



Vol. 06 Year : 2020

ISIGNESHA

A true signature from CCPSR

An official communique of Chemists College of Pharmaceutical Sciences & Research

ABOUT CCPSR

Chemists College of Pharmaceutical Sciences & Research, Varikoli, Puthencruz, Ernakulam established in 2006 is a venture of Chemists and Druggists Educational Society.

The college has received affiliation from AICTE, PCI and Government of Kerala for D. Pharm and B. Pharm with an intake of 60 students per year. The college is affiliated with Kerala University of Health Science, Thrissur.

Our vision is to emerge as a center of excellence for pharmaceutical education by imparting quality education and modern concepts of scientific and technical knowledge with professional ethics and human values.

Our mission is to educate and inspire a diverse group of future pharmacists and researchers to meet the global professional needs. Develop student's values and attitude, leadership skills, communication skill and team spirit for value based wholesome life. Create an effective interface with research, industry and community to make education responsive in accordance with ethical principles and standards of practice.

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From the **PRESIDENT** Mr. A. N. Mohanakurup

I, on behalf of the managing committee of Chemists and druggists educational society, Kerala congratulate and value the efforts of Ms. Sreelakshmi and her team for bringing out the sixth edition of 'ISIGNESHA', the platform aimed to communicate with each other & express own views and ideas with fellow students and faculty for overall benefits. In my opinion, after the spread of COVID-19, people gradually started to understand the contribution of the pharmacists and services rendered by pharmacy profession right from discovery of new molecules to dispensing of medicines.

Responsibility of each one connected with pharmacy profession from students to scientists has increased manifold and all of them are expected to work hard to sustain and serve the society as the custodian of their healthcare. I am sure that the students and faculty of CCPSR shall own the responsibility through 'ISIGNESHA' and I wish all success and support to your endeavours.

From the **PRINCIPAL** Dr. Gini E. J.



It is a matter of great pride and satisfaction to bring out sixth issue of our newsletter 'ISIGNESHA'. The bygone year has been a year of great achievement for us with excellent competency and interest in curricular and co curricular activities. I am confident that this newsletter fosters pride in each student in developing innovations in the field of pharmaceutical education. This newsletter is a medium which effectively share the ideas between staff and students about the research activities and achievements in CCPSR. All the credits and thanks goes to the team work of editorial board in accomplishing this dream. Wishing you all success in the future efforts.

FASTING: GOOD FOR YOU, BAD FOR TUMORS

Many promising cancer drugs being developed will require years to become approved by regulatory bodies and, in most cases, will only be effective for a fraction of patient with specific types cancer. It is there for important to develop broader, complementary strategies that can be translated rapidly into effective therapies. Cycles of fasting for two days in the absence of other treatment are shown to delay the progression of several tumor types and in some cases, to be effective as toxic chemotherapy drugs. The combination of fasting and chemotherapy was much more effective than either alone and delayed the progression of a variety of tumors, including breast cancer and glioma, reduced in the number of organs effected by melanoma metastases, & promoted long term cancer free survival.

Fasting and calorie restriction can slow and even stop the progression of cancer, kill cancer cells, boost the immune system and improve the effectiveness of chemotherapy and radiations. Fasting is voluntarily not eating any food for varying lengths of time. Fasting has been used as therapy for many different conditions as well as a part of spiritual or religious practices throughout history. Risk factors for atherosclerosis and diabetes are markedly reduced in humans following fasting, along with inflammatory markers, like C- reactive protein (CRP) and tumor necrosis factor (TNF).

Adapatation to starvation, requires an organism to divert energy into multiple protective systems to minimize the damage that would reduce fitness. It is thought that these systems can also prolong life and decrease cancer risk. According to a review by Dr. Longo and Fontana of university of southern California, fasting without malnutrition is the most potent and reproducible physiological intervention for increasing lifespan and protecting against cancer in mammals fasting reduces the level of number of anabolic hormones, growth factors and inflammatory cytokines, reduces oxidative stress and cell proliferation enhances autophagy (cell destruction) and several DNA repair processes. Short Term Starvation (STS) or fasting causes rapid switch off cells to protected mode, a fasting based intervention that causes remarkable changes in the levels of glucose, IGF-1 and many other proteins and molecules and is capable of protecting mammalian cells from various toxins, including chemotherapy.

