



Bapuji Educational Association (R.)



# JJMMC

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*Voice*

Official Quarterly News Letter Publication of  
JJM Medical College, Davangere

## INAUGURATION OF MOLECULAR LAB FOR COVID-19 TESTING





## SYMPOSIUM ON nCORONA VIRUS-COVID19



## CARDIAC ICU INAUGURATION



## PSYCHIATRY-CME2020



## LEPROSY DAY



**J. J. M. Medical College, Davangere.**

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### *From the desk of the Principal*

As we present to you the current issue of JJMMC voice a plethora of changes have taken place in all our lives due to the prevailing COVID-19 pandemic.

We at JJMMC have adapted to the situation in all spheres of work including academic, research and patient care. Education has attained all new heights with online teaching becoming the norm of the day. Our institution has achieved landmark milestones on this front by conducting highest number of online classes with content of excellent quality appreciated all over by the students, parents and medical fraternity.

On the diagnostic front we have successfully established a state of art Molecular Diagnostic lab for COVID-19 testing with NABL accreditation. A dedicated software with cutting edge technology has been installed at our outpatient entrances to detect and manage suspected cases of COVID-19.

We extend our solidarity in these tough times to the community at large for a successful combat against this pandemic. We hope our readers take all precautionary measures and stay safe.

**Principal**

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The Chairman / The Principal  
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### DEPARTMENT OF MICROBIOLOGY

NABL accredited Molecular Lab for COVID-19 testing has been established at Department of Microbiology. It was inaugurated by Sri Shamanuru Shivashankrappa, secretary BEA and Sri Byrathi Basavaraj, District incharge minister and urban development minister Government of Karnataka on 26<sup>th</sup> May 2020 at JJM Medical college. The programme was graced by Sri Mahantesh Bilagi, DC, Sri S.A. Ravindranath MLA, Davangere (North) and Sri Hanumantharayappa, SP, Davangere. This is the second molecular lab of the District testing nearly 100 samples per day.

### DEPARTMENT OF PHYSIOLOGY

- Dr. Smilee Johncy S, Professor and HOD of Physiology has been included as a reviewer for the book "Lippincott Illustrated Reviews Physiology" South Asian Edition 2019, published by Wolters Kluwer.
- Dr. Bhagya V, Professor of Physiology delivered a talk on "Electrophysiology of nerve and muscle at the CME and Workshop on "Nerve conduction study and electromyography" organized by Department of Physiology on 1<sup>st</sup> February 2020 at S.S. Institute of Medical Sciences and Research Centre, Davangere.

### DEPARTMENT OF BIOCHEMISTRY

#### Academic activities

- Dr. Preethi B P, Professor Biochemistry was invited as Chief Guest on eve of Women's Day Celebration at Jain Institute of Technology, Davangere on 10<sup>th</sup> March 2020. Delivered a guest lecture on "Women Empowerment"



- Dr. Preethi B P, Professor Biochemistry delivered a guest lecture on "Awareness regarding COVID 19" for engineering students at Jain Institute of Technology, Davangere on 10<sup>th</sup> March 2020.



- Dr. Preethi B P, Professor Biochemistry has guided ICMR STS for Trishna A Rao, final year medical students for project on " A comparative study to evaluate diagnostic accuracy of Bedside Hydrogen Peroxide Test and Light's Criteria in differentiating pleural effusions as transudate and exudate"
- Dr. Preethi B P has guided three short term research projects for undergraduate towards research poster presentation at National level undergraduate conference held at JNMC, Belagavi from 22<sup>nd</sup> -24<sup>th</sup> Feb 2020.

### DEPARTMENT OF PATHOLOGY

#### ACADEMIC ACTIVITIES

- Dr. Chatura KR ,Professor Pathology
- 1. **Talk:** "Practical Points in Gastric Biopsy", National CME on "Endoscopic gastrointestinal Pathology" at AK Subbaiah Institute of Medical Sciences, Shivamogga, on 6<sup>th</sup> March 2020
- 2. **Slide seminar :** "Enigma of GI biopsies" , at National CME on "Endoscopic gastrointestinal Pathology" at AK Subbaiah Institute of Medical Sciences, Shivamogga, on 6<sup>th</sup> March 2020
- 3. **KMC Observer:** National CME on "Endoscopic gastrointestinal Pathology" at AK Subbaiah Institute of Medical Sciences, Shivamogga, on 6<sup>th</sup> March 2020



