technology can enable students experience

the real situation even in physical absence of patient.

The Virtual reality simulator system consists of a high-end computer workstation with appropriate software, a haptic device, and a stereoscopic computer monitor with stereo glasses. The computer renders three-dimensional (3D) graphics that can be viewed with the stereo glasses, and operates the haptic device that provides a realistic tactile sensation. Onscreen VR instruments can be manipulated on this monitor by operating the haptic device stylus for sensing life-like contact and interaction with teeth and associated anatomic structures.[9]

Psychological impact of COVID-19 pandemic on dental students

As COVID-19 is a novel pandemic, the psychological influence associated with this is also novel. Researchers all over the world are trying to assess psychological aspect of this pandemic, the magnitude of which would decide the psychological impact on students mind. This will also decide the kind of counselling needed for mental wellbeing of the students. It should be noted that during the COVID-19 crisis, dental students sometimes may undergo depression and be negatively influenced by the threat of being infected. Inevitably, dental students are likely to be anxious due to the high incidences of COVID-19 infection among medical personnel and their death.[9] Therefore, during this time providing counselling services and psychological help for the dental students should also be an integral part of teaching modules.[4]

Conclusion:

In the time of COVID-19 pandemic face-to-face- teaching activities in classroom setting does not seem to be feasible at present time and also in coming days according to the pace at which disease is affecting the community. The only prevention is the social distancing which is restricting dental colleges to start the educational activities as before. Therefore the judicial use of digital platform for theoretical teaching is the tool which is being used. But for practical and clinical knowledge, use of virtual reality simulating patients using advanced technology should be encouraged.

It can therefore be suggested that VR simulation technology is a valuable resource to traditional dental training methods to be considered during the COVID-19 pandemic to enable distance learning.[4] These technologies are vastly being used in developed countries so their application in developing county like India should also to be encouraged.

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Review Article

Corona Virus Disease (COVID-19) An Overview

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INTRODUCTION

The Corona Virus Disease (COVID 19) outbreak first reported in Wuhan, China, was identified on November, 17, 2020 and was declared as Public Health Emergency of International Concern by World Health Organisation on January 30, 2020. The outbreak evolved rapidly into the public health crisis and the spread was found to be exponential to the other parts of the world. Corona virus (SARS-CoV-2) also known as Novel Corona Virus causing the respiratory infection was first reported in India on January 30, 2020.

Transmission and Survival of Virus:

Novel Corona Virus has similarity to the corona virus found in bats confirming the zoonotic nature of this new cross-species viral-mediated disease thus possibly leading to human transmission. SARS CoV2 is the single stranded RNA virus known as Coronaviridae. SARS CoV2 binding to human angiotensin converting enzyme 2 receptors, are found concentrated in salivary glands. Therefore, once gaining entry into the body, the virus captures nasopharyngeal and salivary secretions of the affected patients as the reservoir for its survival. The human to human transmission was predominantly thought to be respiratory droplets /Contact in nature. COVID 19 infection may lead to intestinal infection and be present in faeces as well.[1, 2]

Clinical Presentation:

The SARS CoV-2 have an incubation period of 2-14 days after exposure, mostly within 5 days after exposure clinically presents fever(low grade) in 83-98%, fatigue(70%), dry cough(59%). Most of the cases are of mild infection (80%) with a usual recovery period of 2 weeks; only 15% and 5% of cases are of severe and critical nature respectively. The disease begins with fever and dry cough and progresses to dyspnea and ARDS. Most common complications are bilateral pneumonia progressing to ARDS, sepsis and septic shock.[3] The probability of lethality due to Novel Corona Virus is more in patients with low immunity status or patients having co-morbidities such as diabetes mellitus, chronic kidney disease, transplantation, cancer chemotherapy, malnutrition, cardiac disease. Extremes of age are highly susceptible for COVID 19 infection and found to have an overall mortality rate as high as 3.4%.The Throat and Nasal Swab sample for COVID 19 infection are collected in Viral Transport Media and sent to laboratory at 2-8°C and the preferred diagnostic testing modality used for detecting SARS CoV-2 is Real Time Polymerase Chain Reaction (RT- PCR).

Prevention and Treatment:

Neither vaccine, nor medication for treatment of COVID-19 infection have been found till now. Symptomatic and supportive treatment is the only option available for the management of patients with COVID-19 infection currently. Oxygen therapy, cautious intravenous fluid infusion with life support, is given in patients with SARI (Severe Acute Respiratory Illness) when Partial pressure of Oxygen ≤ 100 mmHg with PEEP (Positive End Expiratory Pressure) ≥5 cm H_2O, or no ventilated. In addition, empiric antimicrobials can be given to treat all likely pathogens causing SARI. A combination of lopinavir and ritonavir, combination of remdesivir and chloroquine, neuraminidase inhibitors, DNA synthesis inhibitors may be effective to treat COVID-19 disease. The broad range of spectrum antibiotics may be used to control the additional bacterial infection after a virus attack. The US FDA has issued emergency authorization for the use of chloroquine and hydroxychloroquine for the treatment of COVID. The adjunctive therapies including azithromycin, ascorbic acid, corticosteroids, epoprostenol, sirolimus, tocilizumab, sarilumab, and anakinra can be used. Dexamethasone has demonstrated utility on ARDS by decreasing ventilator days and mortality on severe ARDS in patients without COVID-19. Convalescent plasma can be used prophylactically and for already infected patients to attenuate clinical severity[4]. There is still a lack of evidence regarding the safety and effectiveness of these treatment modalities in treating COVID-19. In this regard, clinicians and patients should be made aware of the risk versus benefit profile of any treatment modality used. The understanding of prevention is most important in such pandemic situations. Preventive measures include frequent hand washing,

refraining from excessive outdoor activities unless an emergency, and avoiding infected individuals, crowded places and public gatherings.

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Review Article

Novel Corona Virus (Covid-19) and its Impact on Dentistry

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ABSTRACT

In December 2019, new virus detected named as 2019 Novel Coronavirus (Covid 19 Virus) at Wuhan province, China. Covid19 virus infection becomes pandemic and most of country community spread is going to become common day by day. Such type of unprecedented medical situation never occurred in the history of mankind. This divided things into precorona and corona period. Since it is a highly contagious viral disease, we have to take precautions accordingly. The Corona virus is RNA virus that is why it is highly mutative in nature. More than 30 strains of it available till date which affecting humans. It affected dental profession badly and dental treatment must be done with precautions. Present article introduces the corona virus and highlights what precautions must be followed while practicing dentistry during this era.

Introduction:

Coronaviruses (RNA Viruses) are enveloped carrying petal or club shaped or crown like peplomer spike giving appearance of solar corona (Fig 1). The spike protein on the surface helps the virus to attach to human cells. Investigations have found that the Covid 19 virus causes a wide range of respiratory disorders ranging from mild common cold to severe pneumonia and sometimes gastrointestinal problems. These are mainly due to release of excessive cytokines through body response which ultimately leads to acute respiratory distress syndrome and multi organ failure. Most people have mild symptoms. However, some types of Coronavirus could Cause Severe disease.

