AHALIA
SCHOOL OF PHARMACY

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PHARMA SAGA

ASP News Letter

(A Quarterly E-News Letter)
01st September 2021 - Volume 1, Issue I

Messages

Principal

Dr. T. Subburaju

It is my privilege to release the first ASP newsletter PharmaSaga, which will focus on scientific, arts information, events in ASP and overall pharma related information both in national and international scenario which will help students to know about the pharmacy and plan their future.

"Heart is a very good fertilizer; anything we plant – love, hate, fear, hope, revenge, jealousy – surely grows and bears fruit. We have to decide what to harvest……"

- Swami Vivekananda

Vice Principal

I am very glad that the first newsletter of ASP-PharmaSaga isreleased. I congratulate the editorial committee, Dr. John Wesley, Mrs.Sangami Bharathi and Mr. Padmaraj for their earnest effort to bring out this newsletter. Hope this will not just be a showcase of the news from ASP but also of the students' talents and activities, and achievements of staff. Hence, I request all the students and staff to use this newsletter as a stage to share their experiences, knowledge and activities so that the news from ASP is both entertaining and nourishing. I wish this newsletter to be perpetual.

Dr. A. J. M. Christina

Chief Editor

Dr. John Wesley

It is indeed a great honour to be the editor of the "Pharma saga" and this is truly an interesting and exciting experience. It is an immense pleasure to launch the first edition of Pharma Saga of 2021. A huge 'thank you' to all who contributed the wonderful and inspiring articles, without which there wouldn't have been this newsletter.

This newsletter is intended to be published quarterly in a year. This inaugural issue is a brief account of the important events held up to August 2021. It is expected that wide support for this mission will be provided through the reader's valuable suggestions and comments. This is only a small step towards a long journey.

This maiden issue of newsletter would inspire all of us for a new beginning, enlightening with hope, confidence and faith in each other in the road ahead.....

Happy Reading!

AHALIA SCHOOL OF PHARMACY

Corona virus disease (COVID-19) - A simple Home Remedy for prevention

Dr.T. Subburaju
Principal, Ahalia School of Pharmacy

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus.Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness.

The best way to prevent and slow down transmission is to be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face.

The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow).

Self-care as per WHO…..

Asymptomatic cases, mild cases of COVID-19:

Isolate yourself in a well- ventilated room.

Use a triple layer medical mask, discard mask after 8 hours of use or earlier if they become wet or visibly soiled. In the event of a caregiver entering the room, both caregiver and patient may consider using N 95 mask.

Mask should be discarded only after disinfecting it with 1% Sodium Hypochlorite.

Take rest and drink a lot of fluids to maintain adequate hydration.

Follow respiratory etiquettes at all times.

Frequent hand washing with soap and water for at least 40 seconds or clean with alcohol-based sanitizer.

Don't share personal items with other people in the household.

Ensure cleaning of surfaces in the room that are touched often (tabletops, doorknobs, handles, etc.) with 1% hypochlorite solution.

Monitor temperature daily.

Monitor oxygen saturation with a pulse oximeter daily.

Increasing the immunity of an individual is also very useful to prevent the attack by increasing the ORAC of the body.

What is ORAC?

ORAC is Oxygen Radical Absorbance Capacity. Higher the ORAC, better will be oxygen carrying capacity of blood & lungs oxygen capacity. Our survival is based on our immunity. The simplest way of increasing the immunity is by using spices which are rich in ORAC values.

ORAC Values/ 100gm

Clove	:314,446
Cinnamon	:267,537
Coffee	:243000
Turmeric	:102,700
Cocoa	:80,933
Cumin	:76,800
Parsley	:74,349
Tulsi	:67,553
Thyme	:27,426
Ginger	:28,811

Daily requirement of ORAC

It is estimated that men, who consume an average of about 2500 calories a day need at least 11,000 ORAC units. Women, who eat about 1800 calories per day, should get at least 8,000 units. Based on this information one can develops their own recipe according totheir taste and smell as you like in the home itself by mixing the desired spices in powder form and boil in water and add palm sugar for sweet taste and drink.

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THOUSAND VERSIONS OF YOU

You have shed a thousand skins
to become the person you are today.
And if you ever feel overwhelmed by the many people
you once were, remember, your bones have grown,
but what makes them has never changed.

Drishya
First Semester, ASP

HEAD and NECK

(This article is not a compilation of, anatomical definition of Head and Neck but a description by various writers.)

Dr.A.J.M.Christina
Vice Principal, Ahalia School of Pharmacy

Eyes

The magic of GOD's creation though perceived through this organ
has a big role in the fall of man?

Tina Rose

Nose

Had Cleopatra's nose been shorter
the whole aspect of world would have been altered.
Pascal Pensees II

Mouth

In man it is the gateway of the soul,
in woman the outlet of the heart.

Ambrose Bierce

Tongue

The thick muscle in pink sans a bone,
links the world with varied tones.
Needed for ever to talk and taste,
all wonderful things, but not in haste.

Tina Rose

Ear

It hears, it balances,
the two little studs on it and both sides.

Tina Rose

Neck

An isthmus between trunk and head,
a canal in between makes a man dead.

Christina Ambrose

FATHER OF INDIAN PHARMACY

(A compiled article)

Mahadeva Lal Schroff (1902-1971)

Prof. Mahadeva Lal Schroff, rightly called as the Father of Pharmacy Education in India, departed this mortal world on August 25, 1971, and he certainly remains an idol to all pharmacists working in this country irrespective of their branches and diversity of duties. Prof. Schroff, although not being trained as a pharmacist, gave the right direction not only to pharmaceutical education but also to the industry as well in India with his inclination, understanding, capacity and broad vision.