- Dr Suresh Hanagavadi, Professor Pathology
- 1. Invited guest for 13<sup>th</sup> Annual Congress of European Association for Haemophilia & Allied disorders (EHAD-2020), held at The Hague, Netherlands, from 5<sup>th</sup>-7<sup>th</sup>, February, 2020.
- 2. Radio interview on the occasion of World Hemophilia day 2020, observed on 17<sup>th</sup>, April, broadcasted in Red FM on 23.04.2020
- 3. Webinar meeting with State Disability Commissioner, Government of Karnataka & NGOs to discuss about problems of people with disabilities due to COVID-19 pandemic & preventive measures to be taken, organized by Disability Network NGOs Alliance(DNA) on 08.05.2020 between 3 PM to 5 PM
- 4. Webinar online presentation on "Hemophilia- Current & Future Treatment Practices" organized by ROCHE on 16:05 2020 between 6PM to 7:30 PM
- 5. Panellist for Webinar, online presentation "Hemophilia-Comprehensive Care & Rehabilitation" organized by Composite Centre for Skill Development, Rehabilitation & Empowerment of people with Disabilities, (NIEPID), Ministry of Social Empowerment, Government of India, New Delhi on 26.05.2020 between 3PM to 5:30 PM
- 6. Webinar online presentation - Current Challenges in Diagnosis & Management of Von Willebrand Disease in India" in Doc plexus platform, organized by Takeda, India on 27.05.2020 between 6 PM to 7:15 PM



## Academics & Achievements



- Dr. Seema Bijjaragi Professor Pathology delivered a talk in the CME "Male Infertility in the era of Assisted Reproductive Technology" organized by Department of Pathology on 3<sup>rd</sup> Jan 2020 at S.S. Institute of Medical Sciences and Research Centre, Davangere.
- Dr. Nagraj Asst. Professor Pathology delivered a talk in the CME "Male Infertility in the era of Assisted Reproductive Technology"

organized by Department of Pathology on 3<sup>rd</sup> Jan 2020 at S.S. Institute of Medical Sciences and Research Centre, Davangere.

- Dr. Sunil Kumar KB Professor Pathology gave a talk on "Biosafety and Infection prevention and control in the wake of COVID19" on May 16<sup>th</sup> at CG Hospital Davangere
- Dr. Ashwini HN, Associate professor, was part of Kayakalp Assessment of government health facilities of Chitradurga district as external assessor from 9<sup>th</sup> to 14<sup>th</sup> February 2020.

### DEPARTMENT OF PHARMACOLOGY

#### Postgraduate activities

Oral Paper Topic	Presenter	Author's Name	Presentation at
A comparative study between Cilnidipine and Amlodipine on learning and memory in albino mice	Dr Veena H 2 <sup>nd</sup> year PG	Dr Veena H Dr Narendranath S Dr Shashikala G H	The First Annual Sri Ramachandra Clinical Pharmacology Event and Training, held on October 11 and 12, 2019, Sri Ramachandra Medical College and Research Institute, Chennai, TamilNadu.

Sl. No.	Poster Title	Presenter	Author's Name	Prize	Presentation at
1	Acetaminophen induced anaphylactic shock-A case report	Dr Veena H 2 <sup>nd</sup> year PG	Dr Veena H Dr Santhosh Kumar M Dr Shashikala G H	3 <sup>rd</sup>	ASPIRE '20, held from 30 <sup>th</sup> January to 2 <sup>nd</sup> February 2020, Sri Ramachandra Medical College And Research Institute, Chennai, TamilNadu.
2	Evaluation of Central analgesic activity of Lettuce (L.sativa) leaves on Wistar rats	Dr Harish Kumar S 2 <sup>nd</sup> year PG	Dr Harish Kumar S Dr Geetha M		5 <sup>th</sup> IUPHAR World Conference on the Pharmacology of Natural products & 51 <sup>st</sup> Annual Conference of Indian Pharmacological Society (IPS) From 4 <sup>th</sup> to 7 <sup>th</sup> December 2019 ICMR - National institute of Nutrition, Tarnaka, Hyderabad, Telangana, India



## DEPARTMENT OF COMMUNITY MEDICINE

### January 2020

1. Guest lecture by Dr Vaman Kulkarni, Associate professor, KMC, Manglore on MINErVA (Mortality in India Established through Verbal Autopsy) and also invited medical college faculty to join the network as verbal autopsy coders & help in establishing a reliable system to measure Causes of Deaths for India.
2. Dr Shreedhar, Surveillance Medical Officer, WHO gave a guest lecture on recent updates in pulse polio immunization program & role of Community Medicine faculty &/or PGs in monitoring of the NID activity on 17<sup>th</sup> Jan 2020.
3. Pulse polio NID booth @ UHTC was set up on 19<sup>th</sup> Jan 2020 - children less than 5-year-old were immunized. Interns, UGs, PGs & UHTC staff were part of the activity. Dr. Shubha DB, Assistant Professor coordinated the activity.