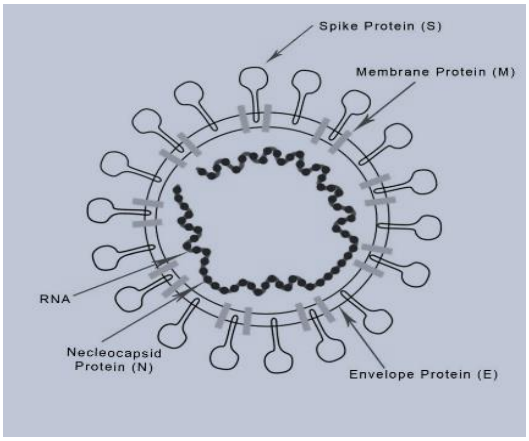

Fig 1; Schematic presentation of structure of Covid 19 Virus

Type of Corona Virus

Before discovery of Covid 19 virus six recognised coronavirus was known for human infection. Till date types of corona virus is as follows;

1. Human Corona virus 229E,
2. New Haven Corona virus,
3. Human Corona virus OC43,
4. Human Corona virus HKUI,
5. SARS –CoV (Severe Acute Respiratory Syndrome corona virus first identified in China in 2003),
6. MERS-CoV (Middle East Respiratory Syndrome virus identified in Saudi Arabia in 2012).
7. Covid 19 Virus (Detected in December 2019 at China)

The origin of the virus is typically from animals. The spread of the virus from the animals to humans is usually called 'spillover' also called Zoonotic disease. It could be due to a range of factors such as mutations in the virus or increased contact between humans and animals. Once the virus reached the human, it mutates and spreads from human to human. The disease spread from the sick to the victim's family and health care workers. From that point, the exponential growth curve of the coronavirus is seen.

Nature and spread of Covid 19 Virus;

Corona virus is RNA virus that is why it is more mutative in nature. Now, the virus spread is almost worldwide (pandemic) around 216 countries with millions cases with millions death. Most of virus will have two characters, contagious and infectious. The corona is highly contagious and less infectious. The coronaviruses use ACE-2 (angiotensin-converting enzyme) to attach to the human cell. The levels of ACE-2 will be higher in cardiac and other systemic disease patients, for this reason, they are at more risk of virus infection. The transmission of the virus is usually through coughing, sneezing, close personal contact like touching mouth, nose, eyes, or shaking hands. It spreads through droplets, produced when affected persons coughs or sneezes or it may spread through something that is contaminated from the virus. The groups at most risk of transmission are family members and health care workers.

Diagnosis of virus:

The diagnosis of corona virus could be done by two basic methods. One is detection of virus in the body or immune reaction to the virus in the blood. The detection of virus/viral genome is through the RT-PCR (reverse transcriptase polymerase chain reaction) from the nasal swab. The rapid test kit is based on the immune reaction using immunochromatographic assay from the blood (Table 1).

Table: 1 Type of test for corona virus.

Test	RT-PCR	Rapid test
Sample	Nasal/throat swab	Blood
Physiology behind the test	Detect the virus nuclear material	Color changing Immune reaction between the antibody and virus
Sensitivity	Very accurate due to particular nuclear material	Might give false positive if other viral infection is present
Advantages	Accurate and confirmatory	Results within 10 minutes
Disadvantage	• Time taking • Comparatively costly	• Inaccurate • If rapid test become positive, requires RT-PCR to confirm the infection • Requires double test.

Prevention of Covid 19 Virus include control measures as follows,

1. Isolation and quarantine the exposed patient,
2. Thorough and frequent hand washing with soap,
3. Make a distance of 1 meter to each other,
4. Use of gloves, goggles, gowns, facemask, PPE kit by health care workers.
5. Avoid personal contacts,
6. Avoid travels.

Advancement related to vaccine and drugs;

Although some country are trying to develop vaccine, but since it is RNA virus and highly mutative in nature, it is relatively difficult to develop vaccine for it, although trial of it is going on. Still we are optimistic to see the vaccine in future. A lot of drugs are used nowadays for Covid 19 Virus. None of the drugs are approved by FDA and WHO, however it has been claimed that it is useful for the virus infection. These drugs are:

i) Hydroxy chloroquine: It is an antimalarial drug. Act as entry inhibitor by changing surface protein of virus and human cells, immune-modulator, and changing the endosomal pH, inside the human cells. It should be avoided in patients having cardiac problems, neurological problems, diabetes, kidney, eye related problems.

ii) Umfenovir which is also used in influenza virus, prevent entry of corona virus.

iii) Camostat/Nafamostat used in pancreatitis also prevent entry of corona virus.

iv) Remdesivir (used for Ebola virus), favipiravir, rebapirin are polymerase inhibitor.

v) Importin

vi) Ivermectin (used as anthelminthic and scabies) act as immunomodulator.

vii) Tocilizumab is IL-6 antagonist.

viii) Plasma therapy

Dental profession and Corona Virus;

As a dentist, we are more prone to infection and cross-contamination. Some Dental procedures involved aerosol generation, hence it should be avoided. This exposes dental healthcare personnel to the risk of infection via direct exposure of conjunctiva (eyes) to droplets from patients during dental treatment. Considering that the facts related to treatment of virus and vaccination is not available for COVID-19 virus infection, it would be sensible for dentists to do more on non-aerosol generating procedures for the treatment of their patients. We have to take precaution and care of many asymptomatic COVID-19 patients visiting for dental treatment.

A general recommendation for the dentist

Waiting area and clinic must be sanitized with 0.1 to 0.5 % sodium hypochlorite solution or 70% isopropyl alcohol.

Patient Evaluation in the Waiting Room

- The waiting room in the dental practice/centre should be sufficiently ventilated.
- Their temperature should be measured using a sterile or contact-free forehead thermometer.
- A thorough travel history, medical history obtained from the patients.
- For major dental procedures sometimes, Covid 19 virus test should be done.
- If a patient is suspected for COVID-19 infection, he/she should be identified, quarantined, and referred to the concern health department.
- Proper ventilated room should be there. Air condition is minimally used.
- Fumigation of waiting and working area is required.

Hand hygiene

Dental professionals and dental assistance should prevent their hands from direct contact with his/her body parts e.g. eyes, nose, and mouth. Use of hand sanitizer or hand wash with soap is mandatory before the beginning of any dental procedures.

Personal Protection Measures

Self-protective measures is highly advised for dental procedures, i.e. Protective goggles and face shields, Face masks (N 95 mask), Protective water resistant outwear (gown), gloves, personal protection kit etc. It should be properly disposed with .01 to .25 % sodium hypochlorite solution.

Surface disinfection

Dental chair-side surfaces, i.e., dental light handle, dental chair keyboard keys, connected computers and so on- should be disinfected in the intervals between patients using ethanol 70%.

Mouth-Rinsing Before Dental Treatment

Using a mouth rinse or mouthwash solution containing hydrogen peroxide or povidone iodine is recommended (Chlorhexidine should not be used).

Use of Other Materials/Instruments/Equipment

Aerosol generating procedure should be avoided. Mostly micro motor or contra-angle hand piece should be used. During using of these instruments, simple saline is used as irrigant for heat dissipation. After every 4 to 5 minutes it should be stopped then again start work after 1 to 2 minutes with these instruments. Rubber dam, can minimize the dispersion of droplets, secretions, and aerosols.

Instrument must be cold sterilized with 0.1 % sodium hypochlorite solution (> 0.5 % will corrode the surface), gluterldehyde, quaternary ammonium chloride or It should be autoclaved properly.