Born on March 6, 1902 at Darbhanga in Bihar, Schroff had his schooling from Bhagalpur and passed the Intermediate Examination in 1920. He joined Engineering College Banaras Hindu University for his studies and was inspired by the talk delivered by Swamy Satya Deo at BHU in 1921. Encouraged by the call given by the Mahatma Gandhi, Prof. Schroff raised voice against principal Charles A King. Later, Prof. Schroff left India and stayed in China and also 15-16 months in Japan, during which he worked with a newspaper and succeeded in collecting a good amount and then proceeded to America for his higher studies. In 1922, he enrolled for his B.Sc at Chemical Engineering Course at Lowa and earned the coveted scholarship. However, soon he left the institution and joined Cornell University and got his degree in Arts with honours in Chemistry, in 1925.

Further, he obtained his MS in Chemistry and Microbiology from Massachusetts Institute of Technology (MIT) in 1927. After returning to India in 1929, he took up a job with Birla Brothers Ltd. Due to his unhappiness with the trade and self-interest of the society, He momentarily thought of going back to the United States. However, the meeting with Jamnalal Bajaj transformed his attitude towards patriotism for his country and involved himself in the movement for freedom. With the pursuance of J. L. Bajaj he was introduced to the then Vice Chancellor of BHU. Pt. Madan Mohan Malviyaji, who spotted the spirit of education in his eyes and he was invited to join BHU as a staff in an honorary capacity.

"In 1937 Full-fledged three-year B Pharm course was started at BHU for the first time in India"

In 1932, at BHU, Prof. Schroff, with his chemical technology background urged Pt. M.M. Malviyaji to start a separate branch (section) of Pharmaceutical Sciences at BHU. Pt. Malaviyaji realized its importance and Schroff was given the green signal to organise this new discipline in India, for the first time. Prof. Schroff introduced Pharmaceutical Chemistry as the principal Subject in the B.Sc. course in 1932 in BHU. From 1934 an integrated 2-year B.Sc. Course with the subjects - Pharma chemistry, Pharmacy and Pharmacognosy, was introduced, which later from 1937 was turned into a fullfledged three-year B Pharm course at BHU for the first time in India. This was the first and the foremost creation of Prof. Schroff, which earned him the title of the pioneer and Father of Indian Pharmaceutical Education. Soon, Prof. Schroff - in December 1935 - started United Provinces Pharma Association, which soon crossed the borders of UP in 1939 and took the shape of Indian Pharmaceutical Association in 1939 with branches all over the country. He himself edited the Indian Journal of Pharmacy, founded in January 1939. Prof. Schroff very carefully earned the confidence, love and affection of the top intellectuals, scientists and industrialists, doyens of chemistry, technology, pharmacology and medical practitioners, and successfully created the awareness of this science for the development of pharmaceutical education of science and technology in India.

Prof. Schroff started the M.Pharm Education in 1940 at BHU with his efforts. Slowly the pharmacy education sprung up in different places in India. He left BHU in 1943 and joined Birla Brothers as their Chief Chemist and Research Officer and served as Secretary to the Birla Laboratories till 1949 at Calcutta. But the teacher within him made him restless and he was given the position and responsibility as principal at Birla College, Pilani, where for the next five years he organized Pharmacy education at intermediate and degree level successfully. His skill in journalism flourished when he started his own periodical "Indian Pharmacist".

References:
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Dr. John Wesley
Professor,
Dept. of Pharmaceutics

IMPACT OF COVID-19 ON MENTAL HEALTH.

Dr. John Wesley
Professor,
Dept. of Pharmaceutics

The COVID-19 pandemic has forced us to change everything- the way in which we used to interact with people, the way we used to communicate with each other, the way in which we have planned our everyday lives and above all, the way in which we had planned our future. This has serious implications on mental health.

Many people has affected by COVID-19 in multiple ways- thousands are infected and hundreds have died. Many have been affected with depression, anxiety, stress disorders and adjustment problems. We have also seen large number of suicides across the country.

People who are infected with the virus, those who were in quarantineand those who fear the disease all, died by suicide. Many are facing poverty at a scale which we could have never imagined before. Family incomes have crumbled and prosperioty has become a istant dream. Educated and technologically qualified is also facing job loss. The loss of employment in the unskilled and unorganised sector is even worse. These are likely to lead to mental health crisis in our state and in India.

There is no health without a mental health. The following steps will be useful for our healthcare conditions.

We may need to send people to hospitals and to quarantine when needed. But we can remain physically distant but socially and emotionally close. We should remain in constant touch with people either through telephone or various Smartphone applications like WhtsApp, Facebook and Instagram.

* Recreational activities should include reading news papers, books, music and watching Television.
* Encourage regular physical activity like walking or yoga.
* Effort should be made to provide alternate employment opportunities.
* Support the people those who are below the poverty line with adequate food supplies and financial compensation.
* Give priority for the treatment of emotional and mental disorders like depression, anxiety and adjustment problems.
* Universal medical insurance should be made available, to cover the cost of treatment and illness.

Conclusion

The world has never changed before. This pandemic is a war which we have to win, for the humanity to survive and progress. There is no need for pessimism as humans have tackled pandemics in the past and survived. Vaccines are being developed and we will take hold of this novel corona virus disease, just as we have done in fighting small pox, tuberculosis and polio. COVID-19 has also taught us an important lesson-the value of public health and that it should never be neglected.