4. Dr Manisha & Dr Ashwini LH, post-graduates, Community Medicine worked as external monitors on behalf of WHO for pulse polio immunization activity in Davangere district from 19<sup>th</sup> to 22<sup>nd</sup> January 2020.
5. Health check-up of School children was carried out from 21<sup>st</sup> to 23<sup>rd</sup> Jan 2020. More than 500 children of Bapuji HPS, PJ Extension underwent general health check-up & anthropometric measurement. Health education was given regarding healthy eating habits & role of junk foods, overweight/obesity in development of non-communicable diseases. Dr. Shubha DB & Dr. Sandhyarani J, Assistant professors coordinated the activity.
6. Guest lecture on Ca. breast & Ca. cervix was given by Dr. Shubha DB, Assistant professor for healthcare workers of Harihar taluk at District training centre, CG Hospital on 24<sup>th</sup> Jan 2020.
7. Screening & Sensitization workshop on Breast & Cervical cancer for urban ASHAs was conducted in association with District Health & Family Welfare department, and NPCDCS program at UHTC on 25<sup>th</sup> Jan 2020. Program was inaugurated by Dr. Raghavan (District officer, NPCDCS program) who spoke about the role of ASHA workers in community based NCD screening. Dr. Nataraj K (District officer, NVBDCP) and were also part of the program. Vote of thanks was given by Dr. Balu, PS Professor & Head, Community Medicine, JJMMC. Interactive session on Breast & Cervical cancer was conducted by Dr. Shubha DB (Assistant professor,



Community Medicine, JJMMC). ASHAs underwent screening for common NCD risk factors - BP measurement, RBS, anthropometry, breast cancer screening at JJMMC Niramai breast care centre. Program officers and ASHAs were oriented on various facilities available at UHTC including breast cancer screening, tele ECG & tele ophthalmology. Interns, PGs, teaching & non-teaching faculty of the department were part of the program.

Dr. Shubha DB discussed epidemiology of breast & cervical cancer.

8. Workshop on recent changes in guidelines for management of tuberculosis was conducted for interns posted in Dept. of Community Medicine was conducted by Dr. Mane Kusum, Associate Professor & Dr. Shilpa, (Medical Officer) on 27<sup>th</sup> January 2020.



9. Guest lecture on NCD screening at UHTC was given by Dr Shubha DB, Assistant Professor for healthcare workers of Davangere taluk @ THO office Davangere on 29<sup>th</sup> January 2020.

10. Health check-up of students of DRM college was conducted from 29<sup>th</sup> to 31<sup>st</sup> Jan 2020. Dr Rohit A, Dr Shubha DB, DrSandhyarani J & interns posted to Community Medicine were part of the activity.

### February 2020

1. Health check-up of students of ARG college of Arts & Commerce was conducted on 3<sup>rd</sup> Feb 2020. Event was coordinated by Dr. Mane Kusum (Asso. Professor), Dr. Shubha DB (Asst. Professor) & Dr. Sandhya Rani (Asst. Professor).
2. TB sensitization program 2020 for faculty & PGs of Dept. of Surgery was conducted by Dr. ManeKusum (Associate Professor), Dr. Shilpa (MO, Pulmonary Medicine) and Dr. Santhosh (Pharmacology) on 7<sup>th</sup> Feb 2020.



3. National deworming day 2020 was celebrated on 10<sup>th</sup> Feb 2020 at anganwadi centre in urban field practice area of JJMMC. An interactive session with children, mothers/caregivers were counselled regarding importance of



handwashing, sanitation & hygiene practices & the role of deworming in health of children was conducted. The session was followed by health checkup of adults & children. The activity was coordinated by Dr Vidya GS (Professor, Comm. Medicine), Dr Mane Kusum S (Asso. Professor, Comm. Medicine), Dr Manisha (Post-graduate) and interns.