Procedure:

1. Consent of patient is required,
2. Hand scaling is preferred,
3. Long duration of treatment should be avoided,
4. Aerosol generating procedure should be avoided,
5. Preferred root canal treatment is single sitting, if otherwise indicated should be done,
6. Orthodontic treatment with proper personal care can be done.
7. Crown cutting, preparation of cavity etc. should be done with micro motor or contra-angle hand piece.
8. Oral surgical procedure can be done with precautions, however

major surgical procedure should be done after testing of Covid 19 virus.

Removal of Medical/Dental Waste

Disposable protective equipment should be transferred to a temporary storage area. The medical waste-from the treatment of patients suspicious to COVID-19-should is considered as infectious residue. These wastes should be packed in two-layered packages and sealed properly and disposed properly.

Conclusion:

The Covid 19 problem has neither medicine nor vaccine, and mainly patient care depends on supportive therapy like vitamin C, A and D and other general measures to bring innate immunity to check the virus spread. It has been reported that virulence of the virus is reduced and become milder than before. The corona virus is highly contagious but less infective with mortality rate of average 3.3% comparatively less than SARS and MERS. The patient with co-morbidities, old age person and children below 10 years are to be taken care with social distancing and public and personal hygiene etiquette. The drug and vaccine are on the pre-trail basis. Beside medical effects, corona indeed has psychological impact on the life, so treat the patient with care and love. We have to treat the patient of dental and oral diseases with precaution.

References:

Based on various available resources about Corona Virus from the internet.

Review Article

Far-UVC light: A potential tool to control the airborne spread of Covid-19

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Introduction

Corona virus Disease 2019 (COVID-19) was first reported in December, 2019 and the same was declared a pandemic on March 11, 2020 by the World Health Organization. Despite the extensive measures that have been taken to curtail the spread of the disease, it has escalated worldwide to affect more than 12 Million lives.[1]

The causative agent for this disease is a beta coronavirus (SARS-COV-2) that is transmitted either through direct contact or via an airborne route. Various studies have shown that the virus is viable in areoles for at least 3 hours.[2]

Given the characteristic mushrooming of the disease via symptomatic as well as asymptomatic carries, it is of utmost importance that we look into not only curing the disease but also into technologies that can help in the inactivation or killing of the airborne virus, thus limiting the transmission.

Far UVC Light

Amidst the extensive research in this area, the researchers at Columbia University Irving Medical Centre have developed a new technology that is the power of UV light, which was and shown promise of limiting not just coronavirus but other familiar virus as well.[3]

According to WHO, the UV region covers the wavelength range of 100-400nm and is divided into:

i) UVA (315 – 400 nm)
ii) UVB (280 – 315 nm)
iii) UVC (100 – 280 nm)

Currently UVC light of 245 nm wave length is under use for sanitization of kits and devices. But exposure of these UV rays to human may cause skin cancer. According to the researchers at Columbia University Dr. Buonanno et al, Far-UVC light of wavelength 222nm efficiently and safely inactivates the airborne corona virus. It has been found potent enough to kill the seasonal coronavirus that are similar to SARS-COV-2. They have established that an exposure of UVC light of 222 nm at a low dose of 1.7 and 1.2mJ/ cm^2 for 25 minutes inactivated 99.9% aerosolized alpha coronavirus and Beta coronavirus OC43.[4]

Based on these results, a continuous exposure of Far-UVC light in public locations at recommended exposure (3mJ/cm^3/hour) for 25 minutes would cause 99.9% viral inactivation. Increasing the exposure by a factor of two would halve the disinfection time while maintaining safety. At a stretch, irradiation by this UVC light can be done up to 8 hours per day with permissible exposure limit being 23mJ/cm^2.

Not only this but they have also maintained that the far UVC light having low wavelength, high energy and low penetration power, cannot penetrate the surface layer of skin and eyes, nor has it been associated with noticeable ozone formation that could cause a respiratory hazard (as is generally seen with UVA and UVB).[5,6]

Conclusion:

Thus, Far- UVC light, could be a major breakthrough on our way to good riddance from SARS-COV-2. These findings could pave way for inventing devices or technologies that could eradicate coronavirus, including SARS-COV-2.

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Review Article

COVID-19: Transmission & Prevention in Dentistry

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ABSTRACT

Aerosols and droplets are produced during many dental procedures. Infection control procedures for aerosols is warranted in order to prevent transmission of the droplet-spread disease like COVID-19. Airborne contamination can be minimized by layering several infection control steps into the routine precautions used during high-risk aerosol-generating procedures. These procedures may create aerosolization of high viral loads that pose increased risk to health care workers. In such situations, enhanced respiratory protection with filters may be appropriate.

Introduction:

An aggregate of pneumonia cases, caused by a newly identified β-coronavirus, was reported in Wuhan, China in December 2019. This coronavirus, was initially named as the 2019-novel coronavirus (2019-nCoV) on 12 January 2020 by World Health Organization (WHO). Later the disease was named as coronavirus disease 2019 (COVID-19) on 11 February 2020 by World Health Organization (WHO) officially and declared the outbreak as a pandemic on 11th March 2020.As on 29th June,2020 the total number of COVID-19 cases globally is 10,250,322 and in India it is 5,49,197[1].

TRANSMISSION IN DENTISTRY

Transmission of the disease can occur through small droplets when a person with COVID-19 coughs, sneezes or exhales as the droplets get aerosolized during these processes. Droplets from a cough travel at

a speed of 10m/s upto a distance of 2 meters where as those of a sneeze travel at a speed of 50 m/s upto a distance of 6 meters[2]. Apart from this, aerosolization of high viral loads can also occur in high-risk aerosol generating procedures in a dental setting[3]. In dentistry, 90% of the aerosols produced are extremely small (< 5 μm) which may contaminate surfaces in a range of three feet and remain airborne for 30 minutes to two hours[4] thereby having the potential to penetrate and lodge in the smaller passages of the lungs.[5]

Most dental procedures that use mechanical instrumentation will produce airborne particles from the site where the instrument is used. Dental handpieces, ultrasonic scalers, air/water syringe, air polishers and air abrasion units produce the most visible aerosols[6] during surgical and nonsurgical procedures that may include crown preparations, caries restorations, periodontal therapies, prophylaxes and endodontic treatment[4].

Dentists who perform aerosol generating procedures to treat their patients are at an extremely dangerous risk of inoculating themselves, their dental assistants, other office staff members, and reinoculation of the patients.[2]

U.S. Centers for Disease Control and Prevention (CDC) Guidelines for Infection Control in Dental Health-Care Settings — 2003 provides recommendations for prevention of transmission based infection which include the use of high-velocity air evacuation and preprocedural antimicrobial mouthrinses, as well as by flushing waterlines at the beginning of the workday and between each patient, wearing personal protective equipment (PPE), and using air purifications systems.[6]

RESPIRATORY PERSONAL PROTECTIVE EQUIPMENT

Healthcare workers should understand the different types of respiratory personal protective equipment and their role in providing protection from aerosol.

Respiratory protective equipment recognised by the Center for Disease Control and Prevention (CDC) in the healthcare setting include surgical masks, disposable masks/respirators (including N95 masks), elastomeric respirators, powered air-purifying respirators (PAPR), and controlled air-purifying respirators (CAPR). Disposable masks/respirators come in a variety of filter options including N, R, or P types ranging from filtration level of 95 to 100.