Myths & Facts about COVID-19 Vaccine

Dr. John Wesley
Professor,
Dept. of Pharmaceutics

Myths	Facts
COVID-19 vaccine can make me sick with COVID-19 	Authorized and recommended COVID-19 vaccines contain killed viruses which cannot make you sick with COVID-19.
I have already had COVID-19 and recovered, I don't need to get vaccinated with a COVID-19 vaccine. 	You should be vaccinated regardless of whether you already had COVID-19. That's because experts do not yet know how long you are protected from getting sick again (reinfection) after recovering from COVID-19.
COVID-19 vaccine will alter my DNA. 	The mRNA from a COVID-19 vaccine never enters the nucleus of the cell. Hence, cannot alter DNA.
COVID-19 vaccine has a potential to cause infertility 	There is currently no evidence that COVID-19 vaccination causes any problems with fertility, including the development of the placenta and fetus.
I Cannot breastfeed my baby after getting COVID-19 vaccination	There is currently no evidence that COVID-19 vaccination causes any problems with breastfeeding. Some experts prefer to get vaccinated so that the baby can also develop immunity against COVID-19.

ADVERSE DRUG REACTIONS

Preetha .S Panicker
Asso. Proffesor,
Dept. of Pharmaceutics

According to WHO ,ADR can be defined as unintended or unwanted or noxious effect of a drug which occurs at therapeutic doses in humans used for the prevention, prophylaxis, diagnosis and treatment of a disease or for the modification of physiological function.

REASON FOR ADVERSE REACTIONS

1.Overdosage of the drug or medication administration error.
2.Therapeutic errors
3.Drug abuse or dependence
4.Sudden withdrawal of drug
5.Bioavailability difference
6.Drug interactions .

1. Overdosage of the drug or medication administration error
   (a) Overprescribing of potent drugs to patients
   (b) Self medication by patients leading to overuse or misuse of drugs leading to therapeutic effect or complication respectively.
2. Therapeutic errors
   With drugs like corticosteroids, digitalis, diuretics, certain antibiotics etc continuing the administration beyond the therapeutic end point may result in adverse drug reactions .This may be due to failure of the physician to monitor the patient taking the prescribed drugs without reporting to the doctor regularly for follow up of treatment and change in dose regimen.
3. Drug abuse or dependance
4. Sudden withdrawal of drug
   Treatment of drugs like corticosteroids and hormones cannot be stopped abruptly in certain cases. They are to be withdrawn by gradually decreasing the dose, otherwise it may lead to adverse reactions or secondary side effects.
5. Bioavailability difference.
   Differance in the bioavailability of same drug from different brands may also cause the adverse reactions .same case with different formulations of same drug, due to the pharmaceutical process involved in them and to the presence of various diluents and excipients used.
6. Drug interactions ADR may result due to drug interactions.

PREDISPOSING OR RISK FACTORS ASSOCIATED WITH ADR

a).Age b.)Sex c.) Dosage of the drug. d.) Duration of therapy e)Genetic factors f) Polypharmacy

a.Age

Incidence of ADR increases with age .Especially the neonates and elderly people are more susceptible to ADRs .This is because of the inefficiency of vital systems of the body involved in metabolism and excretion .

b.Sex

Females are at greater risk to ADRs than males .This may be due to the following reasons

1. Differences in pharmacokinetics and pharmacodynamics between males and females due to the differences in their body physiology.
2. Hormonal make up of males and females differ.
3. Female take more medication than men
4. Due to social reasons ,women volunteers do not come forward for the clinical trials .Hence much clinical research cannot be carried out and ADRs cannot be studied in case of females as thoroughly as in case of males.

c.Dosage of the drug

The dosage of the drug varies for males and females due to differences in their body physiology

Eg.Minoxidil -used in the treatment of Alopecia

Female dose (topical)-4.5%

Male dose (topical)—5%

In case the physician prescribes the wrong dose in females , it may lead to ADRs.

d. Duration of therapy

If the therapy is continued for more than the required period of time ,then it may leads to ADRs.

e.Genetic factors

Due to difference in genetic make up of different individuals ,the effect of a particular drug can be minimal ,average or severe .

Eg;In some poor metabolisers (metabolism rate is low) too decreased activity expresses drug metabolising enzyme CYP2D6.This enzyme is essential for the metabolism of antidepressant drugs .due to the pooractivity of the enzyme CYP2D6,antidepressant drugs cannot be effectively metabolised.This may be due to accumulation of the drug in the body which results in occurrence of ADRs.

f. Polypharmacy

Patients with multiple drug therapy are more prone to develop an adverse drug reaction either due to alteration of drug effect through an interaction mechanism , or by synergistic effect .

The amount of risk associated with multiple drug therapy increases in direct proportion to the number of drugs administered .

g. Multiple and intercurrent disease

Patients with multiple diseases are at an increased risk of developing an ADR due to multiple drug use for their multiple diseases.similarly ,patients with impaired hepatic or renal status

are also at a high risk of developing an ADR to drugswhich are eliminated by these organs.

For example:A patient with decreased renal function who is treated with aminoglycosides is at an increased risk of developing nephrotoxicity unless appropriate dosage adjustement is made.

h. Drug characteristics

Some drugs are highly toxic in nature and patients who are treated with these agents are at an increased risk of ADRs .for example ,nausea and vomiting is a common adverse drug reaction seen in patients treated with anticancer drugs .Also ,patients who are treated with drugs which have narrow therapeutic index such as digoxin and gentacin,are more susceptible to develop ADRs, as a slight increase in the serum drug concentration of these concentration of these drugs may result in drug toxicity.

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REUNION

Alarm ringed by four am
In every home of them
But they aren't sleeping
Until just five minutes
Before it's ringing…..
Checking their phones
For the millionth times
In last six hours of bed,
Some,
Stering over the outside window
Some,
Crawling under the blanket
Halted by the old memories
That had a vintage touch.
Visualizing the old face
Of their beloved ones.
Sun raised like in the past.
And they rewrite finally
In this dawn;
After five decades…..