4. Dr Shubha DB, Assistant professor, was part of Kayakalp Assessment of government health facilities of Shivmoga district as external assessor from 11<sup>th</sup> to 15<sup>th</sup> February 2020.

5. Dr Shubha DB, Assistant professor, was one of the resource person for NCD training of Medical officers, ANMs & other healthcare workers of urban Davangere organized by Davangere district health & family welfare department on 18<sup>th</sup> & 19<sup>th</sup> February 2020 at JJM Medical College, Davangere.

6. State level "Any Body Can Face Exams (ABCFE)" workshop - A workshop post-graduate practical examination was organized from 25<sup>th</sup> to 28<sup>th</sup> February 2020 by Dept. of Community Medicine. A total of 15 PGs from various Medical colleges in Karnataka, Andhra Pradesh & Kerala had registered for the same & the workshop was conducted in 2 batches on 25<sup>th</sup> & 26<sup>th</sup> for 7 PGs and on 27<sup>th</sup> & 28<sup>th</sup> for 8 PGs. Dr Rajeev KH (Professor), Dr Vidya GS (Professor) and Dr Mane Kusum (Asso. Professor) were internal examiners & external PG examiners from different colleges of Karnataka were part of the workshop. Sessions on various aspects of university practical exam were taken by faculty for the participants.



7. Dr Manisha K, Post-graduate, presented oral paper titled '**Immunization Coverage Survey using Geographic Information System (GIS) in urban slums of Davangere**' under the guidance of Dr Shubha DB, Assistant Professor at 64<sup>th</sup> Annual National Conference of Indian Public Health Association organized at AIIMS, New Delhi from 29<sup>th</sup> February to 2<sup>nd</sup> March 2020.

8. TB sensitization program 2020 for faculty & PGs of Dept. of Orthopedics was conducted by Dr Shubha DB (Assistant Professor) and Dr Shilpa (MO, Pulmonary Medicine) on 28<sup>th</sup> Feb 2020.



9. Dr Shubha DB, Asst Professor, was one of the resource person in workshop on fluorosis for ASHA supervisors & female health assistants of Davangere district on 12<sup>th</sup> & 13<sup>th</sup> organized by Dept. of Health & Family Welfare at District Health Office, Davangere.



10. Orientation on CoVID19 to staff nurses of Bapuji Hospital was conducted on 16<sup>th</sup> March 2020 at CHI auditorium by Dr Sandhya Rani & Dr Shubha DB which included infection prevention & control strategies, Disinfection & Bio-medical waste management to be adapted at Bapuji hospital in management of patients.

11. National deworming day 2020 was celebrated on 10<sup>th</sup> Feb 2020 in rural field practice area of JJMMC.

Activities were co-ordinated by Dr. Navinkumar Angadi (Asst. prof) and Dr. Ashwini (Post graduate)



### DEPARTMENT OF OPHTHALMOLOGY

- Dr. Ravindra Banakar attended meeting at NITI AAYOG, NEW DELHI as an Invitee for deliberations regarding "Setting up of New Medical Colleges in private public partnership" on February 25<sup>th</sup>, 2020.
- We observed World Glaucoma Week between March 8-14, 2020. All patients attending the OPD were subjected to Glaucoma screening and patients detected to have glaucoma were started on treatment.
- Dr. Anitha. S. Maiya, Associate Professor and Glaucoma Consultant gave a guest lecture on Glaucoma- The Sneak Thief of Sight at the office of the District Health Officer, Davangere. Her talk highlighted the burden of glaucoma in India, risk factors, simple methods to detect glaucoma by non-ophthalmic medical practitioners and referral of suspected patients to Ophthalmologists. This talk was attended by more than 75 Medical Officers, Optometrists and paramedical assistants of the district.