The filters marked N are not resistant to oil, R are somewhat resistant to oil which has a service life for at about 8 hours, and P are strongly resistant to oil which has a service life for about 40 hours. The number associated with each filter denotes

its filtering capacity for particles 0.3 microns in size. A respirator designated "95" filters at least 95% of particles 0.3 microns in size. A mask designated "99" filters at least 99% of particles 0.3 microns in size. A mask designated "100" filters at least 99.97% of particles 0.3 microns in size.

Hence, N95 filters are considered the lowest level of approved respiratory protection for airborne SARS viruses by the Centers Disease Control and Prevention (CDC) whereas P100 filters are oil proof and filter 99.97% of 0.3 micron particles thus considered the highest level of protection .

Cloth Masks- are cheap, easily available, washable and reusable and should be made with 100% cotton fabric. Depending on the thickness of the fabric, two or three layers are appropriate and this mask can be used by majority of the population in developing countries. It is not recommended for use by any health care worker in a hospital setting

Surgical Masks-made up three layers. The innermost layer is made up of an absorbent material that absorbs moisture from the wearer's breath, the middle layer is made up of a melt-blown material that acts as a filter, and the outer layer is made up of material that repels liquid. The pleats are intended to increase the surface area so that the nose and the chin can also be adequately covered. Surgical masks are intended to be used only once and then safely disposed. The life of a surgical mask generally lasts for between 3 to 8 hours depending on the environmental humidity, temperature and volume of air breathed. A surgical mask is recommended for doctors, nurses and all paramedics in routine clinical practice.

N95 masks are the most common of these and are tight fitting masks sometimes called respirators. If correctly fitted, they form an airtight seal on the face around the mouth and nose. N95 filtering capacity are non-resistant to oil and are able to filter out 95% of 0.3 micron particle. The filter of the N95 mask is made up of millions of microfibers of polypropylene layered on top of each other that have been permanently electrostatically charged. The electrical charge is necessary to retain its ability to filter microorganisms or microparticles.

The N95 mask reduces the transmission of aerosol by 70%, whereas surgical mask reduces transmission by 50% and cotton masks by 40%. Maximum protection from catching the infection from others by the aerosol route is offered by the N95 mask (99%), whereas the surgical mask offers 75-80% protection and the cloth mask by around 50-70%.

If a healthcare worker is collecting nasal swabs or throat swabs for COVID-19

testing or caring for a patient who is COVID-19 positive, it is preferable to use an N95 mask and if not available, a surgical mask.

Elastomeric Respirator are either half or full-face masks made of soft rubber that allows them to be repeatedly cleaned, disinfected, and reused. Their filtration capacity is determined by the filter attached; it ranges from N95 to P100 level particle capacity.

Powered Air Purifying Respirator (PAPR) are composed of a face mask or hood and separate motor/fan/filter unit. It creates highly filtered air flow through the hood to protect the wearer from aerosolized particles.

Controlled Air-Purifying Respirator (CAPR) is similar to a PAPR in that it uses active filtered air flow within a hood or face mask to protect the wearer. The filters used within PAPRs and CAPRs are designated as High-Efficiency Particulate Air (HEPA) filter. They filter out 99.97% of 0.3 micron particles and are considered equivalent to P100 level filters.

The European Union classifies respirator masks into FFP1, FFP 2 and FFP3 where FFP stands for Filtering Face Piece. N95 is roughly equivalent to FFP2 and N99 is roughly equivalent to FFP3 masks. FFP1, FFP2 and FFP3 are also called P1, P2 and P3.[7]

When performing aerosol generating procedures, a particulate respirator that is at least as protective as a National Institute for Occupational Safety and Health (NIOSH)-certified N95, European Standard Filtering Face Piece 2 (EU FFP2), or equivalent, should be used. When performing emergency dental treatment with suspected COVID-19 cases, a higher level of respiratory protection should be considered, such as EU FFP3 respirators conforming to European Standard 149 (EN149).[8]

Conclusion:

Patients and practitioners are regularly exposed to aerosols generated during procedures which pose a significant risk of transmission of infectious disease, hence, precautions for the same should be incorporated in daily practice. The COVID-19 pandemic has created a heightened need for knowledge regarding respiratory protective equipment. A N95 mask is the minimum approved level of respiratory protection for airborne isolation for SARS viruses and is generally sufficient for routine situations. To conclude, everybody should wear a mask, primarily because it significantly reduces the chances of spreading the aerosol route of transmission as well as offers protection against catching the infection.

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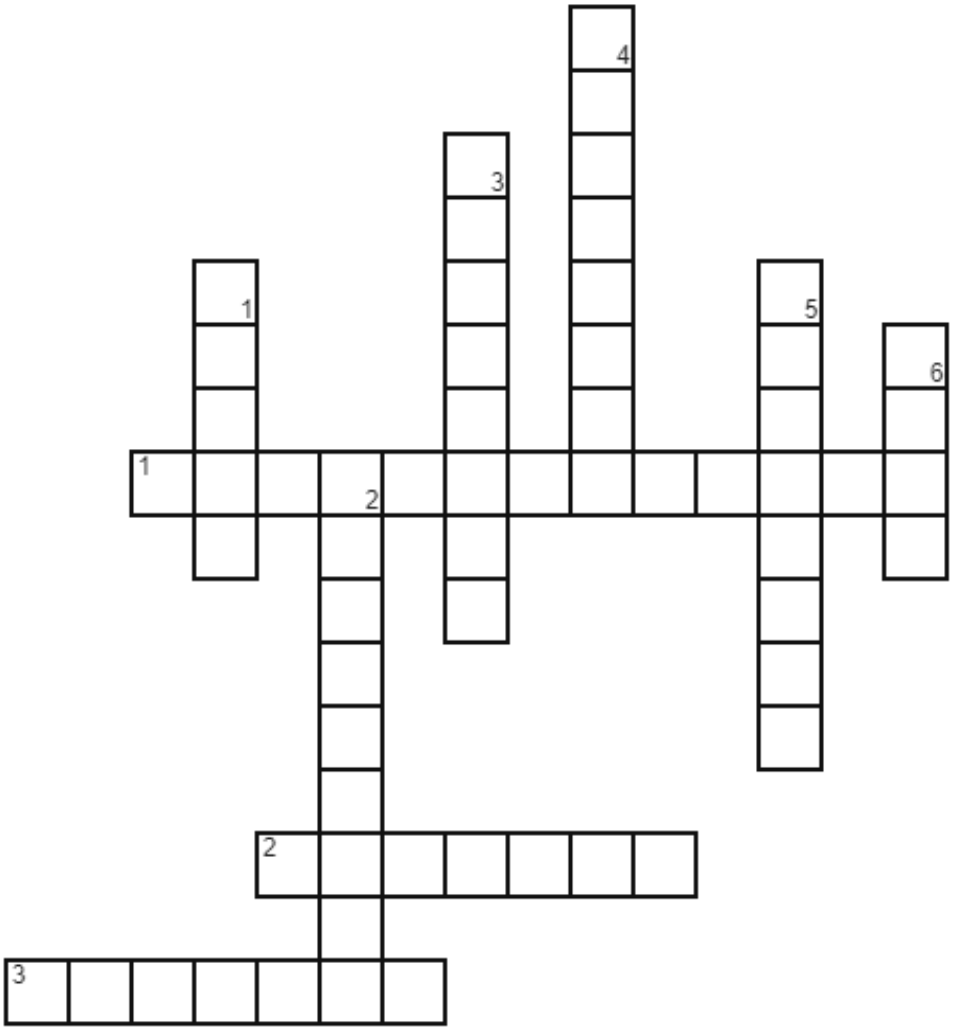
Cross Word