Thasni .H
3rd semester, B.Pharm

Happiness Always

Dr. B. Lakshminarayanan, (M.Pharm., Ph.D)
Associate Professor, Ahalia School of Pharmacy

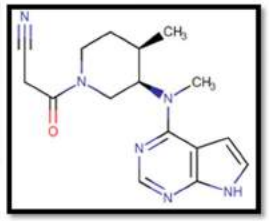
All human beings want to be happy… happy always…..in their life.
However unfortunately, it may not be there in all time.
How can we be happy at all time? How it is possible every minute?
Do you think it is possible?
You may be happy, mostlyfor few minutes or few days…. It is not permanent happiness…Then how to experience happiness always???
This article will explain how we can be happy each and every minute.
After reading this article, you may understand how to be happy always…….
Let's start….. First get to know, what is happiness?
Happiness is a state of mind. It is a type of feeling. Actually it depends on positive emotions and life satisfaction.
You will be happy…, when you think that you are happy or when your mind is feeling happy.
Then when your mind is happy???
When your PRANA level is more, you feel happy. When it is less, you become unhappy or you will not be think to be happy.
Then you may question, what is prana?
Prana is nothing but energy of body and mind (Combination of body strength and mental energy).
How can we increase our prana level?
See you all Soon……

TOFACITINIB

Mrs. Neema K Ramesh
Asst. Professor, Dept. of Pharmaceutics

Tofacitinib, also known as Xeljanz, is a type of drug known as a Janus kinase (JAK) inhibitor. Tofacitinib is a small molecule, not a biologic. Discovered and developed by the National Institutes of Health and Pfizer.
It works by blocking the action of Janus kinase enzymes, which are involved in the inflammation that causes the symptoms of rheumatoid arthritis, psoriatic arthritis and ulcerative colitis.
Common side effects include diarrhea, headache, and high blood pressure. Serious side effects may include infections, cancer, and pulmonary embolism. In 2019, the safety committee of the European Medicines Agency began a review of tofacitinib and recommended that doctors temporarily not prescribe the 10 mg twice-daily dose to people at high risk for pulmonary embolism. The U.S. Food and Drug Administration (FDA) also released warnings about the risk of blood clots. An important side effect is serious bacterial, mycobacterial, fungal and viral infections. In the phase 3 trials of tofacitinib among opportunistic infections, pulmonary tuberculosis (TB) was reported in 3 cases all of which were initially negative upon screening for TB.

Structure:



Weight: Average: 312.3696
Chemical Formula: C16H20N6O
Mechanism of action:
Rheumatoid arthritis is an autoimmune disease characterized by a dysregulation of pro-inflammatory cytokines including IL7, IL15, IL21, IL6, IFN-alpha, and IFN-beta. Cytokines signalling results in tissue inflammation and joint damage by stimulating the recruitment and activation of immune cells via the janus kinase signalling pathway.
Tofacitinib is a partial and reversible janus kinase (JAK) inihibitor that will prevent the body from responding to cytokine signals. By inhibiting JAKs, tofacitinib prevents the

phosphorylation and activation of STATs. The JAK-STAT signalling pathway is involved in the transcription of cells involved in hematopoiesis, and immune cell function. Tofacitinib works therapeutically by inhibiting the JAK-STAT pathway to decrease the inflammatory response. However, there is evidence to suggest that it may also achieve efficacy via other pathways as well.

To whom Tofacitinib is suitable?

Tofacitinib is a long-term treatment. Most people who benefit from this treatment will notice an improvement from the first 12 weeks of treatment.

Tofacitinib can be prescribed by a consultant rheumatologist for adults with rheumatoid arthritis or psoriatic arthritis. It can be used alone or with methotrexate.

Tofacitinib can't be started if:

- your arthritis isn't active
- You haven't tried other treatments appropriate for your condition first.
- You're pregnant
- Planning to try for a baby, or breastfeeding,
- You are over 65.
- repeated or serious previous infections
- shingles
- Disease of the lungs, liver or kidneys
- Heart problems, high blood pressure, high cholesterol or blood clots (deep vein thrombosis or pulmonary embolism)
- Cancer.

When and how to take?

- Tofacitinib is taken as tablets that can be taken with or without food. The usual dose is two tablets a day – one in the morning and one in the evening. But your doctor may suggest taking just one tablet a day.
- If you take more than the recommended dose by mistake, contact your doctor straight away. If you miss a dose, carry on with the usual dose the next day – don't double it.
- If you haven't noticed any improvement in your symptoms after six months, discuss it with your doctor, who may decide to stop the tofacitinib and try another treatment for your condition. Because it's a long-term treatment, it's important to keep taking tofacitinib unless you have severe side effects, even if it doesn't seem to be working at first. It's important to carry on taking it even when your symptoms improve, to help keep your condition under control.

Absorption

74% oral absorption (absolute bioavailability), with peak plasma concentrations (T max) achieved in 0.5-1 hour.

Administration with fatty meals does not alter AUC but reduces Cmax by 32%.

Volume of distribution

Vd= 87L after intravenous administration. Distribution is equal between red blood cells and plasma.

Protein binding

40% mostly bound to albumin.

TOFACITINIB

Metabolism

Metabolized in the liver by CYP3A4 and CYP2C19. Metabolites produced are inactive.

Route of elimination

70% metabolized in the liver by CYP3A4 (major) and CYP2C19 (minor). Metabolites produced are inactive. 30% renally eliminated as unchanged drug.

Half-life

~3 hours

Drug interactions

Abametapir: The serum concentration of Tofacitinib can be increased when it is combined with Abametapir.