Fasting seems to provide more dramatic results and protection of healthy cells, without the risk of weight loss or immune suppression. It may not be appropriate for everyone, particularly those who are under weight or very ill, and should never be attempted without the supervision of qualified practitioners.

- Ashifa Naha
Anju C Nair
Final year B. Pharm

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"Medicine is the science of experience. It's objective is to eradicate disease by means of remedies. The knowledge of disease, the knowledge of remedies and the knowledge of employment constitute medicine."

Pharmacist is a superhuman who turns bunches of dangerous chemicals into a life saving drug, reasong behind the doctor's success.

Newsletters are the best way to open up your mind as they provide a wonderful medium for students to expose their knowledge, skills & ability every year.

We proudly present the 6th edition of ISIGNESHA before you & express our heartfelt gratitude to all who took great effort.

PHARMACHEM'19

One day National Seminar

Chemists College of Pharmaceutical Sciences and Research (CCPSR), Ernakulam, Kerala had organized a one day National Seminar (PHARMACHEM' 19) sponsored by Department of Biotechnology (DBT) on the topic Antifungal resistance and strategies to control fungal infections: The New Horizon at CCPSR auditorium, on 12th October 2019. The program was started with an invocation prayer by the students. Shri. Rajeev V R, Registrar, Kerala state Pharmacy Council was the Guest of Honour. Dr. Gini E.J., Principal welcomed the guests and highlighted the mile stones of academic journey of our institution in the field of Pharmaceutical Sciences. Mr. M. Sasidharan, Gen. Secretary, CDES., Mr M. M. Kuriakose, Manager, CCPSR & Mrs. Manju Vijayadharn, Ward Member Vadavucode- Puthencruz, Grama Panchayathu presided over the function , followed by lamp lighting. The inaugural session was concluded with a Vote of thanks by Mr. John Thomas, Vice Principal, CCPSR.

The seminar aims with an objective to create awareness among medical and public health communities about fungal infections and its drug resistance. Antibiotic resistance has become one of the global threats. The seminar was enriched with lectures by Dr. Jesil Mathew A, Associate Professor, Dept. of Pharmaceutical Biotechnology, Manipal College of Pharmaceutical Sciences on the topics Emerging and Re- emerging Microbial Infections – A special reference to fungal infection and Limitations of current anti fungal therapy and possible newer targets.

Dr. Raghu Chandrashekhhar H , Associate Professor, Dept. of Pharmaceutical Biotechnology, Manipal College of Pharmaceutical Sciences gave a talk on



Antifungal drug discovery: Traditional and modern approaches.

We had a participation of 19 colleges from various parts of India and around 250 delegates of B.Pharm, M.Pharm, Pharm. D, research scholars & faculties were attended. The seminar was also highlighted with e-poster presentations. The posters were adjudged by scientific committee and the best posters were awarded with cash prize and memento. The lectures were highly informative and were very well appreciated by the delegates.

The valedictory function encompasses with the presence of eminent speakers and the delegates. All the delegates were benefitted by the thought provided by the eminent speakers about the antifungal drug resistance and the responsibilities in treating the invasive fungal infections by using new strategies to control the drug resistant fungal infections. The seminar ended with the National Anthem as a tribute to our Nation.

TIME TO EVICT THE UNWHOLESOME HABITS

Being healthy and staying happy in this fourth generation world is really a big deal. This becomes the best topic for our discussion. Health is not only the absence of disease; it is the state of physical, mental and social well being.

Everyone sleeps, but the sleep becomes a slumber most often. Sleep is a state of altered consciousness or partial unconsciousness from which an individual can be aroused. Sleep deprivation impairs attention, learning and performance. Increasing bright light exposure on day time, reducing blue light exposure in the evening, avoiding intermittent naps, late night food, and caffeine consumption can act upon insomnia. Health depends on nutriment we consume. Health experts always suggest a prescribed course of food, which is popularly known as balanced diet. A balanced diet has become an accepted means to safeguard a population from nutritional deficiencies. We the folks are unaware of the nutritional value of our traditional South Indian nasthas most of which are now internationally accepted.

Being a social animal, human cannot survive without relations. The sound relations he maintains become the ground for his survival. We the fourth generation community are a bit averse in creating relations out of social media, making our outlive even laborious. So keep good relations for your happier life.

