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Editors' Desk

Dear professional colleague, researcher, and student friends!

We are passing through a crucial moment, while struggling to fight against an unseen enemy so called pandemic COVID-19. Mean time so many challenging tasks surround to us to over come such as global warming, energy crisis, environmental pollutions, and spreading of not only endemic & pandemics, but also to fight against chronic diseases, and dreadly viral infections, etc. to lead a health life.

At the same time, we must not forget our responsibilities as health care professional to create the awareness among the common people as well as scientific community through the dissemination of knowledge required to take the preventive/protective/curative/therapeutic measures against such pandemic, endemic, chronic and/or infectious diseases.

I hope your contributed information through this magazine will open a new platform to the awareness among the scientific community as well as common man to serve the above said purpose.

The editorial board is also thankful to all contributors for sparing their time in collecting the valuable information and sharing with us for releasing this issue. At the same time, we are expecting your support in the form of your contribution to release subsequent issues for the benefit of scientific community and public at large.

With good wishes and regard,

S. C. Dinda

(Editor-in-Chief)

THIS ISSUE CONTAINS

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Sodium-glucose Cotransporter-2 (SGLT2) Inhibitors on Heart Failure (HF)

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Introduction

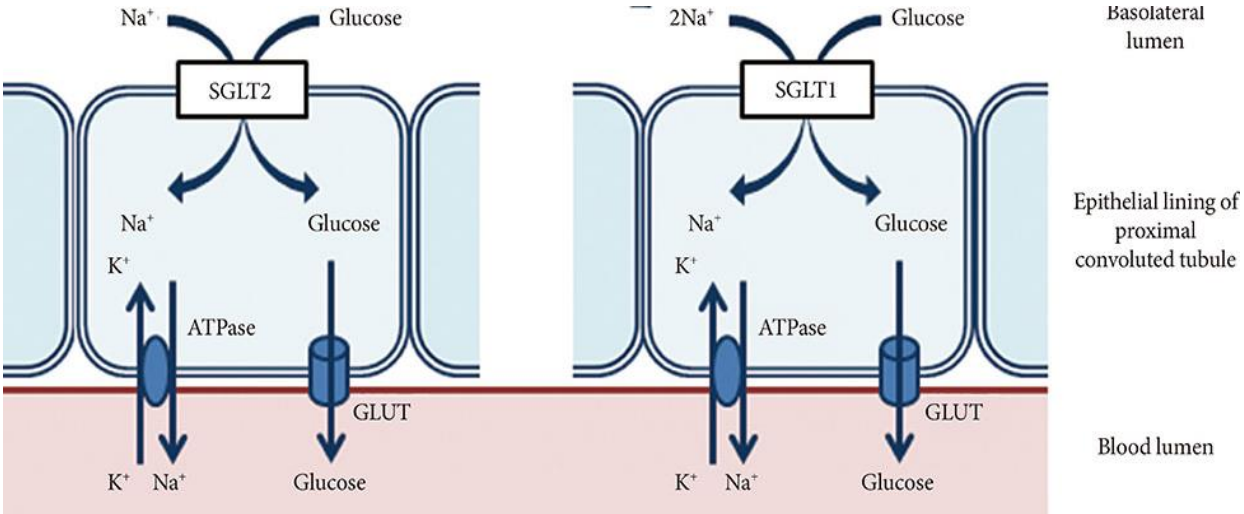
Heart failure is one of the most significant health issues in the world, affecting more than 55 million people globally. Heart failure (HF) is a clinical illness that develops when the body's capacity to pump blood is compromised by a structural or functional heart problem. More than 10 million Indians already suffering from HF, it is expected that number will increase by next decade. A significant risk factor for developing heart failure is diabetes mellitus (DM). Patients with DM are 35% more likely than those without DM to need hospitalisation for HF. Up to 25% of patients with type 2 diabetes (T2DM) experience heart failure (HF), and the prevalence is higher in the elderly.

SGLT Biology

Members of the SLC5 gene family, a branch of a long-extinct superfamily of sodium cotransporters, including SGLT1 & SGLT2. SGLT2 is almost exclusively found in the nephron. The genes produce nearly identical proteins with 15 helices and 675 amino acids. Only the S1 and S2 segments of the proximal tubule have SGLT2 in their luminal membranes. Git quickly absorbs oral SGLT inhibitors into the blood. The early regions of the nephron's luminal side are where the SGLT2 inhibitors attach to SGLT2, they may block up to 75% of glucose absorption. SGLT1 in the late proximal tubule ordinarily salvages glucose that evades reabsorption.

SGLT 2: Treatment of Heart failure (HF) with T2D

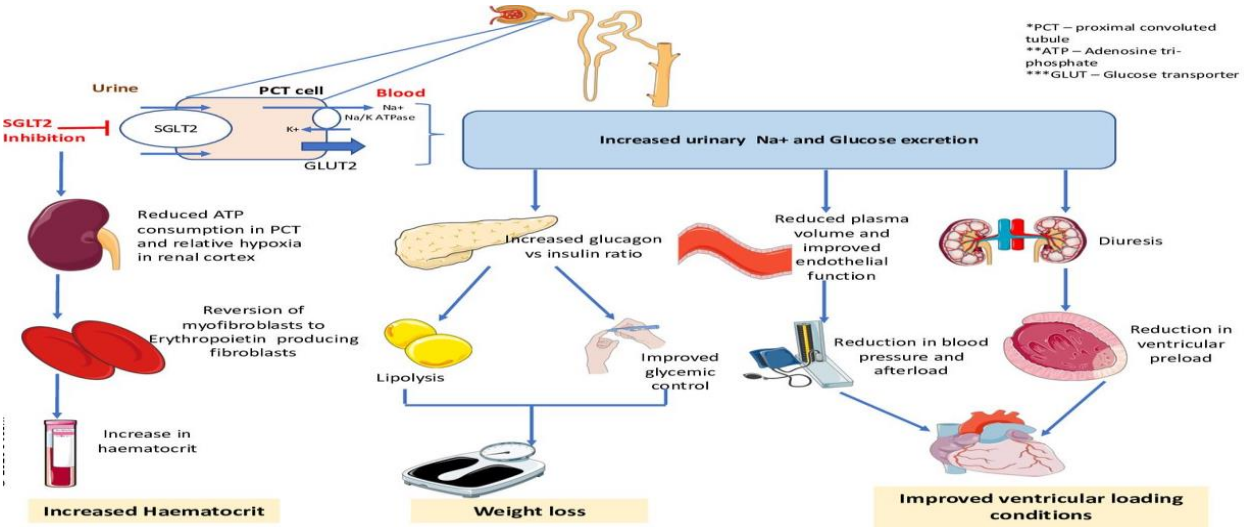
Inhibition of SGLT2 may help avoid initial and subsequent hospitalisation for heart failure and cardiovascular mortality in individuals with type 2 diabetes (T2D), according to previous large-scale cardiovascular outcomes trials. Numerous theories have been put out on the possible mechanisms of advantage of SGLT2 inhibitors. With SGLT2 inhibitors, the risk of cardiovascular and renal adverse events is reduced quickly after medication begins and remains low as long as treatment is continued. Over 85% of the glucose filtered in the glomerulus is reabsorbable by SGLT2. Early natriuresis with a decrease in plasma volume, an increase in erythrocytosis as a result, enhanced vascular function, a drop in blood pressure. By blocking SGLT2 in the



Pic: SGLT function

proximal tubule, SGLT2i increases urine glucose excretion and lowers blood glucose levels. In the beginning, SGLT2i were tested in T2DM patients with either existing atherosclerotic heart disease for their cardio safety. Instead of atherothrombotic events, avoidance of heart failure (HF) hospitalization was the main factor in the decrease in cardiac disease. Independent of cardiovascular risk or existing cardiovascular illness, SGLT2i has been demonstrated to enhance cardiovascular outcomes in diabetic individuals.