Abatacept: The risk or severity of adverse effects can be increased when Abatacept is combined with Tofacitinib.

Abciximab: The risk or severity of bleeding can be increased when Abciximab is combined with Tofacitinib.

Abiraterone: The metabolism of Tofacitinib can be decreased when combined with Abiraterone.

Acalabrutinib: The metabolism of Tofacitinib can be decreased when combined with Acalabrutinib.

Acebutolol: Acebutolol may increase the bradycardic activities of Tofacitinib.

Acenocoumarol: The risk or severity of bleeding can be increased when Acenocoumarol is combined with Tofacitinib.

Acetaminophen: The metabolism of Tofacitinib can be decreased when combined with Acetaminophen.

Food Interactions

Avoid grapefruit products. Dose adjustments are required when administering CYP3A4 inhibitors (grapefruit) and CYP2C19 inhibitors with tofacitinib.

Avoid St. John's Wort. This herb induces the CYP3A4 metabolism of tofacitinib and may reduce its serum concentration. Take with or without food.

Side effects

- The most common are headaches and diarrhoea. Feeling sick is common when taking tofacitinib but may settle with time.
- Because tofacitinib affects your immune system, it can make you more likely to pick up infections. These aren't usually serious and include throat, nose and chest infections, cold sores, urinary tract infections and stomach upsets. Some people may have more serious infections including shingles and skin infections, known as cellulitis.
- If any of these symptoms are severe, you should stop taking tofacitinib and see your doctor straight away.
- People who take tofacitinib may have a reduced white blood cell count, raised cholesterol or raised levels of liver enzymes these problems are usually mild.
- Tofacitinib may increase the risk of blood clots in the legs, called deep vein thrombosis. These can sometimes move to the lungs, which is called pulmonary embolism. The risk is likely to be greater if you've had either of these before. You should seek urgent medical care if you develop swelling of the legs or breathlessness.

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• There may be a slightly increased risk of some cancers in people taking tofacitinib
• Tofacitinib can sometimes cause stomach or bowel problems.
• Rarely, tofacitinib can cause an allergic reaction with sudden swelling, a rash or breathlessness; you should seek medical advice straight away.

How to reduce your risk of infection

• Try to avoid close contact with people you know have an infection.
• Wash your hands regularly and carry around a small bottle of antibacterial hand gel.
• Keep your mouth clean by brushing your teeth regularly.
• Stop smoking.
• Make sure your food is stored and prepared properly.
• Try to keep your house clean and hygienic, especially the kitchen, bathrooms and toilets.

Toxicity

• Minimum lethal dose in rat: 500 mg/kg. Maximum asymptomatic dose in non human primate: 40 mg/kg. Lymphatic, immune system, bone marrow and erythroid cell toxicity was seen in animal studies involving rate and monkeys.
• Doses used in these studies ranged from 1mg/kg/day to 10mg/kg/day, over a duration of 6 weeks to 6 months. Lymphopenia, neutropenia, and anemia is seen in human subjects and may call for an interruption or discontinuation of therapy if severe.
• Reduced female fertility in rats was seen at exposures 17 times the maximum recommended human dose.

"Focus on the fetus for the Future"

M.SANGAMI BHARATHI M.Pharm.
ASST.PROFESSOR,
DEPARTMENT OF PHARMACOGNOSY.

The recent coronavirus pandemic has shown almost everyone on the planet as to what a widespread, global public-health issue looks like. Drawing an analogy from this communicable-disease pandemic, one would better be able to appreciate the silent 'pandemic of non-communicable diseases'(NCDs) – namely diabetes and related conditions like obesity, hypertension and heart disease- that is sweeping across the world, rapidly yet steadily since the last few decades.

The Global Burden

To illustrate the global burden of NCDs, let us take diabetes mellitus as an example. Diabetes is a disease characterized by a sustained increase in blood sugar (medically called as "hyperglycemia") that eventually affects the blood vessels of the body leading to damage of various vital organs including the heart, eyes, kidneys, nerves and brain. On extrapolating the data to the year 2045, that is 25 years from now, the IDF says that almost 700 million people will be living with diabetes all over the world. Adding fuel to the fire, the IDF also points out that for every person who is known to have diabetes, there is another person whose diabetes is yet to be detected. Furthermore, a considerable number of people live with what is called 'pre-diabetes', that is the penultimate stage before overt diabetes.

Searching for the headwaters

While several reasons are ascribed for this rising trend in diabetes and other NCDs, including an aging population, urbanization, genetic predisposition, and nutrition and lifestyle transition, one factor that has not yet received its due attention is diabetes that occurs in the setting of pregnancy. Pregnancy-related diabetes encompasses both newly detected diabetes in pregnancy (termed as 'Gestational Diabetes') as well as women with pre-existing diabetes becoming pregnant (termed as 'Pre-Gestational Diabetes').For the sake of simplicity, we shall use in this discussion, the broader term of 'Hyperglycemia-in-Pregnancy (HIP)' that covers both of these entities.

Programming inside the womb

In the 1980's, the British physician-cum-epidemiologist David Barker put forward his now-famous hypothesis of "fetal origins of adult disease". In his hypothesis, Barker stated that a man's susceptibility to many of the adult-onset diseases had already been programmed while he was still an unborn, developing baby (termed a "fetus") inside his mother's womb. In this intra-uterine (inside the womb) programming, any adverse stimulus, say an increased blood sugar level in case of maternal diabetes, that occurs in sensitive periods of pregnancy, permanently affects the structure, functioning and metabolism of the developing human body at the cellular and tissue levels, thereby predisposing the individual to disease in adult life, later on.