### DEPARTMENT OF PSYCHIATRY

- Dr. Sudarshan C.Y Professor & HOD of Psychiatry, JJMMC chaired the sessions on "Marriage and Psychiatry" & "Management of Hyperactive Child" at CME organized by Department of Psychiatry S.N. Medical College and H.S.K Hospital, Bagalkot in association with Indian Psychiatric Society Karnataka Chapter on 7<sup>th</sup> & 8<sup>th</sup> March 2020. He was also an examiner for Mock Case Presentation during the CME.
- On 1<sup>st</sup> February a Guest lecture was organised on the topic 'Uses of Ketamine in Psychiatry' at Department of Psychiatry, J.J.M. Medical College, Davangere. Introductory remarks was given by Dr. Anupama M Professor of Psychiatry. Dr. Sudarshan C.Y Professor and HOD of Psychiatry introduced the speaker. Dr. Deepak R.S MD Associate Professor of Psychiatry, Sri Basaveshwara Medical College, Chitradurga addressed the audience, orienting them to mechanism of action, effects & side effects, indications & contraindications of Ketamine usage in Psychiatry. Vote of thanks was given by Dr. Hemavathi Senior Resident. Dr. N. Mruthyunjaya Associate Professor of Psychiatry SSIMS&RC, Davangere, Residents from Department of JJM Medical College and SSIMS&RC along with interns participated in the program. Dr. Shamshad Begum, Professor of Clinical Psychology co-ordinated the program
- Department of Psychiatry organized one day CME Program JJMMCPSY - CME on 16-02-2020. About 99 delegates

comprising of Psychiatry & Radiology Post-graduates from Medical colleges of Karnataka and Practising Psychiatrists including PG alumni from the Department, participated in the program

- Dr. Anupama M, Professor of Psychiatry, JJMMC gave the welcome speech. Introductory remarks were made by Dr. C Y Sudarshan, Organising Secretary of the CME, Prof & HOD, Department of Psychiatry, JJMMC. Dr. K Nagaraja Rao Senior Professor of Psychiatry spoke on the scope of CME program and gave a talk on "Artificial Intelligence in Medical Practice". Dr. S B Murugesh, Principal, JJMMC, presided over the function and appreciated the efforts of the Department of Psychiatry in conducting regular academic and educative programmes. Dr. Anupama M, Professor of Psychiatry and Dr. K Nagaraja Rao, Professor of Psychiatry, chaired the session. Dr. Gopal Das C M, Asso. Prof of Psychiatry, Sri Basaveshwara Medical College, Chitradurga was the KMC Observer for the CME. Vote of thanks was proposed by Sri. Mansoor Basha, Faculty of S.S College of Nursing.

The Organizing Committee of CME Program is thankful to Dr. Shamnur Shivashankarappa, MLA, Hon'ble secretary, BEA, Chairman, JJMMC and Sri S S Mallikarjun, Ex Minister for Horticulture and APMC, Joint Secretary, BEA, for their whole hearted support in conducting the CME program.

### • State Level Psychiatry PG Quiz

Post Graduates from Department of Psychiatry Dr. Vathsalya Gowda and Dr. Divya bagged 3rd prize in the State Level PG Quiz competition held during the CME.



### ACADEMIC BODY ACTIVITIES

- A guest lecture was organised on topic: **MIND TRAINING- A Neuroscientist perspective** on 18/02/2020 from 4:00pm to 5:30pm at Library Auditorium. Dr. Usha Vasthare, Neuroscientist USA was the guest speaker. The programme was presided by Academic Body President and Principal JJMMC Dr. Murugesh S B and Academic Body Secretary Dr. Hanumanthappa A.R. More than 300 delegates attended the program
- A **Symposium on Novel CORONAVIRUS/ COVID19** was conducted on 27-02-2020 at library auditorium. Dr. Vindhya P, Associate professor Department of Pulmonary Medicine discussed the etiology, pathogenesis, clinical features and management. Dr. Hanumanthappa A R Professor and HOD Department of Microbiology spoke about the laboratory diagnosis and Dr. Balu, Professor and HOD department of Community Medicine discussed the preventive and protective measures. The programme was presided by Academic Body President and Principal JJMMC Dr. Murugesh S B and Academic Body Secretary Dr. Hanumanthappa A.R. More than 300 delegates attended the program

### MIND TRAINING-A NEUROSCIENTIST PERSPECTIVE



### UNDERGRADUATE ACTIVITIES



- Poster presentation at National level undergraduate conference held at JNMC, Belagavi 22<sup>nd</sup> -24<sup>th</sup> Feb 2020.