Across

1. inflammation & loss of CT
2. soft tissue
3. resin placed on occlusal surface

Down

1. post
2. ....-casting- luting
3. active post
4. tooth wear
5. supports a dental prosthesis
6. pointed portion of tooth

Activities of IDA Ghaziabad Branch for the Year 2019-20


my city celebration

संघ की सिल्वर जुबली पर डॉक्टरों ने खूब लगाए चौके-छक्के

...पर तू जरा भी साथ दे तो और बात है

राज्य स्तरीय खो-खो चैंपियनशिप की मेजबानी करेगा जिला


मदद के लिए आगे आए संगठन

एनबीटी न्यूज, गाजियाबाद :

दिहाड़ी मजदूरों को दिया राशन

Silver Jubilee Year

IDA Gzb is celebrating its Silver Jubilee Year 2020 by planning various Activities like IDA members Directory, Cricket match and Other Social Activities.

3 CDE activities had been carried out by IDA Ghaziabad branch for year 2019-20.

1. First CDE Meet on 14th Dec.,2019 at Hotel Apple Tree, RDC, Raj Nagar, Ghaziabad by Dr. Sukhdev Singh, MDS Pedodontia , Topic-Practice Management –A Bar of Soup.
2. Second CDE Meet on 11th Jan.,2020at Hotel West View ,Ghaziabad by Dr Deepak Kumar Jain, Senior Consultant and Unit Head Oncology At Yashoda Hospital Ghziabad. Topic- Integrating Dentistry and Oncology..The meet was followed by New year celebrations and attended by all IDA members and their families.
3. Third CDE Meet on 23rd Feb.,2020 at Hotel Radisson Blu, Kaushambhi by Dr.Anshuman Kumar ,Director, Surgical Oncology, Clinical Lead –Academic Services, Dharamshila Narayana Hospital, Delhi. Topic - Bridge the Gap –Its Cancer.

Social Activities During Corona Phase.

1. Members of IDA Ghaziabad Branch planned collectively the distribution of 250 food Packets daily to Downtrodden and less privileged people of our society during this phase of corona crisis .All members collectively contributed to this noble cause and we raised a total amount of Rs. One Lac among us to carry out this activity. Activity started on 2nd April 2020 and continued for a week with the permission of ADM Ghaziabad, and local administration in this locked down period. NBT news has also covered and acknowledged this social activity being carried over by IDA Ghaziabad branch
2. IDA Ghaziabad has supplied a two days vegetables supply for the community kitchen after receiving a demand call from G-block Kavinagar Gurudwara.

Activities of IDA Jaunpur Branch for the Year 2019-20


school dental health check up

blood donation by ida jaunpur

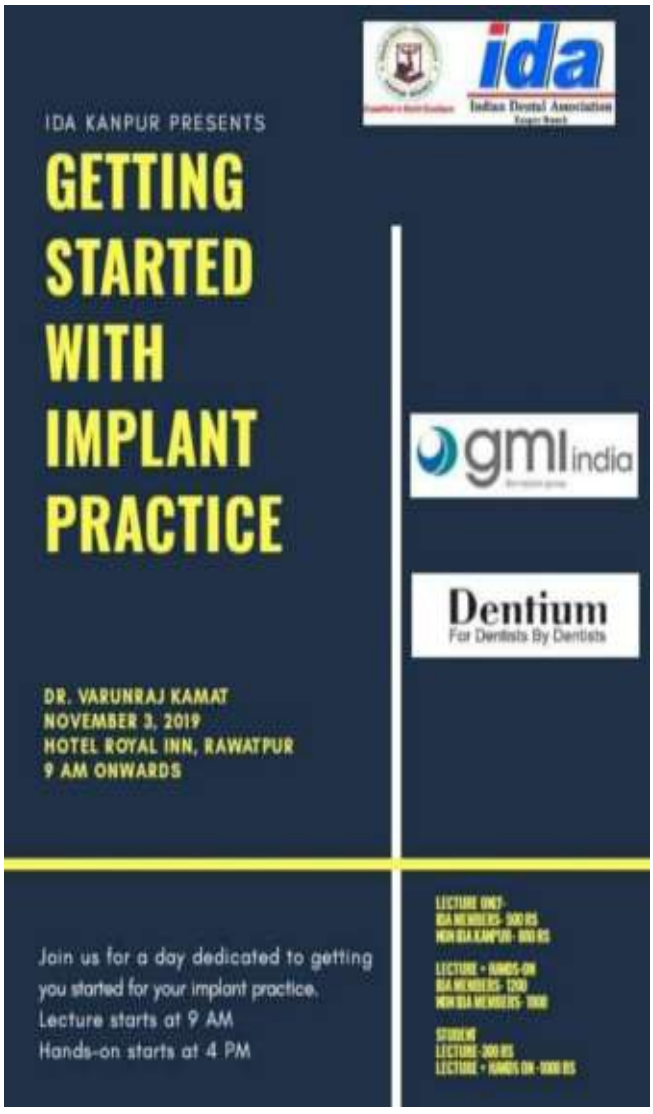

mega cde event

Activities of IDA Kanpur Branch for the Year 2019-20

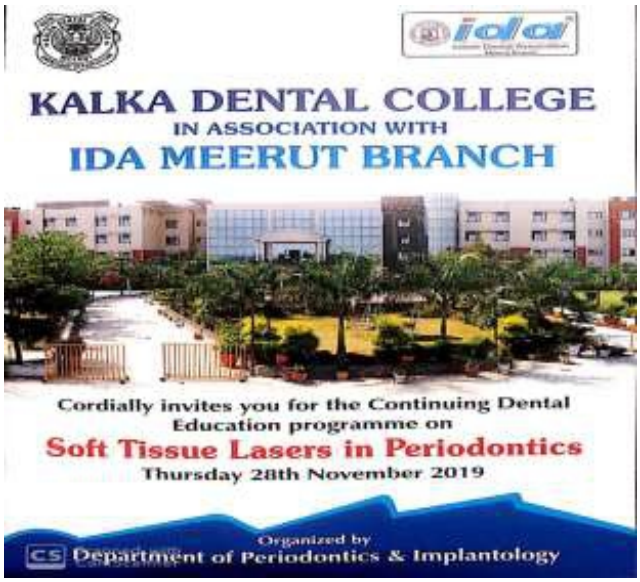
बच्चों के लिए हेल्थ कैंप का आयोजन

kanpur@inext.co.in

KANPUR (11 Feb): सोसाइटी क्लब ने इंडियन डेंटल एसोसिएशन के तत्वावधान में गोविंदनगर सोसाइटी स्थित काला बाबा शिव मंदिर में हेल्थ कैंप का आयोजन किया गया. जिसमें आईडीए की तरफ से डॉ. अवनीश तिवारी ने बच्चों के दांतों की जांच कर निःशुल्क दवाएं भी दीं. इस अवसर पर जांच की अध्यक्ष रेनू गुप्ता, सभा गुप्ता, राजीव मेहरा, अनुपम गुप्ता, डॉ. जवाब सिंह, डॉ. नीरज सोनी, डॉ. पीयूष वर्मा, डॉ. गौरव भाई बरी, डॉ. अतुल गुप्ता आदि उपस्थित रहे.