Trails:



Pic: Basic Structure of SGLT2i

Empaglifozin

Dapagliflozin

SGLT2i also offered renoprotection by reducing intraglomerular hypertension. Recent studies such as the EMPEROR study and the DAPA- CKD trial have shown that non-DM patients can still have renal and cardiac protection.

MOA of SGLT2 Inhibitors on HF

SGLT-2 inhibitors can also enhance natriuresis and lessen heart failure by decreasing the activity of Na+/H+ exchanger 3 in the proximal tubule. Additionally, SGLT2 inhibitors lessen regional adipose tissue distribution and overall body fat mass, both of which are linked to lowering the heart

Pic: MOA of SGLT2i on Heart

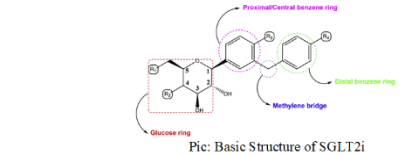
failure. Hypoglycemia is less likely to happen with SGLT2 inhibitors than with some other anti-diabetic medications since their mode of action is independent of insulin production.

SGLT2is with the potential of treating HR: Empagliflozin &Dapagliflozin

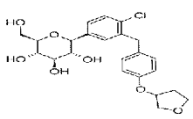
In individuals with T2DM and HF, Empaglifozin & Dapagliflozin has been shown to reduce blood and plasma volume within 15 days (8). SGLT2 inhibition lowers blood leptin levels while raising adiponectin levels, potentially providing cardiac protection. Studies in general suggested that SGLT2 inhibitors could successfully reduce left ventricular remodeling and stop the development of new heart failure.

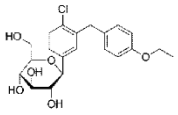
Benefits of SGLT2 Inhibitors

Inhibiting SGLT2 has positive impacts: Blood pressure reduction, an increase in diuresis, an improvement in cardiac metabolism, the prevention of inflammation, weight loss, an improvement in glucose regulation, the inhibition of the sympathetic nervous system, the prevention of negative heart remodelling, the prevention of ischemia, and the inhibition of the cardiac Na/H exchanger results in lower blood pressure.



Pic: Basic Structure of SGLT2i


Empaglifozin


Dapagliflozin

Conclusion

Studies have shown that SGLT2 inhibitors enhance cardiovascular risk regardless of diabetes, including risk of hospitalisation for heart failure (HHF).

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NON-ALCOHOLIC FATTY LIVER MANAGEMENT BY HERBAL MEDICINE

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We are all know that the alcohol is not good for our health, eating alcohol leads to liver cirrhosis, a very serious condition, and a liver transplant is only option. liver cirrhosis cannot be reversible. Ethanol, the active ingredient in alcoholic drinks, is commonly known as “alcohol.’ Small amounts have been linked to health benefits like reducing self-consciousness and shyness, encouraging people to act without inhibition, so powerful effects on our mental health.

In India, 10% of people are affected by fatty liver. A normal healthy liver is not a storage organ of fat, fatty acid synthesis and lipogenesis occur in the liver, and absorbs in the body. Cholesterol and triglycerides are the main lipids that are synthesized in the liver and normally less than 5 % of lipids are stored in the liver which are phospholipids. Fatty liver is a condition when excessive fat deposition in the liver until its capacity to utilize or support results in the deposition of toxic materials in the liver, this condition is known as Hepatic steatosis. In this condition, the weight of the liver increases about 10% to normal weight and causes inflammation. In the normal liver, kuffer cells contain small droplets, but in the fatty liver, the droplet of triglycerol occupies the entire cytoplasm of hepatic cells. So, whenever there is an accumulation of fat in hepatocytes it is called a fatty liver. Non-alcoholic steatotic hepatitis (NASH), a progressive form of non-alcoholic fatty liver disease (NAFLD), is a chronic state of liver inflammation that leads to the conversion of hepatic stellate cells to myofibroblasts. And when that fat accumulation is associated with those inflammatory changes it leads to scar formation in the hepatocytes –so that formation of scaring leads to fibrosis and that condition is called liver fibrosis. And when that liver fibrosis becomes extensive in the chronic condition entire hepatocytes become scared and it leads to the irreversible condition that is called liver cirrhosis. So, these are the various stage of fatty liver damage. The fatty liver and fibrosis can be reversible, but once cirrhosis is developed it cannot be reversible. Fatty liver is two types of alcoholic fatty liver, due to consuming heavy alcohol, more than 15 ml per day, and non-alcoholic fatty liver disease (NAFLD), which is affecting most of the population, 80-90% of obese people, about 90% in

hyperlipidemia,35-50% in Diabetes Mellitus 40-50% in hypertension. Alcohol is metabolized by the liver, and a rapid amount of consuming alcohol leads to an enhancement of the accumulation of fat in the liver. During the process of breaking down, the alcohol liver produces harmful substances that can damage the liver cells, promote inflammation, and weaken the immunity system. About 10-30% of people are affected by non-NAFLD in India. How can we know, that we have NAFLD? It has no symptoms (in 75-85% of people), a silent disease, it has been seen that about 10- 15 % of people have symptoms like pain in the upper right side of their abdomen, vomiting blood, etc. Doctors may use ultrasound effect, liver function test, blood cholesterol test, and fibro scan test to diagnose NAFLD. Herbal medication is used to treat NAFLD. A variety of chemicals is used to treat NAFLD but they always have side effects, on the other hand, herbal medication has high efficiency and low risk of side effects. The herbal medication has taken an impact on the change of fatty change and irritation for treating NAFLD. Recently a few monomers and certain useful blends of herbs have been broadly inspected for their potential works in NAFLD treatment. Some herbs and foods are- Milk, thistle, silymarin is an antioxidant that protects the hepatocyte cell membrane receptors from toxins and helps prevent scarring**. ARTICHOKE**, have antioxidant, and choleretic property to protect the liver and help to generate liver cells. **GARLIC**, natural compounds of allicin, and selenium in garlic aid in cleaning the fat and flushing out toxins from the liver. **AVOCADO** presents glutathione which removes toxins from the liver. **TURMERIC**, have natural antioxidants and helps to reduce fat digestion and fat absorption in our body. **GREEN TEA**, have high-density catechins, which have antioxidant property, and reduce the fat accumulation of the liver and inflammation of the liver. **GRAPEFRUIT** have vitamin C and antioxidant property to flush out the toxins from the liver. **AAMLA**, have vitamin C and antioxidants, helps to detoxify the liver, promotes digestive enzymes, and protects liver cells. **APPLE CIDER VINEGAR**, to lose inflammation in the liver, and loss fat deposition in the liver. **LEMON** stimulates glutathione production in the liver which helps in detoxification. **SEA BUCKTHORNS,** have antioxidants, more than vitamin C than AAMA, to reduce fat accumulation in the liver.

Hence, it is exceptionally imperative to look for ways to avoid and treat NAFLD. the exploratory proof has proposed that several home-grown solutions can avoid steatosis and NAFLD through different fundamental components.

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Novel Therapeutic Approach of Hypertension with Recombinant Human ACE2 Activators

Santu Hazra, Arghya Kusum Dhar
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Introduction

The renin-angiotensin aldosterone system (RAAS) is a hormonal system that is regulating of blood volume, electrolyte balance, systemic vascular resistance which together influence cardiac output and arterial pressure. It consists of three components: renin, angiotensin, aldosterone. Renin, an aspartyl protease, that releases angiotensin in blood and tissue, which further stimulates the release of aldosterone.