Topic	Presenter	Venue
A Cross Sectional comparative study of glucose values estimated using Glucometer and by Laboratory method using semi- autoanalyzer	Harshita P 2 <sup>nd</sup> MBBS	ANASTOMOSE 2020, National Level Undergraduate Conference, JNMC, Belagavi
Perception of medical students regarding early clinical exposure	LeelashreeV Nayak 2 <sup>nd</sup> MBBS	ANASTOMOSE 2020, National Level Undergraduate Conference, JNMC, Belagavi
Perception of awareness of Biomedical Waste Management among medical students	Chinmayi Hiremath 2 <sup>nd</sup> MBBS	ANASTOMOSE 2020, National Level Undergraduate Conference, JNMC, Belagavi

## NATIONAL VOTERS DAY

The 10<sup>th</sup> National Voter's Day was commemorated at JJMMC on 25<sup>th</sup> Jan, 2020. This day marks the foundation day of the Election Commission of India in 1950. Since the year 2011, the National Voters Day is being observed on the 25<sup>th</sup> of January every year.

The celebration of National Voters' Day recognizes the role of each voter and the importance of every vote in our democracy. The objective is to maximize the enrolment of new voters and encourage participation of the active voters.

The theme for this year was 'Electoral Literacy for a Stronger Democracy.' On this occasion the Principal addressed 1<sup>st</sup> and 2<sup>nd</sup> MBBS students a video message to the students. This was followed by students speaking on the theme of this year and finally administering the 'Voter's pledge' to all the students. This event was coordinated by

Dr. Naveen Kumar Angadi and Dr. Suneel Kumar Reddy with the support of the HODs and staff members.

### Principal's address to the students

*"Dear students*

I'm happy to address you today on the occasion of the 10th National Voter's Day. This day marks the foundation day of Election Commission of India in 1950.

As you all become well-educated professionals it is also necessary to be informed citizens. Awareness makes us truly empowered. An aware citizen can help educating other less informed citizens. It is a part of our social responsibility.

At JJMMC our duty is not just to make you well-trained professionals but also informed and responsible citizens of our country. In this regard we have taken our role seriously and have established Electoral Literacy Clubs and volunteer Campus Ambassadors.



Through their activities we aim to enhance voter enrollment, voter education and voter participation especially among the youth and play a part in establishing a healthy democracy.

Now that you have crossed 18 years of age you have all gained the democratic right to vote. It is your duty now to get yourself a Voter ID and be ready to vote. Further it your responsibility to cast your vote in every election without making excuses. As future doctors I'm sure you will take care of the health of our citizens. However it is also necessary to play your role as electors in having a healthy democracy in our country.

I also congratulate the winners of the speech, essay and poster competition held last year as part of the [SVEEP] Systematic Voter Education and Electoral Participation program.

On this National Voters Day, let us all pledge to vote in every election in the honor of our democratic republic.

Thank you "

### ARTICLE-1

#### POTENTIAL DRUGS FOR COVID-19

SARS-CoV-2- the causative agent of COVID-19 is a single-stranded RNA beta-coronavirus. For about 80% of the infected patients, the disease is mild and mostly restricted to the upper and conducting airways. The main symptoms are fever, cough, fatigue, slight dyspnoea, sore throat,

headache, conjunctivitis and gastrointestinal problems.

About 20% of the infected patients progress to severe and very severe disease. They develop hypoxia, pulmonary infiltrates and progress to ARDS. The pathological finding is diffuse alveolar damage with fibrin rich hyaline membranes and multinucleated giant cells. Aberrant healing leads to more severe scarring and fibrosis than other forms of ARDS. Many cases of fatalities are due to an overreaction of the body's immune system producing a 'cytokine storm' when large numbers of white blood cells get activated and release excessive amounts of inflammatory cytokines (IL-6, IL-1. TNF-?, etc ).

To date, there is no definitive evidence of any effective treatment for COVID-19 other than symptomatic and intensive critical care treatment with oxygen and respiratory support. Many therapies have been proposed and tried, but specifically designed randomized clinical trials are needed to determine the most appropriate evidence-based treatment modality.

The therapies considered are based on efficacy seen in in-vitro studies, human observational studies and extrapolation. The strategy being employed in the search is testing drugs already approved for other indications - a process of repurposing. With such agents approvals are much quicker in case of evidence of benefit. Novel molecules are also being tested but the approval process takes longer if they show efficacy..



The following is an update on the potential drugs for COVID-19. These drugs include specific antiviral drugs and those that counter the pathophysiologic effects of the disease. This list excludes other drugs used in the supportive management of critically ill intensive care patients like systemic corticosteroids, antimicrobials, anti-thrombotic medications, IV fluids, inotropes etc.