Activities of IDA Meerut Branch for the Year 2019-20



शेरगढ़ी पहुंची वैन, किया दांतों का इलाज

मेरठ। इंडियन डेंटल एसोसिएशन की ओर से संचालित की जा रही दंत उपचार वैन बुधवार को शेरगढ़ी पहुंची। वैन के शेरगढ़ी पहुंचते ही जांच करने के लिए मरीजों की लाइन लग गई। वैन में 700 सौ से ज्यादा मरीजों की डॉ. हिमांशु मिश्रा, डॉ. श्वेता शर्मा, डॉ. सुरभि, डॉ. ज्योति यादव, डॉ. स्तुति ने मरीजों की जांच की। वैन शहर में विभिन्न इलाकों में पहुंचकर दांत, मुख की जांच कर रही है। जांच पता चला कि पुरुष बीड़ी, सिगरेट, तम्बाकू का सेवन करने की वजह से दांत, मुख में इंफेक्शन से ग्रस्त हैं। कुछ लोगों के मुख में कैंसर के शुरुवाती लक्षण भी मिले हैं। इस अवसर पर शाखा के सचिव डॉ. पुनीत कंसल, डॉ. पीयूष जैन, डॉ. विवेक रस्तोगी मौजूद रहे।

Activities of IDA Sahjanwa Branch for the Year 2019-20

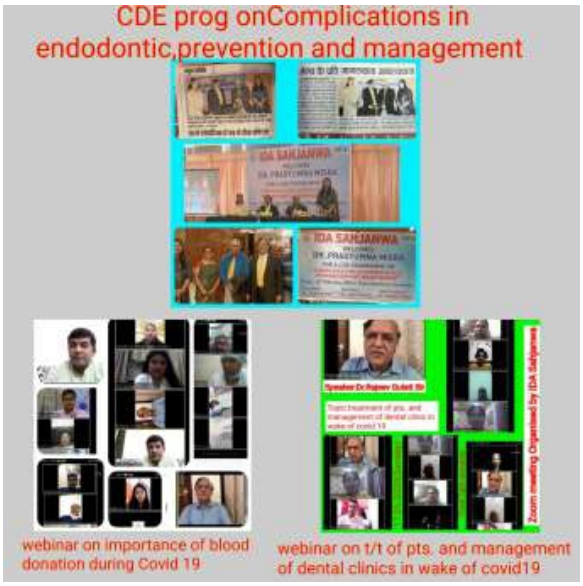
Sahjanwa branch was formed in the month of January 2020 with 20 members. Our branch started its working by organising its first CDE program on 28 February 2020. Our eminent speaker was ProfessorDr.PradyumanMisra, Principal and HOD conservative dentistry and endodontics Career Dental College and the topic was "Complications in Endodontics, Prevention and Management".

Soon after covid-19 pandemic engulfed the whole world and lockdown was imposed everywhere, but still in that period, our newly formed branch worked efficiently and organised Webinar on "Treatment of patients and management of dental clinics in wake of covid-19" which was chaired by Dr Rajeev Gulati Vice-Chairman PIDS Gorakhpur, next webinar was organised on "Importance of Blood Donation in covid-19" by Dr Suresh Singh Associate Professor Anaesthesia BRD Medical College Gorakhpur & President Red Pulse Youth Trust.

Our budding branch also organised various campaigns such as "No Tobacco Day" on 31st March 2020 "Yoga Day" on 21st june 2020 "Plantation week" from 1-7th July 2020.

We made sure that our members get well trained before opening their clinics so "Covid-19 Training" for dental surgeons of our branch was organised at BRD Medical College under the supervision of Dr DK Srivastava HOD SPM and Dr.Imran Khan (Anaes).

Our branch members were tirelessly involved in providing telephonic/ online consultations to patients free of cost during the lockdown period and are continuously creatingCovid 19 awareness through Print / Radio and Social media.



Activities of IDA Faizabad Branch for the Year 2019-20

Activities of IDA Firozabad Branch for the Year 2019-20

Activities of IDA Lucknow Branch for the Year 2019-20

CDE/ Webinars

Global outreach Digital Dentistry Conference

COVID Training At KGMU

Press Conference Regarding COVID-19

Activities of IDA Moradabad Branch for the Year 2019-20

On 3rd November 2019, AGM of Moradabad branch was conducted at ***Hotel Grand Village,*** Moradabad.

Best Local Branch Secretary Award Given To **Dr. Romil Singhal**

Janta Curfew

CDE Through Zoom App


निजी दंत चिकित्सक आज से देखेंगे मरीज

Activities of IDA Deoria Branch for the Year 2019-20

IDA Deoria branch has been working diligently towards the upliftment of dental surgeons and for the society at large. In 2019, under the able guidance of President, Dr. R. P Shahi, Secretary, Dr. Nitish Rai & other office bearers & senior members various activities were initiated & conducted. It was in 2019 that first time in Deoria, the IMA team has offered associate membership to IDA team & this offer was accepted and 10 members of IDA have taken associate membership of IMA. This further strengthens the bonding of IMA & IDA in the district and as a result of this almost all the activities conducted by IMA are supported by IDA & vice versa.

Some of the major activities in the year 2019 were as below:

1. All INDIA PROTEST DAY: On 4th January 2019 IDA Deoria supported IMA Deoria in the ALL India Protest day which was done against NMC bill 2017, IMC (amendments) Bill 2018, consumer protection bill 2018.
2. Republic day celebration:Participation of IDA Deoria members on Republic day at Deoria Club on 26th January 2019.
3. Representation of IDA Deoria at DeoriaMahotsav :IDA team has given support to DM, Deoria during Deoria Mahotsav and provided a good awareness campaign on dental problems on 13th February 2019.
4. Condolence meeting & Candle March for Martyrs of Pulvama attack: On 15th February 2019, a condolence meeting and candle march was kept for the Martyrs of Pulvama attack (in which our 42 CRPF Jawans were killed).
5. CDE Program: Topic “Play with Composites” was organized on 17/02/2019 with participation of members from Deoria, Kushinagar& nearby districts.
6. International YOGA day: On 21st June 2019. Participation of IDA Deoria members on this day has been commendable.
7. EOGM-IDA head office elections: Regarding elections on 14/10/2019.
8. Annual election meeting of IDA Deoria branch for voting for FY 2020 team: On 18/12/2019

Apart from the above activities IDA Deoria branch has been actively involved in sports events also and this has been stated below.

आयुष्मान के चिकित्सकों व उनके परिजनों ने लिया हिस्सा

चिकित्सकों ने खेलकूद में दिखाया दम

Activities of IDA Gorakhpur Branch for the Year 2019-20

Activities of IDA Pilibhit Branch for the Year 2019-20

Dental camp held on 12 th March 2020 in Dutt Dental Clinic

Medicines and good distribution done.