Technologies confine a man's days around an easy chair, and makes statins, diuretics, and sulfonyl ureas etc. as part of our meals. The increased number of gymnasia is an alarm for our resurgence. Thus having physical activities compose a healthy physique, which become completed only with an emotionally well balanced mind.

Yoga is being recommended widely as a perfect exercise manual. Everyone is aware of the need for personal hygiene. With other coin side being public health and safety we ourselves make the land inhabitable. Thus cleanliness being our responsibility has to be seriously considered for the fruitful living.

Thoughts make character, and character makes identity. Simply saying, what we think we are. For the creation of a sound identity positive thoughts are inescapable.

Track for the designing of great personalities begin with facing everything and rising even from the ashes. Existing as future promises having a profound vision and a mind to transform can change the world magically.

As part of our outreach programme, we were lucky to have the opportunity to interact with the High school and higher secondary students of the nearby institutions about our topic "Being healthy and happy in this Cyber Era"

The institutions supported for our voyage;

- St. Georges H.S.S, Vennikulam
- Hagia Sophia Public School, Mattakuzhy.
- Mar Athanasius E.M.H.S, Puthencruz
- St. Georges High School, Vennikulam

We extend our heartfelt gratitude to the managements of the institutions and the students who lended ears. Also we sincerely thank our college management and the concerned staff teachers for providing us with the exposure to meet a bunch of enthusiastic and energetic students to express our views on the topic.

-Aleena Rose Johnson
Densy Davis
Final year B. Pharm



ACADEMIC TOPPERS



SHEFNA PS
(2015-19)



ASHIFA NAHA
(2016-20)



SNEHA JOY
(2017-21)



MINNU POULOSE
(2018-22)

What should be changed! Norms or mindset What are we waiting for? DOOMSDAY!

Climate Change is the defining issue of our time and we are at a defining moment. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale. Without drastic action today, adapting to these impacts in the future will be more difficult and costly. There is alarming evidence that important tipping points, leading to irreversible changes in major ecosystems and the planetary climate system, may already have been reached or passed. Ecosystems as diverse as the Amazon rainforest and the Arctic tundra, may be approaching thresholds of dramatic change through warming and drying.

The recent star in climate change campaign Greta Thunberg, a Swedish teenager on her recent campaign pointed out that climate change will have a disproportionate effect on young people whose future will be profoundly affected. She argues that her generation may not have a future any more, because "that future was sold so that a small number of people could make unimaginable amounts of money". She also makes the point that people in the Global South will suffer most from climate change, even though they have contributed least in terms of carbon dioxide emissions. Thunberg has voiced support for other young activists from developing countries who are already facing the damaging effects of climate change. Speaking in Madrid in December 2019, she said: "We talk about our future, they talk about their present."

WHAT'S HAPPENING AND WHY?

Thousands of studies conducted by researchers around the world have documented increases in temperature at Earth's surface, as well as in the atmosphere and oceans. Many other aspects of global climate are changing as well. High temperature extremes and heavy precipitation events are increasing, glaciers and snow cover are shrinking, and sea ice is retreating. Seas are warming, rising, and becoming more acidic, and flooding is becoming more frequent along the U.S. coastline. Growing seasons are longer, and large wildfires occur frequently. Many species are moving to new locations, changes in the seasonal timing of important biological

events are occurring in response to climate change. These trends are all consistent with a warming world and are expected to continue.

Many lines of evidence demonstrate that human activities, especially emissions of heat trapping greenhouse gases from fossil fuel combustion, deforestation, and land-use change, are primarily responsible for the climate changes observed in the industrial era, especially over the last six decades. The atmospheric concentration of carbon dioxide, the largest contributor to human-caused warming, has increased by about 40% over the industrial era.

Greenhouse gas emissions from human activities will continue to affect Earth's climate for decades and even centuries. Humans are adding carbon dioxide to the atmosphere at a rate far greater than it is removed by natural processes, creating a long-lived reservoir of the gas in the atmosphere and oceans that is driving the climate to a warmer and warmer state.

Beyond the next few decades, how much the climate changes will depend primarily on the amount of greenhouse gases emitted into the atmosphere; how much of those greenhouse gases are absorbed by the ocean, the biosphere, and other sinks; and how sensitive Earth's climate is to those emissions.

WHAT ARE THE MAJOR IMPACTS ?