Moreover, antihypertensive drugs may have significant side effect currently. Hence, new therapeutic targets and treatment are needed to uncover and exploit to control hypertension.

New therapeutic option

Renin-angiotensin aldosterone system (RAAS) is a complex system that plays an important role in maintaining hemodynamic stability in human body through regulation of arterial blood pressure, water and electrolyte balance. New molecules are identified, they are: recombinant human ACE2, ACE2 activators, angiotensin-(1-7) peptide and non-peptide analogs. The latest clinical studies are encouraging to believe that the new molecule can support the treatment of cardiovascular disease (CVD) as well as cardio metabolic disorder.

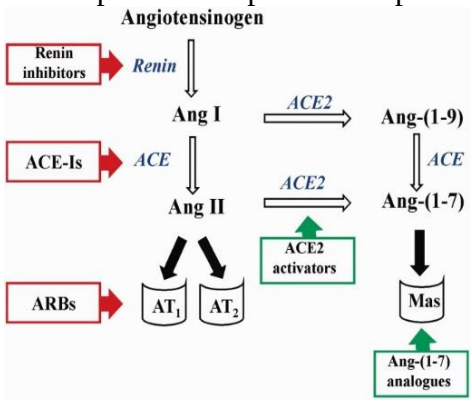
New agents in RAAS	Beneficial effects observed in animal models	Target diseases-potential clinical implication
rhACE2	- Reduced inflammation, renal dysfunction, and glomerulus injury in apo-knockout mice - Reduced hypertrophy, diastolic dysfunction, and myocardial fibrosis in mice with hypertrophy and diastolic dysfunction	- Atherosclerotic renal injury - kidney diseases - Heart failure
ACE2 activators (Xanthenon, DIZE)	- Decrease in blood pressure in SHR rats -Reduction in interstitial fibrosis in rats with pulmonary hypertension - Improvement in the autonomic and cardiac dyes-function in streptozotocin-induced diabetic rats	- Hypertension - Diabetes with cardiovascular autonomic dysfunction

Table 1 New agents modulating RAAS in the experimental data

Recombinant human ACE2 in Hypertension

Angiotensin (Ang)-converting enzyme 2 (ACE2), basically monocarboxypeptidase, active homologue of Angiotensin converting enzyme (ACE). Angiotensin converting enzyme (ACE) inhibits Angiotensin II formation from Angiotensin I, but ACE2 converts Angiotensin I to Angiotensin-(1-9) and Angiotensin II to Angiotensin-(1-7). The enzymatic efficiency of human ACE2 is 400-fold higher with Angiotensin II than with Angiotensin I as a substrate. Overall shows that Angiotensin I cleavage by ACE2 formed Angiotensin-(1-9), has no known biological action but cleavage of Angiotensin II to Angiotensin-(1-7) is a major action of ACE2, which increasing reno protective effect of ACE 2. And this is effective against acute lung injury and cardiovascular disease.

Angiotensin-(1-7) was identified vasodilator, antioxidant, and anti-inflammatory properties in blood vessel with G-protein-coupled Mas receptor. One of the possibilities activating the ACE2-Ang-(1-7)-Mas receptor axis is the use of recombinanthumanACE2(rhACE2) blunted the hypertrophic response, expression of hypertrophy markers, conversed the lung damage during viral infections and Angiotensin II-mediated myocardial fibrosis which increased the Angiotensin-(1-7) levels. The angiotensin-(1-7) activated stimulation of the specific G-protein-coupled Mas



receptor. This Mas receptor further increased phosphorylation of endothelial nitric oxide synthase (eNOS) and increased nitric oxide (NO) release. Nitric oxide activates the soluble isoform of guanylyl cyclase, thereby increasing intracellular levels of cGMP. As a result, cGMP promotes the de-phosphorylation of myosin light chain and leads to the relaxation of smooth muscle cells.

Conclusion:

RecombinanthumanACE2(rACE2) can effectively degrade angiotensin II in vivo and can prevent angiotensin II induced hypertension. It is continuously trying of lowering ang II versus increasing angiotensin-(1-7) by recombinant human ACE2 (rACE2) on blood pressure regulation both acutely and chronically.

So, the efficacy of RAAS affecting drugs in cardiovascular disease (CVD) is widely known, effects could also have related with the activation of other regulatory elements of RAAS. The mechanism of action new molecules action in RAAS allows the alternative therapies and thus reduce the adverse effect of already used drugs.

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AUTOPHAGY AND NEURO-DEGENERATIVE DISEASE

**Shreya Verma*, *Arghya Kusum Dhar*, *School of Pharmacy, The Neotia University.*

INTRODUCTION

Autophagy (auto-self, phagy-to-eat) is an intracellular degradation process where cytoplasmic constituents are transported from lysosomes (the suicidal bag) to cells. Simplifying the above statement, it is a process in which a cell disintegrates and dismantles old, damaged, or abnormal proteins and other substances in its cytoplasm (the fluid inside a cell). Autophagous behaviour of cells leads to the elimination of damaged proteins and organelles thereby counteracting the negative aging effects.

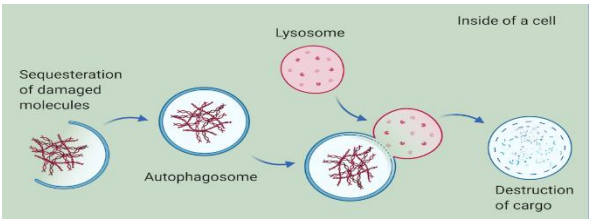

Fig: 1

GENERAL NEED FOR AUTOPHAGY

Take a day-to-day example: evacuating trash is an important chore. When the trash is in overabundance in the kitchen it attracts pests and hence leading mold and bacteria to grow. In the same manner, cells clean themselves; clear away debris. Removal of futile parts marks the essentiality for the healthy function of cells.

If junk piles up in the cell, it can permanently pull the genes henceforth leading to cells difficulty or almost impossible to repair itself and re-grow the structures it needs to survive and thrive. While some cells only last in your body for a few days (RBC, WBC), others are with you for a lifetime that is, neurons (nervous system) and cardiomyocytes (heart muscle).

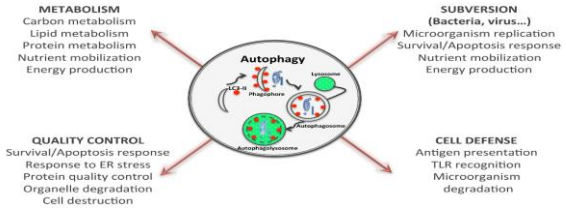

Fig: 2

FUNCTION OF AUTOPHAGY IN NEURODEGENERATIVE DISEASE

In the autophagy–lysosomal system a complex chain of events takes place thereby evacuating misfolded or impaired proteins, and maladjusted organelles. They also contribute to membrane biogenesis and vesicular transport. This cellular machinery is activated by an array of signals: nutrient starvation, oxidative stress, and neuronal excitotoxicity. Through this process, cells degrade the damaged or futile components; restore substrates for energy, and cellular remodeling- which maintains cellular homeostasis. The necessity of the process is understandable as it clears long-lived proteins, aggregated proteins, and damaged organelles.

Autophagy In Several Neurodegenerative Disorders

Alzheimer's disease: The predominant pathological hallmarks of AD are,

- Amyloid beta (Aβ) plaques generation in specific brain areas
- Neurofibrillary tangles in neurons axons
- progressive loss of dendrite synapses
- Lastly neuron apoptosis

The etiology and molecular mechanisms underlying these pathological changes are in adequately decoded. According to recent studies lack of autophagy-lysosome pathway which is crucial to eliminate misfolded proteins or damaged organelles, is likely to precede the formation of Aβ plaques or neurofibrillary tangles.