Dental camp held in vradh Ashram , old age home in Pilibhit.

Activities of IDA Basti Branch for the Year 2019-20

Activities of IDA Hardoi Branch for the Year 2019-20

Activities of IDA Ghazipur Branch for the Year 2019-20

Dr.Dharmendra Pratap Singh member of ida ghazipur winning 3rd Prize in National Quiz Contest organized by IDA Head Office and sun pharma

Installation Ceremony Organize by IDA Ghazipur On 10 January 2020

IDA Ghazipur organize Dental camp in Convent School Gh azipur.

Activities of IDA Varanasi Branch for the Year 2019-20

डॉ. अमर बने आईडीए वाराणसी के सचिव

varanasi@inext.co.in

VARANASI (3 Dec.): डॉ. अमर अनुपम मल्टीस्पेशलिटी डेंटल हॉस्पिटल में आयोजित इंडियन डेंटल एसोसिएशन आईडीए की वार्षिक सभा में डॉ. अमर अनुपम को सचिव चुना गया. उन्हें 149 चिकित्सकों के वोट मिले. उनके अलावा डॉ. विकास तिवारी को अध्यक्ष, डॉ. सीडी द्विवेदी को उपाध्यक्ष, डॉ. अभिषेक मिश्रा को संयुक्त सचिव, डॉ. अंकित यादव को सहायक सचिव, डॉ. उषा किरण यादव को एडिटर के अलाव अन्य कई

चिकित्सकों को अलग-अलग पद पर नॉमित किया गया इस दौरान डॉ. जेएल गर्ग, डॉ. देवेन्द्र चड्ढा, दंत संका बीएचयू की डीन नीलम मित्तल, डॉ. विजय पराशर आ उपस्थित रहे.

आईडीए : विकास अध्यक्ष अमर अनुपम बने सचिव

वाराणसी। इंडियन डेंटल एसोसिएशन की वार्षिक आमसभा अखरी बाईपास स्थित एक हास्पिटल के सभागार में हुई। इस दौरान हुए चुनाव में 149 दंत चिकित्सकों ने अपना वोट देकर पदाधिकारियों का चयन किया। जिसमें अध्यक्ष निर्वाचित डॉ. विकास तिवारी, उपाध्यक्ष डॉ.सीडी द्विवेदी व डॉ. विनीत सिंह, सचिव डॉ. अमर अनुपम, संयुक्त सचिव डॉ. अभिषेक मिश्रा, सहायक सचिव डॉ. अंकित यादव, एडीटर डॉ. ऊषा किरण पांडेय के अतिरिक्त अन्य पदाधिकारियों में डॉ. मनमोहन गुप्ता, डॉ.शैलेन्द्र कुमार सिंह, डॉ. हीना मेहरा, डॉ.रचना सैनी, डॉ. आनंद कुशवाहा, डॉ. पूनम निगम व डा.श्वेता दूबे रहीं। वहीं स्टेट प्रतिनिधि में डॉ. मनोज श्रीवास्तव, डॉ. अमित कुमार सिंह, डॉ. आदित्य शंकर पांडेय, डॉ. डीपी सिंह, डॉ.प्रशांत सिंह व डॉ. शिशिर कुमार मिश्रा सभी प्रत्याशियों को माला पहनाकर उनका स्वागत किया गया।

चिकित्सकों ने जानी दर्द रहित दंत चिकित्सा

वाराणसी। इंडियन डेंटल एसोसिएशन (आईडीए) वाराणसी शाखा की ओर से सतत चिकित्सा शिक्षा कार्यक्रम आयोजित हुआ। इसमें दंत चिकित्सा की विधियों पर चर्चा की गई। मुख्य वक्ता दिल्ली से आए इंडोडॉंटिस्ट डॉ. कुबेर सूद ने दर्द रहित दंत चिकित्सा के बारे में चिकित्सकों को विस्तार से बताया। कैंटोंमेंट स्थित एक होटल में सचिव डॉ. अमर अनुपम के निर्देशन में हुए कार्यक्रम में सचिव डॉ. अमर अनुपम ने एसोसिएशन की ओर से समय-समय पर इस तरह के आयोजनों को कराते रहने की बात कही। कार्यक्रम में डॉ. प्रवीन कुमार, डॉ. विकास तिवारी, डॉ. मनोज श्रीवास्तव, डॉ. अभिषेक मिश्र, डॉ. विजय पराशर, डॉ. बीके सिंह, डॉ. जसलोक सिंह आदि मौजूद रहे।

Mega Dental camp held on 1st march 2020 at police line Varanasi, inaugurated by ADG Varanasi zone Mr. Braj Bhushan where approximately 750 police officials were examined

गरीबों में बांटा गया खाने का सामान.

हॉस्पिटल में पहुंचेंगे कोरोना संभावित

इंडियन डेंटल एसोसिएशन के सचिव डॉ. अमर अनुपम ने कोविड-19 के मरीजों को क्वारंटाइन करने के लिए डीएम से मुलाकात कर जिला प्रशासन को अमर अनुपम डेंटल हॉस्पिटल देने की पेशकश की है. उन्होंने डीएम से कहा है कि वे अपने हॉस्पिटल के सेकंड फ्लोर को क्वारंटाइन करने के लिए देना चाहते हैं. जिसे डीम कौशल राज शर्मा ने स्वीकार करते हुए सीएमओ को निर्देश जारी किया है. उन्होंने कहा है कि इस अस्पताल की सभी व्यवस्थाओं और स्थान की जांच कर लें जिससे आपात स्थिति में कोरोना संभावित लोगों को क्वारंटाइन किया जा सके. इस कार्य के लिए डीएम ने डॉ. अनुपम को धन्यवाद दिया.

सुरेंद्र सिंह औढ़े ने दिया एक करोड़

विधायक सुरेंद्र सिंह औढ़े ने मंगलवार को उत्तर प्रदेश कोविड केयर फंड में सहायता को डीएम कौशलराज शर्मा को पत्र सौंपा. कोरोना महामारी से निपटने के लिए विधान मंडल

अतिआवश्यक/महत्वपूर्ण/कोविड-19

प्रेषक,
मुख्य चिकित्सा अधिकारी,
वाराणसी।

सेवा में,
अध्यक्ष/सचिव,
डेण्टल एसोसिएशन,
शाखा-वाराणसी।

पत्रांक: मु0चि0अ0/डेण्टल क्लीनिक/सेवाएं/2020/[illegible] दिनांक 24-04-2020

विषय- लॉक डाउन के दौरान प्रदेश में निजी डेण्टल क्लीनिक को खोलने के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक जिलाधिकारी महोदय वाराणसी को सम्बोधित एवं मण्डलायुक्त महोदय को पृष्ठांकित मुख्य सचिव महोदय, चिकित्सा अनुभाग-5, उत्तर प्रदेश, शासन लखनऊ के पत्र संख्या-746/ पांच-5/2020, दिनांक 30 मार्च, 2020 का सन्दर्भ ग्रहण करने का कष्ट करें जिसके द्वारा अवगत कराया गया है कि कोरोना वायरस (कोविड-19) के संक्रमण के दृष्टिगत कुछ निजी चिकित्सालयों/डेण्टल क्लीनिकों द्वारा अपने प्रतिष्ठान को या तो इस समय बन्द कर दिये गये हैं या उनके द्वारा अधिकांश मरीजों को देखा ही नहीं जा रहा है जबकि इस विपरीत समय में समाज के हर वर्ग की जिम्मेदारी है कि वह अपेक्षित सहयोग करें।