## I. DRUGS ACTING ON VIRUS

### 1. REMDESIVIR - Adenosine Nucleoside analogue

**Current Status:** WHO 'Solidarity' Trial for COVID-19, FDA approved with experimental status for COVID-19

Previously tried against Ebola virus

**Mechanism:** Inhibits RNA-dependent RNA polymerase necessary for virus replication

**Studies done:** Preclinical Studies on related Coronavirus infected animals [SARS, MERS] In human trials (53 compassionate use patients) done without control group nearly two-thirds improved when given remdesivir for up to 10 days

Experimental treatment with Favipiravir for COVID-19 showed better results

### 2. CONVALESCENT PLASMA: Plasma containing antibodies from recovered COVID-19 patients

**Current Status:** F D A approved with experimental status for COVID-19

**Current Use:** been used treat a measles, polio, chickenpox, and SARS

**Mechanism:** The donor antibodies help the patient fight the illness, possibly shortening the length or reducing the severity of the disease.

**Studies done:** Reports of success in China, but no randomized, controlled studies done yet. The plasma recipients showed a very promising response - including decreased viral loads, improved PaO<sub>2</sub>/FiO<sub>2</sub>, decreased body temperature and time to discharge

### 3. LOPINAVIR / RITONAVIR

**Current Status:** WHO 'Solidarity' Trial for COVID-19, Approved for HIV

**Mechanism:** Inhibits viral protease necessary for post translation of cleavage of viral polyprotein into smaller proteins- inhibits viral maturation and infectivity

**Studies done:** In COVID-19 patients the studies have been inconclusive

### 4. INTERFERON BETA-1A - Recombinant Cytokine

**Current Status:** WHO 'Solidarity' Trial for COVID-19

Multiple sclerosis, Hepatitis C [Interferon -alpha]

**Mechanism:** Endogenous Interferons are



the hosts' first line of defense against viruses - effect viral replication at multiple levels [coronavirus also seems to suppress interferon production thereby evading the immune systems]

**Studies done:** Preclinical studies showed reduced viral concentrations in cell cultures by more than 99.99%

Observational studies in China, Australia and Canada showed a reduction in duration of viral shedding

### 5. CHLOROQUINE / HYDROXYCHLOROQUINE and AZITHROMYCIN

**Current Status:** WHO 'Solidarity' Trial for COVID-19

Hydroxychloroquine and chloroquine are used to treat malaria and inflammatory diseases, including lupus and rheumatoid arthritis.

Azithromycin is used to treat bacterial infections

**Mechanism:** Inhibits viral entry by changing the glycosylation of ACE2 receptor and spike proteins on cell surface

Anti-inflammatory effects

**Studies done:** In China and France, small studies provided some indications of possible benefit of chloroquine against pneumonia caused by COVID-19

### 6. EIDD-2801 (New drug molecule)

**Current Status:** Granted permission from the U.S. FDA for patient trials

**Mechanism:** Introduction of Mutations in viral RNA as it replicates making them non infective. Has broad spectrum antiviral activity

**Studies done:** When used as a prophylactic in preclinical studies it reduced incidence of severe lung damage in mice.

When used 12- 24 hrs after infection it reduced the degree of lung damage and weight loss in mice

### 7. CAMOSTAT MESILATE

**Current Status :** Approved for chronic pancreatitis and postoperative reflux oesophagitis

**Mechanism of action:** Blocks TMPRSS-2 (Transmembrane protease, serine 2) inhibiting viral entry

**Studies done:** A clinical trial on impact of camostat on COVID - 19 infections for treatment of COVID - 19 Pneumonia



### 8. FAVIPRAVIR

Current Status: Approved in Japan and China for influenza and for investigational use in COVID-19

Mechanism of action: Viral RNA polymerase inhibitor

Studies done: In China preliminary results showed moderate antiviral effect on COVID-19

### 9. NITAZOXANIDE

Current Status: Wide spectrum antiprotozoal drug (Entamoeba, Giardia)

Mechanism of Action: Blocks maturation of the viral hemagglutinin at the post-translational stage

Studies done: In vitro activity against MERS-CoV and other coronaviruses

### 10. UMIFENOVIR

Current Status: Used for Influenza in China and Russia

Mechanism of Action: Blocks fusion of virus with host cell and inhibition of genome replication

Studies done: A clinical trial showed umifenovir monotherapy is superior to lopinavir/ritonavir in treating COVID 19

### 11. IVERMECTIN

Current Status: Used for parasitic infections [Filariasis, Helminths]