PARKINSON'S DISEASE

The autophagy pathway plays an important role in the time-to-time removal of lasting proteins and improper function organelles in eukaryotic cells hence preventing later toxicity and cell death. Augmented evidence indicated aggregation of α-synuclein and tau; the consequence of impaired autophagic-lysosomal degradation. Sequentially, α-synuclein and tau impact mitochondrial, autophagic, and lysosomal functions.

MEDICATIONS AVAILABLE:

ALZHEIMER'S DISEASE

Drug (Brand)	Class and Indication	Mechanism of Action	Common Adverse Effects
Donepezil (Aricept)	Cholinesterase inhibitor prescribed to treat symptoms of mild-to-moderate and moderate-to-severe AD	Prevents the breakdown of acetylcholine in the brain	Nausea, vomiting, diarrhea
Galantamine (Razadyne)	Cholinesterase inhibitor prescribed to treat symptoms of mild-to-moderate AD	Prevents the breakdown of acetylcholine and stimulates nicotinic receptors to release more acetylcholine in the brain	Nausea, vomiting, diarrhea, loss of appetite, weight loss
Memantine (Namenda)	NMDA antagonist prescribed to treat symptoms of moderate-to-severe AD	Blocks the toxic effects associated with excess glutamate and regulates glutamate activation	Dizziness, headache, constipation, confusion
Rivastigmine (Exelon)	Cholinesterase inhibitor prescribed to treat symptoms of mild-to-moderate AD	Prevents the breakdown of acetylcholine and butyrylcholine in the brain	Nausea, vomiting, diarrhea, loss of appetite, weight loss, muscle weakness

Fig: 3

PARKINSON'S DISEASE

Groups	Example
Dopamine Agonist Levodopa (L-dopa) Carbidopa Bromoriptine	Levodopa, Benserazide (Madopar) Bromocriptine mesylate (Parlodel)
Indirect Dopamine Agonist (Dopamino-antikolinergik) Deprenyl Amantadine	Selegilline (Jumex)
Antimuscarinic Agent Benztropine Biperidene Orphenadrine Trihexyphenidyl	Benzhexol HCl (Artane) Trihexyphenidyl, Neostigmine metylsulfate, Prostigmine

Fig: 4

CONCLUSION

The proper enhancement of autophagy may be a boon for cell survival in neurons. Thus, autophagy will become a therapeutic target to amend neurodegenerative diseases. The specific therapeutic target of autophagy and the signal pathways involved are also left to be discovered. Hence further exploration of the mysteries is yet to be solved.

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E-pharmacy vs conventional pharmacy

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Introduction:

Now a days internet is an important part of our life. Internet has taken over the world in all aspects. Not sparing any field, everything around us is online, and pharmacy is also one of them.

What is E-Pharmacy?

E-pharmacy is a business that deals with preparation and the scale of prescription and non-prescription drugs as in traditional pharmacies. Some of the E-Pharmacy companies are Pharmacy, 1mg , Netmeds and many others.

How does an E-pharmacy model work?

In E-Pharmacy, the consumers upload the scanned copy of the presentation and places the order for the required drugs on the mobile application or the website. The registered pharmacists at their end analyzed and verified the prescription and accordingly dispense the medicines to the users. In India the E-pharmacy operates and governed under the IT act 2000 and only act as a platform to facilitate connection between consumer and pharmacy store.

Pros of E-Pharmacy

1. Availability of prescription medications.
2. Convenient and time saving.
3. Low cost as compare to offline pharmacy because there is to interference of middlemen.
4. Delivery of medicines at step of home.
5. Access 24 hours a day.
6. Privacy should be maintained.

Cons of E-Pharmacy

1. Illegal or unethical pharmacies sometimes send outdated, substituted, or counterfeit medications.
2. Sometimes an E-pharmacy may not be located or ordered in your place.
3. Risk of drug abuse and misuse is also there.
4. other concerns include potential lack of confidentiality, improper packaging.

Conventional Pharmacy

Pharmacists are the health professionals, who deals with medicines. Counseling of patients, giving perfect dosage of drugs and dispensing of drugs are done by Pharmacists.

Pros of conventional Pharmacy

1. The pharmacists verify the legality safety and appropriateness of the prescription order and check the patient medication record before dispensing the prescription.
2. The pharmacist seeks to collect and integrate information about the patients drug history.
3. The pharmacist can participate in arrangements for monitoring the utilization of drugs.

Cons of conventional pharmacy

1. Sometimes drugs are not available at nearby pharmacy store.
2. The price of drug is more than online pharmacy medicines due to middlemen's profit.
3. Chronic elderly patients who are not able to go to offline store may cause difficulty in finding the store situated in long distance or unrelated to places.

Conclusion:

At the end the above explanation we can conclude that the online pharmacies do not have the personal touch that the physical pharmacy has. you cannot talk to a pharmacist to get advice about side-effects of drug interactions the way you can at local pharmacy. The E pharmacy can be very convenient and less expensive than traditional pharmacies but always keep it in mind the cons of using an online pharmacy.

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Ayurvedic Treatment Of SARS-CoV-2 With Multiple Comorbidities

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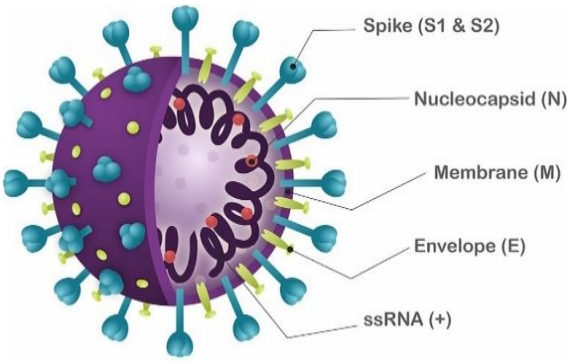
INTRODUCTION:

The novel virus was originally discovered in a Wuhan, China, incident in December 2019. There were attempts to contain it, but they were unsuccessful, allowing the virus to spread to other parts of China and then to the rest of the world. On January 30, 2020, and March 11, 2020, respectively, the World Health Organization (WHO) labelled the outbreak a pandemic and a public health emergency of international concern. A respiratory epidemic known as COVID-19 is brought on by Coronavirus-2 with a severe acute respiratory pattern (SARS-CoV-2). SARS-CoV-2 shares 79.5% structural similarity with the severe acute respiratory syndrome coronavirus and 96.2 structural similarity with the club coronavirus (SARS-CoV). More than a century ago, coronaviruses were identified as 'new respiratory tract viral'. Since COVID-19 is known to cause 5–30% of colds, they were formerly not thought to be especially pathogenic for humans. But in 2002, 2012, and 2019, respectively, new Coronaviruses called SARS- CoV-2.