इस सम्बन्ध में आपसे अपेक्षा की जाती है कि कोरोना वायरस (कोविड-19) के संक्रमण के दृष्टिगत निजी चिकित्सालयों/डेण्टल क्लीनिकों को निम्नलिखित कार्यवाही किये जाने हेतु अपने स्तर से सदस्यों को निर्देशित कराने का कष्ट करें।

1. लॉक डाउन के दौरान निजी चिकित्सालयों को खोलने की व्यवस्था की जाए। निजी चिकित्सालयों/डेण्टल क्लीनिकों के प्रबन्धकों को निर्देशित किया जाए कि वे चिकित्सा एवं उपचार हेतु प्रयोग में आने वाले उपकरण को क्रियाशील रखें, चिकित्सकों/पैरामेडिकल स्टाफ की एक निश्चित अवधि के लिए उपस्थिति सुनिश्चित करें तथा दवाओं की पर्याप्त उपलब्धता बनाये रखें।
2. निजी चिकित्सालयों के प्रतिनिधियों के साथ बैठक कर उन्हें अवगत कराया जाय कि सोशल डिस्टेंसिंग का पालन करते हुए भी मरीजों को देखा जाए।
3. निजी चिकित्सालयों में समुचित चिकित्सा सेवा सुनिश्चित करने हेतु IMA (Indian Medical Association) Dental Association का समुचित सहयोग अपेक्षित है।
4. निजी चिकित्सालयों/डेण्टल क्लीनिकों के प्रबन्धकों/संचालकों की बैठक कर, उनसे वार्ता करते हुए उक्त निर्देशों का पालन सुनिश्चित करें/करायें।
5. निजी चिकित्सालयों/डेण्टल क्लीनिकों को यह भी अवगत कराया जाए कि वे अपने कर्तव्यों का भली-भांति निर्वहन सुनिश्चित करें। यदि उक्त निर्देशों का पालन उनके द्वारा नहीं किया जाता है तो समुचित प्राविधानों के अन्तर्गत उनके विरुद्ध कार्यवाही भी की जायेगी।

कृपया उक्त निर्देशों का कड़ाई से पालन सुनिश्चित कराया जाए।

भवदीय,
मुख्य चिकित्सा अधिकारी,
वाराणसी।

पत्रांक: मु0चि0अ0/डेण्टल क्लीनिक/सेवाएं/2020/ तद्दिनांक।

प्रतिलिपि निम्नलिखित को सेवा में सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित-
1-मुख्य सचिव महोदय, उत्तर प्रदेश शासन, लखनऊ।
2-मण्डलायुक्त महोदय, वाराणसी।
3-जिलाधिकारी महोदय, वाराणसी।

मुख्य चिकित्सा अधिकारी,
वाराणसी।

Key

Across

1. **periodontitis**
2. **gingiva**
3. **sealant**

Down

1. **dowel**
2. **impession**
3. **threaded**
4. **abrasion**
5. **abutment**
6. **cusp**

SUBMISSION GUIDELINES

The IDA U.P. State Dental Journal is a peer reviewed online journal published quarterly with the aim of publishing original full-length research articles, reviews and case reports pertinent to dentistry. Issue contents are available online.

Submission of manuscripts :

Manuscripts that are being submitted should be complete in all respects, and deal with original material not previously published, or being considered for publication elsewhere. The original, written in English, complete with tables and/or figures, should be uploaded on the website along with the mandatory submission form. The preferred storage medium is a file in MS Word (Windows) format, although other systems may also be welcomed. If accepted, the manuscript should not be published elsewhere in the same form, in either the same or another language, without the consent of the Editor. Manuscripts should accompany mandatory submission form signed by all the authors. The form is available for download from the website of the journal.

Ethics :

Manuscripts that reveal a lack of proper, ethical consideration for human subjects or experimental animals will not be accepted for publication. Manuscripts should be accompanied by a statement that all efforts were made to minimize animal suffering, to reduce the number of animals used, and to utilize alternatives to in vivo techniques, if available.

Conflict of Interest :

All authors are requested to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations.

Style of manuscripts :

General

Manuscripts should be typewritten with double-spacing (at least 6 mm between lines) on A4 size (21 × 29.5 cm) with ample margins (at least 2.5 cm) on all four sides. Number pages at bottom, as follows:

Page 1. Title Page: complete title; first name, middle initial, surname of each author with academic affiliations; mailing address, phone and FAX numbers, and e-mail address of corresponding author for editorial correspondence.

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References, Tables, Figures with legends. All pages should be numbered consecutively and stored in one file, the title page being page 1.

Methods

Give manufacturer's name and location (city, country) in parentheses for reagents and instruments. Quantitative results must be supported by appropriate experimental design, statistical tests, and P values.

References

References should be numbered consecutively in the order in which they appear in the text. References should include the beginning and ending page numbers. Identify references in the text, table and figure legends by Arabic numbers in parentheses such as (1), (2,3), and (1,3,4-8). Use the style of the examples below. Abbreviations of journals should conform to those of Index Medicus.

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Sample References

[Journals]

1. De Jager N, Pallav P, Feilzer AJ (2005) Finite element analysis model to simulate the behavior of luting cements during setting. Dent Mater 21, 1025-1032.
2. Mikami A (2007) Comparative evaluation of metal priming agents applied for bonding of magnetic stainless steel with acrylic repair resin. J Oral Sci. (in press)
3. Avoid referencing abstracts if possible. If unavoidable, reference as follows: Ando M, Eckert GJ, Zero DT (2008) Longitudinal assessment of dynamic process of caries lesion with microfocus computed tomography. Caries Res 42, 1204. (Abstract) [Books]
4. Sternberger LA (1979) Immunocytochemistry. 2nd ed, John Wiley & Sons, New York, 5-31.
5. Mastronarde DN, Laninsky MS, McIntosh JR (1997) Superthin serial sectioning for high-resolution 3-D reconstruction of cellular structures. In: Proceedings of microscopy and microanalysis 1997, Vol 3, Suppl 2, Bailey GW, Dimlich RVW, Alexander KB, McCarthy JJ, Pretlow TP eds, Springer, New York, 221-222.

[Others]

6. International Organization for Standardization (2000) Dentistry -- Polymer-based filling, restorative and luting materials. ISO 4049:2000, Geneve.
7. Health Policy Bureau Ministry of Health and Welfare, Japan (1995) Reports on the survey of dental disease. Oral Health Association, Tokyo, 156-258. (in Japanese)
8. Ibaragi K, Kazama H, Oguri M (2003) Dental catalyst for chemical polymerization and use thereof. US Patent 6660784, Dec 9.

Figures and tables

Each illustration should be numbered consecutively with Arabic numbers and accompanied by a legend clearly describing it. All illustrations must be submitted in a form and condition suitable for reproduction. Each table should be clearly titled and provided with a comprehensive legend. Statistical measures of variation, SD, SEM etc. should be identified. Tables should be numbered separately in Arabic numbers (Table 1, 2 etc.).

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