Furthermore, the pancreas of the fetus that secretes the hormone insulin, develops as early as 11weeks of pregnancy. And this organ, the fetal pancreas, is able to respond to the maternal blood sugars present in the blood that goes to the fetus. In case the blood sugar levels are increased as in HIP, the fetal pancreas secretes more and more insulin, which in turn deposits fat in the growing fetus, sometimes evenresulting in a 'big baby' at the time of delivery. When this adversely programmed child grows up to adulthood, he is faced with an unhealthy environment of high caloric foods, lesser physical activity, stress and other similar things. At this point of time, the trigger of the gun that had already been loaded inside the womb, is pulled by the environment. Eventually, the child of the mother with HIP, himself becomes a person with diabetes or pre-diabetes. He also becomes prone to develop other related NCDs like hypertension and heart disease.

Pulling up by the roots

Therefore, a major strategic point for checkmating diabetes and other NCDs lies at the intra-uterine level. To achieve this, action should commence well before conception. In a woman with pre-existing diabetes, blood sugar values need to be maintained closer to normal levels for many weeks prior to conception. She should also maintain a healthy weight. Diabetes that is detected for the first time in pregnancy,mayoccur at anypoint of time during the pregnancy. Medically, the duration of pregnancy can be divided into the first, second and third trimesters. The first trimester comprises the first 3 months of pregnancy. It is during this critical period, the organ-systems of the body begin to form. If any perturbation occurs at this stage, the damage is likely to persist for the life-time. If such a perturbation could be thwarted at the earliest, say by achieving good blood sugar control in the mother in case of pregnancy-related diabetes, the risk of future obesity, diabetes, hypertension and heart disease in the offspring could be minimized. By the time a woman realizes that she is pregnant, she might have already been five or six weeks into the pregnancy. Therefore, the pressing need is that the pregnant woman be screened for diabetes at her very first visit to the maternity clinic or the point of first-care. The present national recommendation advocated by the 'Diabetes in Pregnancy-Study Group of India' (DIPSI) emphasizes on, and calls for testing for diabetes in all pregnant women in the early weeks of pregnancy. Once pregnancy-related diabetes is detected, further management by medical nutrition therapy and if necessary, with insulin therapy will follow. The earlier, the better!

NOSH -Aspirin: Nitric Oxide-Hydrogen Sulfide-Releasing Hybrid: A New Class of Anti-inflammatory Pharmaceuticals

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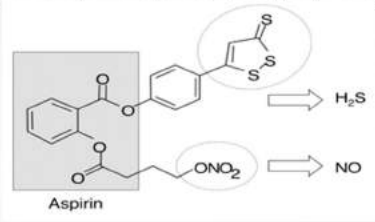
Dept. of pharmaceutical Chemistry

Aspirin is chemopreventive; however, side effects preclude its long-term use. A series of new hybrids of aspirin (ASA), bearing both nitric oxide (NO) and hydrogen sulfide (H2S)-releasing moieties were synthesized and designated as NOSH compounds. One arm of the hybrid aspirin releases nitric oxide (NO), which helps protect the stomach lining. The other releases hydrogen sulfide (H2S), which the researchers have previously shown enhances aspirin's cancer-fighting ability.

Its potency was as much as 15,000 times greater than existing NO-aspirins and 80-fold more than those that incorporate H2S. Only 24 hours after treating a culture of cancer cells, the NOSH-aspirin demonstrated 100,000 times greater potency than aspirin alone. The upshot is that a drug based on this hybrid would [illegible] minimizing or potentially eliminating its side effects.



Aspirin

NOSH-1 (4-(3-thioxo-3H-1,2-dithiol-5-yl) phenyl 2-((4-(nitrooxy)butanoyl)oxy) benzoate); NOSH-2 (4-(nitrooxy)butyl (2-((4-(3-thioxo-3H-1,2-dithiol-5-yl)phenoxy)carbonyl)phenyl)); NOSH-3 (4-carbamothioylphenyl 2-((4-(nitrooxy)butanoyl)oxy)benzoate); and NOSH-4 (4-(nitrooxy) butyl 2-(5-((R)-1,2-dithiolan-3-yl)pentanoyloxy)benzoate). The cell growth inhibitory properties of compounds 1–4 were evaluated in eleven different human cancer cell lines of six different tissue origins. These cell lines are of adenomatous (colon, pancreatic, lung, prostate), epithelial (breast), and lymphocytic (leukemia) origin. All NOSH compounds were extremely effective in inhibiting the growth of these cell lines. NOSH-1 was the most potent, with an IC50 of 48 ± 3 nM in HT-29 colon cancer cells. This is the first NSAID-based compound with such potency. This compound was also devoid of any cellular toxicity, as determined by LDH release. NOSH-1 was comparable to aspirin in its anti-inflammatory properties, using the carrageenan rat paw edema model. NOSH-aspirin (NBS-1120) inhibits pancreatic cancer cell growth in a xenograft mouse model.

NOSH-aspirin (NBS-1120) inhibits pancreatic cancer cell growth in a xenograft mouse model:

Pancreatic cancer has poor survival rates and largely ineffective therapies. Aspirin is the prototypical anti-cancer agent but its long-term use is associated with significant side effects. The recent studies in a mouse models says that NOSH-aspirin inhibits the growth of pancreatic cancer cells, while it did not inhibit growth of a normal pancreatic epithelial cell line at the same concentrations. NOSH-aspirin inhibited cell proliferation, caused G0/G1 phase cycle arrest, leading to increased apoptosis. Treated cells displayed increases in reactive oxygen species (ROS) and caspase-3 activity. NOSH-aspirin significantly reduced tumor growth and tumor mass. Growth inhibition was due to reduced proliferation (decreased PCNA expression) and induction of apoptosis.