MATERIALS AND METHODS FOR TREATMENT:

The Ministry of AYUSH has released a guidance statement on several immunity-boosting measures that are supported by Ayurvedic literature, scientific research, and tried-and-true methods for preventing SARS-CoV-2 infection. For the prevention and treatment of COVID-19, Ayurvedic medicine is already being evaluated in India. Since COVID-19 is a new disease, there are enough reports on its use. Ayurveda has a clear understanding of fever (Jwara), and in two of



SARS-CoV-2

its canonical texts, Charaka Samhita and Ashtanga Hrdayam, it takes up the very first chapter of the therapeutic section (Chikitsa). It needs to deal with diagnostic testing (nidanam), pathophysiology (samprapti), classifying, management, medicines, diet and diagnosis. According to his presenting symptoms, it was determined that the fever in this case was Vata Kapha-predominant, necessitating appropriate management. The

patient subsequently tested positive for COVID-19. Moreover, there really is no effort in India to effectively implement Ayurvedic medicines with in therapies of Coronavirus disease. Here, we used molecular docking technique to discover the useful roles of an array of phytochemicals and energetic pharmacological sellers' gift withinside the Indian herbs (Tulsi, Haldi, Giloy, Black pepper, Ginger, Clove, Cardamom, lemon, and Ashwagandha) which might be broadly used withinside the guidance of Ayurvedic drug treatments withinside the shape of Kadha to govern diverse respiration issues which includes cough, cold and flu. Regular intake of this ayurvedic Kadha in session

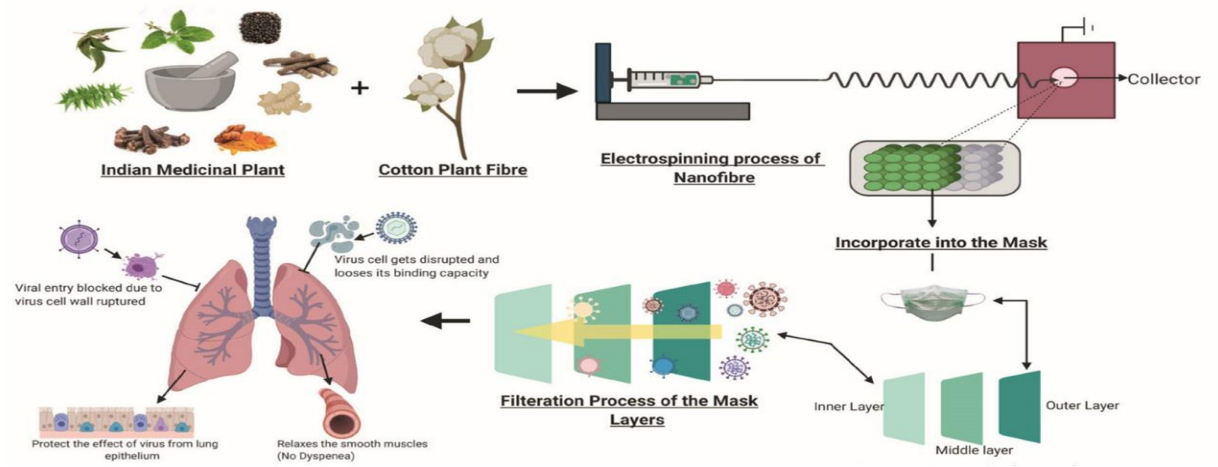


Fig: Ayurvedic medicine against respiratory disease

with the ayurvedic practitioner might also additionally appreciably improve the host immunity and additionally assist withinside the prevention of viral contamination and pathogenicity and decrease disease-severity withinside the inflamed individuals.

COMORBIDITIES:

A case of COVID-19 in an aged obese affected person with diabetes as a comorbidity changed into absolutely controlled via way of means of holistic Ayurvedic drug treatments with no casualties. Remedy of a high-threat case of COVID-19 in an affected person with numerous comorbidities, the use of an integrative remedy plan primarily based totally on ayurveda. After management of Ayurvedic drug treatments, the oxygen saturation of the affected person normalised inside an afternoon and oxygen assist will be gradually withdrawn.

MANAGEMENT OF TREATMENT:

It is especially possible to repurpose traditional Ayurvedic formulations for the management of COVID-19 because of Ayurveda's emphasis on enhancing host factors in the planning of infectious fevers. In this case report, we provide the results of an Ayurvedic intervention provided as supportive care for a COVID-19 patient who needed hospitalization and oxygen assistance. Even in the early phases of oxygen dependency, ayurvedic intervention may be considered in an integrative setting as a first line alternative before administering antiviral, antimalarial, or other similar medications that are being tested experimentally for the management of COVID-19.

CONCLUSION:

Additionally, in silico studies have suggested that many Ayurvedic medicines may be able to stop the SARS-CoV-2 virus from entering cells. It seems quite reasonable and plausible

that Ayurveda can offer supportive therapy for people who have been diagnosed with COVID-19. Even in COVID-19 patients with severe hypoxia, ayurveda should be seen as a first line, affordable therapeutic when they are oxygen dependent, COVID-19 patients can recover with ayurvedic supportive treatment. Allopathic hospitals in India are overflowing with patients as COVID-19 cases rise and place a strain on the healthcare system. In this case, Ayurvedic treatment based on a balanced, alternate approach could fill in any gaps and unmet demands in our approach to the COVID-19 difficulty.

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Health benefits of *ocimum teriflorum* (Tulsi) and its effect against COVID -19

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Ocimum teriflorum commonly known as Tulsi or the holy basil belonging to the family: *Lamiaceae* is an aromatic perineal plant belonging to the Indian subcontinent. It is often described as the "queen of plants" and the "mother medicine of nature" because it's mention in various traditional and folk system of medicine in southeast Asia. In many ancient medicinal systems such as ayurveda and siddha *ocimum teriflorum* has innumerable therapeutic applications such as cardiopathy, gastropathy, verminosis, skin disease etc. Many scientific studies have also revealed that *ocimum teriflorum* has anti-inflammatory property, antipyretic, analgesic, antidibetic, and immunomodulatory activities. Lowering blood pressure, cholesterol, and reducing risk of heart attack are also seen to be exhibited by *ocimum teriflorum.* Most of this evidence are based on in-vitro experimental and a few human studies. It is is also found to be effective against SARS-COV-2. Six inhibitors were found to be effective against SARS-COV-2 through molecular docking. Three of which are from *ocimum (*Tulsi). Those are vicenin (8.97kcal/mol) , isorientin 4'-o-glucoside2"-o-p-hydroxybenoate(8.55kcal/mol) and ursolic acid(8.52kcal/mol). It's antitumorigenic effects are largely unexplored. A few cells culture are animal studies by tumor bearing mice shows that *Ocimum teriflorum* extracts and its flavonoids selectively protect normal tissue against tumoricidal effect of radiation. These studies shows that chemical induced skin, liver, oral, and lung cancer can be prevented by some of its phytochemical licks eugenol, rosmerinic acody, apigenin, luteolin, beta- sitosterol and carnosic acid. These effects are mediated by increasing antioxidant activity, inducing apoptosis, altering gene expression, and inhibiting metastasis. These give us idea about future research and scope for future studies.

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VACCINES FOR CERVICAL CANCER THERAPIES

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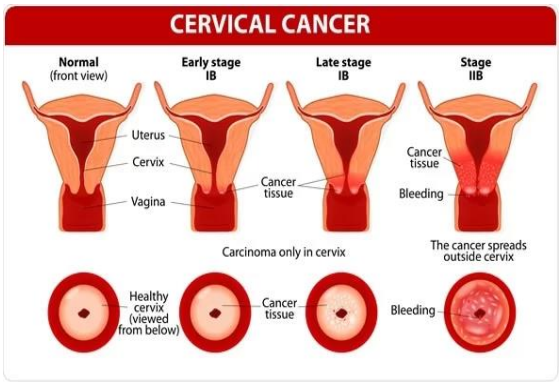
INTRODUCTION:

Cervical cancer is a malignant that occurs in the cervix which is the lower part of the uterus that connects to the vagina. As we know cancer cannot be cure but it is one of the most treatable and pre-ventable forms of cancer as long it is detected early and managed effectively. It is to be listed in one of the top gynaecologic cancers worldwide. There are various strains of the **Human Papillomavirus** (HPV), a sexually transmitted infection, play a role in causing most cervical cancer. When our body exposed to HPV, our immune system typically prevents the virus from doing harm. The virus survives for years which contributes to the process that causes some cervical cells to become cancer cells.