Climate change is affecting the American people in far-reaching ways. Impacts related to climate change are evident across regions and in many sectors important to society such as human health, agriculture and food security, water supply, transportation, ecosystems, and others and are expected to become increasingly disruptive throughout this century and beyond. Climate change affects human health and well-being through more extreme weather

events and wildfires, decreased air quality, and diseases transmitted by insects, food, and water. Climate disruptions to agriculture have been increasing and are projected to become more severe over this century, a trend that would diminish the security of America's food supply.

In some regions, prolonged periods of high temperatures associated with droughts contribute to conditions that lead to larger wildfires and longer fire seasons. For coastal communities, sea level rise, combined with coastal storms, has increased the risk of erosion, storm surge damage, and flooding. Extreme heat, sea level rise, and heavy downpours are affecting infrastructure like roads, rail lines, airports, port facilities, energy infrastructure, and military bases.

The capacity of ecosystems like forests, barrier beaches, and wetlands to buffer the impacts of extreme events like fires, floods, and severe storms is being overwhelmed. The rising temperature and changing chemistry of ocean water is combining with other stresses, such as overfishing and pollution, to alter marine-based food production and harm fishing communities.

Some climate changes currently have beneficial effects for specific sectors or regions. At the same time, however, longer growing seasons, along with higher temperatures and carbon dioxide levels, can increase pollen production, intensifying and lengthening the allergy season. Longer ice-free periods on the Great Lakes can result in more lake-effect snow falls.

Today, these and other aspects of climate change are having increasingly complex and important impacts on the economy and quality of life.

-Sreelakshmi U
Final year B. Pharm

COVID-19

The Outbreak

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is a positive-sense single-stranded RNA virus. It mainly enters human cells by binding to the receptor angiotensin converting enzyme 2 (ACE2).

It is spread among people during close contact, mostly through small droplets. Fever, cough, fatigue, shortness of breath, and loss of smell and taste. While most cases lead to mild symptoms, some progress towards acute respiratory distress syndrome is likely precipitated by a cytokine storm, multi-organ failure, septic shock, and blood clots. Recommended infection prevention measures include regular hand washing, maintaining physical distance from others, quarantine, covering cough and holding unwashed hands away from the face.

Studies estimate each infection results in 1.4 to 3.9 new ones when no members of the community are immune and no preventive measures taken. Like other coronaviruses, SARS-CoV-2 has four structural proteins, known as the S (spike), E (envelope), M (membrane), and N (nucleocapsid) proteins; the N protein holds the RNA genome, and the S, E, and M proteins together create the viral envelope. The spike protein, which has been imaged at the atomic level using cryogenic electron microscopy, is the protein responsible for allowing the virus to attach to and fuse with the membrane of a host cell; specifically, its S1 subunit catalyzes attachment, the S2 subunit fusion.

Initial spike protein priming by transmembrane protease, serine 2 is essential for entry of SARS-CoV-2. After a SARS-CoV-2 virion attaches to a target cell, the cell's protease TMPRSS2 cuts open the spike protein of the virus, exposing a fusion peptide in the S2 subunit, and the host receptor ACE2. After fusion, an endosome forms around the virion, separating it from the rest of the host cell. The virion escapes when the pH of the endosome drops or when cathepsin, a host cysteine protease, cleaves it. The virion then releases RNA into the cell and forces the cell to produce and disseminate copies of the virus, which infect more cells.

The standard diagnostic method is via real-time reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab which uses respiratory secretion to detect the existence of viral RNA fragments. Chest CT imaging can also be useful for diagnosis of people with high likelihood of infection based on symptoms and risk factors. Serology established by a variety of laboratories and companies. A number of laboratories and companies have developed serological tests, which detect antibodies produced by the body in response to infection.

Symptomatic and supportive care is provided as treatment since there is no effective medication for COVID-19. Many experimental therapies with antiviral drugs and convalescent plasma have also been used. There is no vaccine available, but different organizations are actively developing vaccine candidates. There are over 110 prospective initiatives in progress to find a workable cure for SARS-CoV-19. Some have entered the clinical trial stage.

- Sruthy Shaju
Final year B. Pharm

ACHIEVEMENTS



The Logo designed by **Binu R Prasad** (Final year) was selected as the Official Logo of **KUHS Intercollegiate Athletic meet 2019**.

G-PAT QUALIFIERS



Mr. Navas Shereef EM



Ms. Ashifa Naha



Ms. Sruthy Shaju



Ms. Gayathri Gopi