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"എൻ ജീവിതം"

നാളെ എൻ ജീവിതം എങ്ങോട്ടു നീങ്ങുന്നു-
തുഴയുന്നു കടലിലെ ചെറുതോണിയായി.
പിടയുന്ന ഹൃദയത്തിൽ ഉരുകുന്ന നൊമ്പര -
മോർത്തുള്ള മുറുവിനിനാഴമെത്ര.
കടലിലെ നിധിക്കായി കാത്തുള്ള
സഞ്ചാര സാഫല്യമാവുമെപ്പോൾ.
അലകളും തിരകളും പേമാരിയും
വേനലും കാറ്റും കടന്നുപോയി എന്നാലും
നിഗൂഢത നിറയുന്നു കടലിന്റെ ആഴങ്ങളിൽ.
ചിതറിഎഴുന്നേൽക്കും എന്നുമെൻ ജീവിതം
കണ്ടില്ല പൂകുന്ന പൂവസന്തം.
തേനുറും ഫലിതങ്ങൾ,നിറമുള്ള രാവുകൾ
കടന്നുപോയ് എന്നാലും
കണ്ടില്ല നിധിയെന്ന രാകിനാവ്.
അലയുന്ന ജീവിതം തഴുകുന്ന കടലിൻമേൽ-
അടിക്കുന്ന തിരമാലയായ് രാവുകൾ.
അന്ത്യമായി കണ്ടുഞാൻ തിളങ്ങുന്ന നിധിതന്നിൽ
ഉദിക്കുന്ന ആസ്ഥ്യമാം എൻ ജീവിതം.

-മേഘ.

Antiviral drug 'Clevira' repurposed for treating mild to moderate Covid-19 patients

Sini .T Inasu
Asst. Proffesor
Dept. of pharmacy Practice

In recent days the usage of many herbal formulations for various illnesses has increased. Clevira is one among them which is a polyherbal formulation consisting of many ingredients, which has antiviral activity against HSV-1 and HSV-2.The individual herbal ingredients used are known to have variety of medicinal properties against fever of viral origin and proven to have effective antipyretic, analgesic, anti-viral and immuno regulatory properties. Pre-clinical, Clinical and docking studies have also shown its antiviral activity against fever of viral origin.

The Chennai-based pharma company Apex Laboratories has received Government of India's approval for repurposing its poly-herbal antiviral formulation, Clevira tablets, as an adjuvant therapy for mild to moderate conditions of Covid-19The product was launched in the Indian market way back in 2017 following the outbreak of the dengue fever and it proved effective for curing all viral infections. The herbal formulation will soon be marketed as an adjuvant therapy for patients with mild and moderate symptoms of Covid-19 in India.

According to information from Apex Lab, Clevira is an antiviral formulation for the treatment of various viral infections including fever associated with or without thrombocytopenia. In addition to an antiviral agent, the efficacy of the drug has been proven as analgesic, antipyretic and reversal of thrombocytopenia. The medicine has taken for extensive study by researches and scientists in animal models for its safety aspects and in human subjects in the phase II and III clinical trials. The clinical trial outcomes revealed that Clevira has shown 86 per cent recovery rate on fifth day of treatment in mild to moderate Covid-19 cases.However, on the 10th day it showed hundred percent recoveries. It has been proven that the drug has no side-effects on kidney and liver functions. During the study period of Clevira treatment no disease progression has beennoticed.It was found that Clevira significantly reduced the time taken for clinical recovery, which was noted in terms of reduction in pyrexia or body pain, normalisation of the respiratory rate (less than 24/minute) and improvement in oxygen saturation level (more than 94 per cent).

According to the official, the company will position this as a doctor prescribed drug and not as an over-the-counter sales drug.

The dosage of the drug is one tablet each twice a day after food and the regimen should continue for two weeks.

It is strongly believed that the Indian medicines will reach great heights and hope that a new era will be started with scientifically proven herbal formulations.

Achievements and Publications

Achievement

Congratulations to

Dr. B. Lakshminarayanan, M.Pharm., Ph.D
(Associate Professor, Ahalia School of Pharmacy)
On successfull completion of your
Ph.D. in Pharmacy from Annamalai University

Publications

- **Lakshminarayanan, B.,** Kannappan, N., and Subburaju, T., Evaluation of antidiabetic and antioxidant potential of some novel ethoxylated head of α, β-unsaturated ketones, Res J Pharm and Tech 2020; 13(3): pp. 1397 - 1402.
- Lakshminarayanan, B., Kannappan, N., Subburaju, T., and Kalaichelvan, V.K., Synthesis of Some novel 3-(4-ethoxyphenyl)-5-(4-substituted)-4,5-dihydro-1H-Pyrazole derivatives as a potent antioxidant agents, Int J Res in Pharm Sci 2020; 11(2): pp.1571-1577.
- Lakshminarayanan, B., Kannappan, N., and Subburaju, T., Synthesis and biological evaluation of novel chalcones with methanesulfonyl end as potent analgesic and anti-inflammatory agents, Int J Pharm Sci Res 2020; 11(10): pp. 4974 – 4981.
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- Della Grace Thomas Parambi, FakhryaAljoufi, VikneswaranMurugaiyah, Githa Elizabeth Mathew, SanalDev, B. Lakshminarayanan, Omnia MagdyHendawy, Bijo Mathew. Cholinesterase Inhibitory Activities of Selected Halogenated ThiopheneChalcones, Cent Nerv Sys Agents in Med Chem 2019; 19(1): pp. 1 – 5.
- Otavio Augusto Chaves, BijoMathew, Dari Cesarin-Sobrinho, BalasubramanianLakshminarayanan, Monu Joy, Githa Elizabeth Mathew, Jerad Suresh, Jose Carlos Netto-Ferreira. Spectroscopic, zeta potential and molecular docking analysis on the interaction between human serum albumin and halogenated thienylchalcones, J Mole Liquids 2017; 242: pp. 1018 – 1026.
- B. Lakshminarayanan, K. Kannappan, T. Subburaju, C. I. Sajeeth. GC-MS Analysis and HPTLC fingerprinting profile of hydroalcoholic extract of polygonumbarbatumlinn. leaves, Indian J Pharm Sci 2017; 79(3): pp. 477 – 482.