SYMPTOMS OF CERVICAL CANCER:

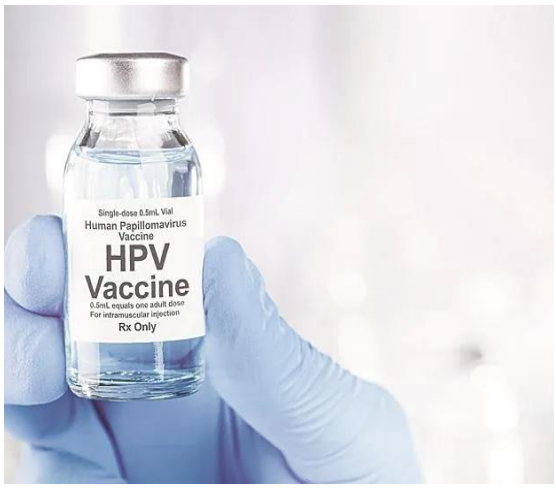
Early-stage cervical cancer generally produces no signs or symptoms but when it becomes more advance it causes vaginal bleeding after intercourse between periods or after menopause, watery & bloody vaginal discharge that may be heavy and have a foul odour and pelvic pain or pain during intercourse. There are two types of cervical cancer; Squamous cell carcinoma which begins in the thin, flat cells (squamous cells) lining the outer part of the cervix, which targets the vagina and Adenocarcinoma which begins in the column-shaped glandular cells that line the cervical canal. There are many reasons of having the Cervical cancer like having multiple sexual partners, early sexual activity, having STD or HIV/AIDS, a weakened immune system, smoking and using of drugs to prevent miscarriage like If a mother took a drug called diethylstilbestrol (DES) while pregnant in the 1950s, which



increase the risk of a certain type of cervical cancer called clear cell adenocarcinoma.

VACCINES USED FOR THE CERVICAL CANCER:

To prevent the growth of cervical cancer many vaccines had been launched like 9-valent HPV vaccine (Gardasil 9, 9VHPV),



Quadeaivalent HPV vaccine (Gardasil, 4VHPV) and bivalent HPV vaccine (Cervarix, 2VHPV). In India, the newly cervical vaccine is Cervavac which is based on VLP (virus-like particle), like the Hepatitis B vaccine and protects by generating the antibodies against the HPV virus L1 protein. It protects 70% of cervical

cancer, 80% of anal cancer ,60% of vaginal cancer, 40% of vulvar cancer and 90% efficacy in preventing HPV-positive oropharyngeal cancers. They additional also prevent some genital warts with the quadrivalent and non-valent vaccines that protect against HPV types HPV-6 and HPV – 11 providing greater protection.

SIDE EFFECTS OF VACCINES

The Cervical cancer vaccine may cause some mild side effects like soreness and the redness at the injection site, fatigue, dizziness, headache, nausea and vomiting. The local reactions like pain (mild to moderate) in 83%, swelling with erythema in 25% and systemic adverse effects such as fever in 4% of the vaccinees. But currently, there are no serious side effects which is related to cervical cancer vaccines. After receiving the vaccine remain sit for 15-20 minutes to avoid some issues.

RIGHT AGE FOR RECEIVING THE VACCINE:

Vaccinating the boys against the HPV can protect the girls from the virus and decrease the transmission of it. The CDC (Center for Disease Control and Prevention) recommends that the HPV vaccine must be given to boys and girls both at the age of 11-12 years old with two doses at six months apart or can be given as early at the age of 9 years on the two dose schedule. The U.S. Food and Drug Administration recently approved that the use of Gardasil 9 for males and females at the age of 9 to 45 years.

CONCLUSION

Time to time routine PAP test can detect precancerous conditions of the cervix, so they can be monitored or treated in order to prevent cervical cancer. Most medical organizations suggest beginning routine PAP test at the age of 21years and repeating them every few years. Practicing the safe sex can also reduce the risk of cervical cancer by taking measures to prevent sexually transmitted infections, such as using a condom every time while doing the sex and limiting the number of sexual partners you have.

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DRUG RESISTANCE: AN IMPEDIMENT IN THE TREATMENT OF TUBERCULOSIS

***Prithu Kuity, Arghya Kusum Dhar**,
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Introduction:

An extremely contagious illness, tuberculosis (TB) poses a threat to worldwide public health, particularly in middle- and low-income nations. caused by the bacteria Mycobacterium tuberculosis (Mtb), which affects the lungs to cause pulmonary TB and other body parts to cause extra pulmonary TB.

Drug resistance is a significant barrier to the treatment of tuberculosis and presents a problem for worldwide public health and medicines. Drug-resistant isolates of M. tuberculosis are growing despite the effectiveness of anti-TB medications. Several mechanisms, including compensatory evolution, epistasis, clonal interference, cell envelope permeability, efflux pumps, drug degradation, and modification, make it easier for Mtb to develop drug resistance.

The existence of multidrug resistant (MDR) strains of Mycobacterium TB, the disease's cause, makes its situation worse. Even more severe types of drug resistance have been documented recently. Multidrug-resistant tuberculosis (MDR

TB) is brought on by an organism that is resistant to at least the two most effective TB medications, isoniazid and rifampin. All people with TB illness are treated with these medications.

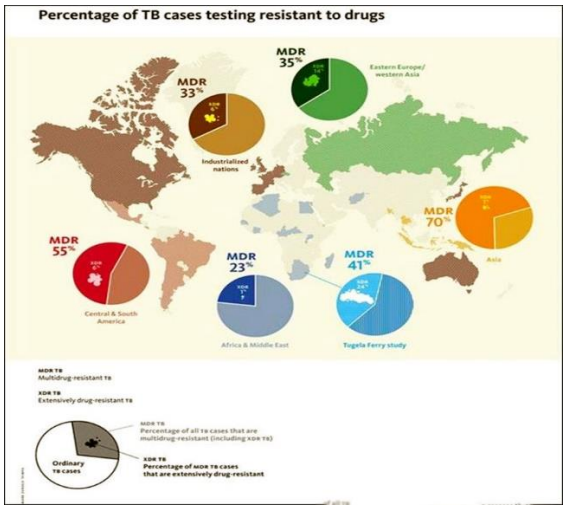
There are several types of TB drugs such as-

1. First line Drugs- streptomycin, rifampicin, isoniazid, pyrazinamide and ethambutol.
2. Second line drugs- Fluoroquinolones, Kanamycin, Capreomycin, Amikacin, Viomycin, Para-Amino Salicylic Acid
3. New anti TB drugs- Bedaquiline, Delamanid, benzothiazinones, PA-824.

Different combinations of four first-line medicines are used to treat TB (rifampicin, isoniazid, pyrazinamide and ethambutol). They make up most of the therapy plans throughout the initial treatment period, which lasts 6 to 9 months.

The failure of TB therapy can be attributed to several factors, including (i)late diagnosis, (ii) improper or delayed administration of effective drugs, (iii) limited availability of less toxic, less expensive, and effective drugs, (iv) prolonged treatment, (v) noncompliance with drug regimen, and (vi) the emergence of drug-resistant TB strains.

Drug resistance in TB is still a result of human activity. It arises because to unintentional gene changes in M. tuberculosis that makes the bacteria resistant to the most used anti-TB medications. The initial cause of this is identified as non-compliance with the prescribed treatment plans. The usual course of treatment for TB entails a six-month regimen of four medications, which is prolonged to 18–24 months when second-line treatments are involved in MDR-TB. This makes adhering to treatment plans exceedingly difficult, and the rates of non-adherence may be significant, leading to subpar results and the spread of MDR strains.