Studies done: In cell cultures single treatment caused ~5000-fold reduction in virus at 48hrs. At a dose of 150 µg/kg, observation of 52 patients on mechanical ventilation appeared to show clinical benefit

Mechanism of action: Said to inhibit the virus from 'dampening down' the host immune system Blocks importin α/β1 and thus transport of viral RNA to nucleus of host cells

## II. DRUGS INHIBITING IMMUNE SYSTEM (CYTOKINE STORM)

- a) Tocilizumab, Sarilumab, Siltuximab, Clazakizumab IL-6 blockers: approved in patients with COVID-19 pneumonia and elevated IL-6 in China
- b) Anakinra: IL-1 Receptor antagonist
- c) Tofacitinib, Baricitinib, Ruxolitinib: JAK blockers: blocks production of cytokines and viral entry
- d) Mavrilimumab: GM-CSF blocker, decreases cytokine production
- e) Thalidomide: wide spectrum anti-inflammatory drug.
- f) Fingolimod: (multiple sclerosis) sequesters lymphocytes in lymph nodes, preventing them from contributing to an autoimmune reaction.



- g) Piclidenoson: Adenosine A3 receptor agonist) - decreases cytokine production
- h) Nivolumab : PD-1 ligand blocker (anti-cancer drug) - blocks programmed death, T cell proliferation and cytokine production.
- i) Pyridostigmine: increases Ach which stimulates alpha-7 nicotinic receptors in immune cells and down regulates them
- j) Colchicine: (anti-gout drug) - blocks microtubule polymerization, migration of lymphocytes to the site of inflammation and decreases cytokine production
- k) Fluvoxamine: antidepressant drug (SSRI)- binds to sigma-1 receptors on leucocytes and decrease cytokine production
- l) Eculizuma: Complement 5 blocker
- m) Aviptadil : VIP analog blocks cytokine production
- n) Sirolimus: inhibits mTOR- Immunosuppressant

### 3) DRUGS STIMULATING IMMUNE SYSTEM

- a) Sargamostim: GM-CSF analog
- b) Levamisole: systemic immunostimulant

### 4) DRUGS ACTING ON ARDS

- a) Sildenafil: PDE-5 Inhibitor, dilates small blood vessels in pulmonary circulation and improves oxygenation

- c) Defibrotide: oligonucleotide with anti-inflammatory and antithrombotic activity
- d) High Dose Vitamin C: antioxidant and anti-inflammatory: high-dose vitamin C infusion along with thiamine and corticosteroids showed a lower death rate in sepsis and ARDS

### 5) DRUGS ACTING ON PULMONARY FIBROSIS

- a) Tetranidine: blocks calmodulin and fibroblast proliferation
- b) Nintedanib: Multi tyrosine kinase inhibitor (approved for pulmonary fibrosis)

### 6) MISCELLANEOUS DRUGS

- a) Deferoxamine: Iron chelating agent, iron plays crucial role in viral replication
- b) Naproxen: NSAID -possibly blocks viral nucleoprotein
- c) Ciclesonide: Inhalational corticosteroid, also has antiviral activity
- d) Tranexamic acid: Plasmin blocker, inhibits cleavage of virus by plasmin at S protein site, reduces infectivity and virulence
- e) Vitamin D: Immunostimulant increases adaptive immunity and cellular differentiation against virus
- f) Lithyronine: Thyroid hormone has anti-apoptotic effect - protects lung tissue from injury

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## NATIONAL VOTERS DAY CELEBRATION



## OBG-WORKSHOP



## REPUBLIC DAY CELEBRATION



## Webinar on Skin Manifestation in COVID-19





**COVID Skin Manifestations**

**MODERATOR**



**Dr. Rohit Batra**  
Consultant Dermatologist  
New Delhi

**SPEAKER**



**Dr. Murlidhar Rajagopalan**  
Sr. Consultant Dermatologist  
Chennai

Date: Friday 29<sup>th</sup> May, 2020 | Time: 03:30 pm - 04:30 pm | [Link to view the live telecast](#)

## ATTENTION PLEASE

The submission for the next issue July 2020 of the News letter should be done before 10<sup>th</sup> July 2020. All the Photos should be in JPEG format. Please send the copy of the material in the form of soft copy as well as hard copy through the department co-ordinator within the stipulated time and cooperate.



## GRADUATION DAY CLASS OF 2014



## KREEDA HELIX2020