• **MrS. Neema K Ramesh,** Published a paper on FORMULATION AND EVALUATION OF MUCOADHESIVE TABLET OF PANTOPRAZOLE SODIUM in international journal of recent scientific research, August 2020; 11(08), pp. 39610-39618.
• Pharmacist-Led Interventions on Improving Outcomes in Patients with Diabetes Mellitus: Evidence from the Literature

• **Sini T Inasuand MV.Kumudavalli**
Journal of Drug Delivery & Therapeutics. 2020; 10(4):49-58
• Selected aryl thiosemicarbazones as a new class of multi-targeted monoamine oxidase inhibitors
Bijo Mathew, SeungCheolBaek , Della Grace Thomas Parambi , Jae Pil Lee , Monu Joy , P R Annie Rilda , Rugma V Randev , P Nithyamol , VijithaVijayan , Sini T Inasu , Githa Elizabeth Mathew
Med Chem. Commun : 25 september 2018
• Emerging therapeutic potentials of dual acting MAO and AChE inhibitors in Alzheimer's and Parkinson's diseasesBijo Mathew, Della G. T. Paramb, Githa E. Mathew, Md. SahabUddin, Sini T. Inasu.
Arch Pharm Chem Life Sci. 2019;352:1900177.

AHALIA SCHOOL OF PHARMACY

Achievements and Publications

Publications

Publications of **Preetha .S Panicker**

1. Measurement of Bioadhesive strength of Mucoadhesivebuccalpatches:Design of an In vitro assembly. International Journal of pharmacy and pharmaceutical analysis .volume 2.2016.

2. Comparativestudy on the efficacy of combination inhaled Budesonide plus Formoterolversus Momentosone Furoate plus Formoterolin Asthematic patients. Pharmascience monitor 8(4)2017

3. Formulation and evaluation of sintered matrix tablets of Metformin hydrochloride. Pharma science monitor 8(1)2017.

4. Management of a rare chronic blistering autoimmune skin disease :PEMPHIGUS VULGARIS. Volume7, Issue 1,January2017.

5. Review of Luffaacutangula(L)Roxb:Ethanobotany.phytochemistry, Nutritionalvalue and pharmacological properties. Pharmascience monitor 10(3) ,2019.

6. Pharmacological review of Luffaacutangula (L)Roxb. Journal of pharmacognosy and phytochemistryVolume 9,issue 6,2020.

7. Adverse Drug Reactions. Journal of Hospital pharmacy.15(4)2020.

8. Preparation and Evaluation of polyherbal cold cream. Volume.10,issue 1 ,2021.

9. InsilicoAntiurolithiatic screening of Luffaacutangula (L)Roxb isolated constituents. Indian journal of pharmaceutical science and Research,volume 11,issue 2,2021.

10. Extraction, phytochemical and GC-MS Analysis of Luffaacutangula(L)Roxb. International journal of phytopharmacy Research volume 2,2021.

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Student's Drawing

Sukritha
5th Semester, B.Pharm

Aadithyan .S
1st Semester, B.Pharm

Hiba Fathima
1st Semester, B.Pharm

News and Events

News

Our principal DR. T. Subburaju has visited RICE UNIVERSITY, TEXAS UNIVERSITY, UNIVERSITY OF HOUSTON, BAYLOR COLLEGE OF MEDICINE, USA and interacted with Scientist for the future collaborative research works

Events

1. WEBINAR
INAGURATION OF YAAD (YOUTH AGAINST ALCOHOL AND DRUGS) INSTITUTIONAL COMMITTEE (ASP-YIC)

2. GOVERNER'S VISIT
HONOURABLE KERALA GOVERNER
Dr.ARIF MUHAMMED KHAN
VISITED ASP CAMPUS ON 11TH AUGUST 2021

INDEPENDENCE DAY CELEBRATION

ONAM CELEBRATION

OUR SISTER CONCERNS

Ahalia Health, Heritage & Knowledge Village, Palakkad

- Ahalia Ayurveda Medical College
- Ahalia School of Engineering & Technology
- Ahalia School of Optometry
- Ahalia School of Management
- Ahalia School of Paramedical Sciences
- Ahalia Public School
- Ahalia Foundation Eye Hospital
- Ahalia Ayurveda Medical College & Hospital
- Ahalia Diabetes Hospital
- Ahalia Women & Children's Hospital
- Ahalia Heritage Village
- Ahalia Alternative Energy
- Ahalia Medicine Manufacturing Unit
- Ahalia Money Exchange & Financial Services

Abroad

- Ahalia Hospitals, Abu Dhabi
- Ahalia Medical Centres accross U.A.E
- Ahalia Pharmacies all over the U.A.E
- Dawn Trading, Abu Dhabi
- Ahalia Food Company, Abu Dhabi
- Al Ahalia Money Exchange Bureau, Abu Dhabi

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- Cultural impetus through Ahalia Heritage Village(Off-campus Centre, Kerala Sangeetha Nataka Academy)

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