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Harnessing Finger Millets to Combat Osteoporosis after Menopause

Samprikta Deb, ***Arghya Kusum Dhar***, *School of Pharmacy, The Neotia University*

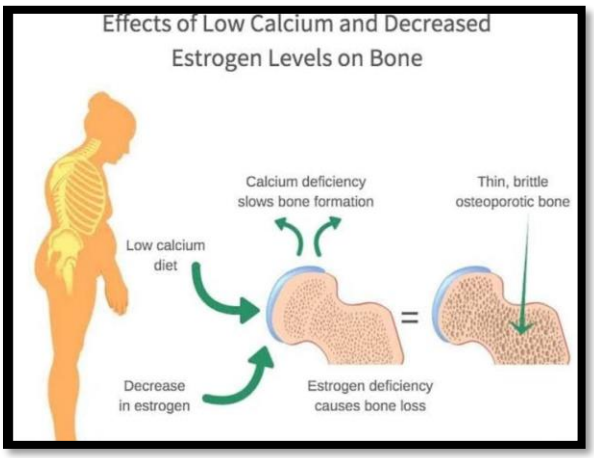
The risk of developing osteoporosis, a condition in which the bones become thin, weak, and brittle normally increases after menopause. One in three women over the age of 50 are affected by this chronic disease. The female hormone estrogen regulates bone metabolism by promoting the activity of osteoblast - cells that forms new bones. After menopause, estrogen level, drops drastically, leading to impaired bone density and quality, a condition that results in making women more susceptible to fracture risk from a non-trivial slip, fall or even spontaneously. On an average, it is estimated that a woman can lose up to 10 per cent of their total bone mass in the first five years after menopause. Calcium (Ca) plays the role of chief nutrient in the process of bone formation. Ca equilibrium in

the body maintains a stable bone mass. Recent research studies have shown that estrogen plays a pivotal role in the regulation of calcium level in the body. Thus, decrease in the level of estrogen in the body especially after menopause, would eventually lead to a decrease in the calcium level in the body leading to decreased bone mass. Harnessing calcium rich foods in daily diet like dairy products can reduce the risk of osteoporosis after menopause. However, lactose intolerance sometimes might make it difficult to rely on dairy products for the fulfilment of calcium requirements. Moreover, women in the underdeveloped regions in the world, solely depend on agriculturally based products to suffice their Ca need. Thus, staple crops that can provide adequate Ca are highly recommended and should be incorporated in the diets of these women. Finger millet proves to be one such Ca rich and locally well adapted crop.

Finger millet is listed amongst one of the most calcium dense foods, with thrice the level of calcium than milk, and accounts to be the richest source of calcium among all the other cereals and millets. Calcium content of finger millet is 344 mg/100 g which is much higher as compared to other cereals such as rice, wheat, barley, and cassava which serves as the staple food in most parts of the world.

CROPS	Ca CONTENT (mg/100) g
Finger Millet	344
Wheat	44
Pearl Millet	42
Rice	33
Barley	20
Little Millet	17
Cassava	16

Only <30% of the consumed Ca is known to be effectively absorbed in the body. Using the in vitro bio accessibility methods, it has been found that uncooked finger millets have 36.6% soluble and 28% dialyzable and bioavailable Ca which is much higher than rice and other above-mentioned crops, proving itself to be an effective source of bioavailable Ca than other staple foods. It possesses all the qualitative and quantitative traits required to serve as a model for calcium bio fortification. Thus, finger millet has a very high potential for addressing calcium deficiency naturally and can prove to be a better alternative to dairy products, other cereals, and millets for fulfilling the calcium requirements of the body.



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Omega 3 fatty acids and vitamin D both can cure autoimmune disease.

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When the immune system of the body unintentionally targets healthy cells, autoimmune disease results. Rheumatoid arthritis, psoriasis, and thyroid disorders are common conditions that become more prevalent as people age, especially in women. The researchers say the clinical importance of these findings is high, "given that these are well-tolerated, non-toxic supplements, and that there are no other known effective therapies to reduce rates of autoimmune diseases."A paper by Han et al. from the British Medical Journal (BMJ) that examines the connection between autoimmune diseases likerheumatoid arthritis and autoimmune thyroid disease, as well as vitamin D and omega 3 fatty acids.It was a US randomised control trial with a little more than 25,000 participants. Omega 3 fatty acids weregiven to one group, and 2000 units of vitamin D daily to another (1000 mg per day). Then, these twogroups were compared to analogous control groups that received a placebo. The participants were then asked to report any autoimmune disorders that they had developed over a five-year period. Various medical examinations confirmed these.The team's analysis of the data revealed that 123 people in the vitamin D
group versus 123 in the control group had autoimmune diseases. Compared to 148 in the control group, 130 people in the Omega 3 group experienced the onset of an autoimmune disease. As a result, Omega 3 and Vitamin D supplements appeared to lower the incidence of autoimmune disorders by 15% and 22%, respectively (the Omega 3 result was, however, not statistically significant).The fact that the result is statistically significant is significant because it implies that, in theory, the Omega 3 result could have occurred solely by chance. Having said that, it appears as though both Vitamin D and Omega 3 may have a protective effect. According to research reported in The BMJ, older adults who supplemented with vitamin D with or without omega-3 fatty acids had a significantly lower rate of autoimmune disease over a 5-year period than those who took a placebo. Researchers have now presented the findings of the first
sizable, national, randomized controlled trial looking at the value of daily vitamin D, omega-3 fatty acid, or both supplements in preventing autoimmune disease at the American College of Rheumatology's ACR Convergence 2021.When compared to not taking supplements, the trial found that taking vitamin D and omega-3 fatty acid supplements for five years decreased the likelihood of autoimmune illness in older persons by 25–30%.

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THE FUTURE OF PHARMACY

***Sk Fazal Ahmed**, *3rd year, 5th semester, School of Pharmacy, The Neotia University*

Exponential change is accelerating disruption across the health care value chain and transforming the future of every field, pharmacy isn't out of it. Clinical and

technology improvements are occurring at a record pace, enlarging the power of artificial intelligence (AI), robotics, and insights derived from radically interoperable data, which states:

This should allow us to shift from "imprecision medicine"[1] to precision

becomes omnipresent and integrated into the smart home, the role of the pharmacy and pharmacist evolves into something that is hard to accept in today's world. We see a convergence of health and wellness, along with an expanded role of telehealth and virtual health care. While on the other hand

Figure 1. Potential disruptions to the pharmacy supply chain

New treatments	Delivery	Pharmacist role
Growth in gene therapy, digital therapeutics, and medical devices changes treatment protocols with 3D printing, allowing for custom dosing of precision generics.	Same-day delivery enabled by bots and drones shifts retail into health destinations that coordinate care with providers with central-fill delivery hubs.	Automation frees up time to spend on virtual and physical care, while regulations shift to allow pharmacists to be the next-generation PCPs.

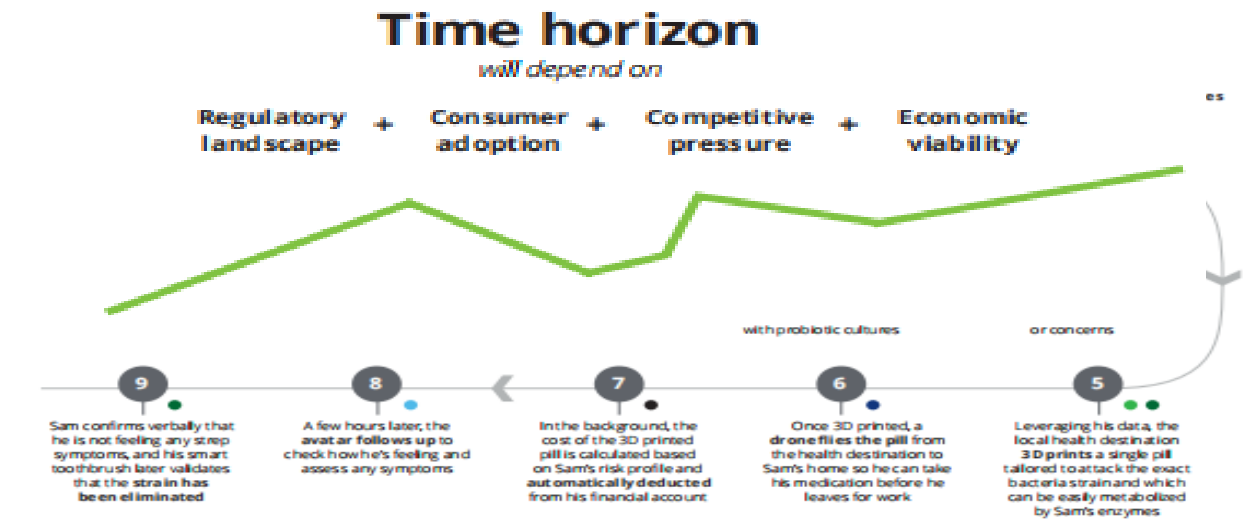
treatments, but it will likely change the role of the pharmacist and the delivery channels we are habituated. This combination may finally allow us to cross the cleft from a fee or-service reimbursement model to a value-based model (figure 1).

The Future Consumer Experience:

To really understand our vision of the future of pharmacy, it is important to begin with the consumer and think about how their health care journey changes. As technology

traditional retail pharmacy experience may no longer exist, but there still a role for coordinated and high-touch care delivered locally—we see antagonism between health care professionals for these roles (RPhs, NPs, PAs, RNs and MDs). There also likely will be people that are not ready to take the benefits of the digitalization (even as costs drop dramatically) and need in-person care. To think about the future and to elaborate it, here is a customer journey for Strep Throat Sam (figure 3):

Figure 2. Several variables affect the rate of change



Future of the Pharmacist

In today's healthcare system, the pharmacist is a trusted, critical, and often underutilized resource. As the pharmacy industry moving towards the use of enabling technologies, pharmacists may find themselves at a professional hurdle: either grow their role's scope and value or face potential disintermediation. After all, in near future, robots will likely to do the dispensing of medication to patients, 3D printers may print combination therapies, and algorithms may address most clinical edits. When everything is getting attached with technology like smart contact lenses that use augmented reality (AR), then there's a possibility that lower-skilled staff such as pharmacy technicians may be able to conduct few basic tasks like visual verification. For many pharmacists, this is a huge opportunity to practice at the top of their license, focusing on being part of the health care team through disease state education, counseling on medications, vaccinations, providing chronic care management alongside physicians, and other services. Fortunately, an increasing demand for physicians,[2] combined with projections about people living longer, should create opportunities for pharmacists to evolve and enlarge their role—perhaps even to become the next generation of primary care providers (PCPs) who treat patients with acute illnesses and manage chronic conditions like diabetes, asthma, and hypertension. That will require various changes, but in United States, pharmacists are increasingly being recognized as providers[3] building on global discussions about pharmacist prescribing[4] We see three specialized paths going forward: digital, medical, and behavioral (figure 4):

Figure 4. Pharmacists' evolving role

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CERAVAVAC - THE GAME CHANGER

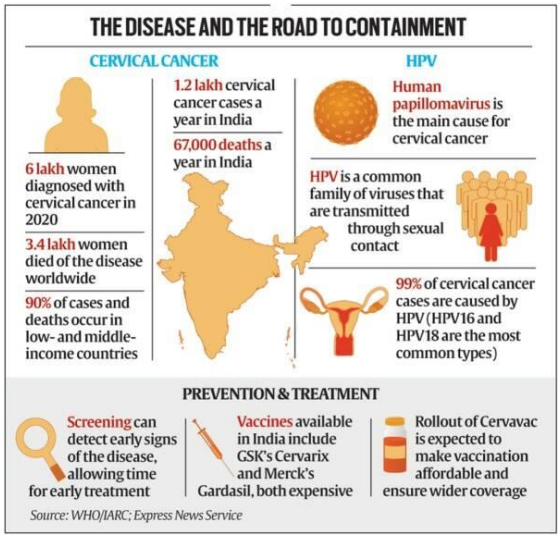
***Sourav Maiti**, *3rd Year, School of Pharmacy, The Neotia University*

Cancer is a disease in which cells divide in a uncontrolled way and spread to other body parts and destroy body tissues. There are several types of cancer. Worldwide cancer is the second leading cause of death. Cervical cancer is the fourth most common cancer in women worldwide. When cancer develops in cervix is called cervical cancer. The most common reason of cervical cancer is HPV (Human papillomavirus),the most common sexually transmitted infection (STI).It is rarely seen in women age under 20.It is mostly diagnosed between the women ages 35–44.

There are several HPV virus types.16,18 are types of HPV related to cervical cancer. Other causes are smoking, marrying before age 18 years, multiple sexual partners, multiple sexual partners of spouse, and multiple childbirths. It is also preventable if it is diagnosed in early stage. Vaccination before affected by virus can prevent this disease. Recently India has achieved remarkable success in prevention of cervical cancer. CERAVAVAC is developed by partnership of

Department of Biotechnology (DBT) and Biotechnology Industry Research Assistance Council

(BIRAC)with the Bill and Melinda Gates Foundation, supported by Serum Institute of India(Pune) for the development of quadrivalent vaccine through its partnership Programme 'Grand Challenges India'. CERAVAVAC is first ever homegrown Quadrivalent Human Papillomavirus vaccine (qHPV), which could help to prevent cervical cancer. Dr Jitendra Singh, Union Minister of Science and Technology announced the scientific completion of this vaccine on 1st September, 2022. The Drugs Controller General of India (DCGI) granted market authorization to (SII) to manufacture the HPV vaccine on 12th July 2022.The trials were started in September 2018 in 12cites in all over India. Just like Hepatitis B vaccination, CERAVAVAC is also based on virus like particle (VLC) and provide protection by producing antibodies against the HPV virus's L1 protein.



CERAVAVAC is effective and fight against 6 11,16,18 types of HPV.It will be provided with a two-dose schedule to girls Age between 9—14. For the age group 15–26 three doses' will be administered. Recently two HPV Vaccines are available in India which are imported from foreign countries. First one is the quadrivalent vaccine (Gardasil Merck), its price ₹2,800 per dose, and second one is a bivalent vaccine (Cervarix from GlaxoSmithKline), its priced at ₹3,299 per dose. But the price of our indigenous vaccine is remarkably cheaper than q foreign vaccins and its price will likely ₹200–400. It will be available in the market later in this year.Above all CERAVAVAC is effective and affordable. Serum Institute of India confirmed the supply of 1crore doses by December 2022 under the National Vaccination Programme.

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SHORT STORIES

GENE-X0007

***SOHOME DAS**, *B.Pharm 3rd year, School of Pharmacy, The Neotia University*

"Year 2107, the world changes magnificently after 2020-2030 after the attack of **COVID-19**. The health science of all world upgrade along with technologies after 2030.In these years the humans of Earth do not affect by any virus or deadly diseases."

Hello, I am Mr. Saswata, now I am leaving Earth by 'SPACE-Y000007' till now I was writing a diary all about my life in what happened with me till that day. My name was given by my grandfather Mr. Som who was the researcher of Earth and the irony is because of that research my grandfather was killed at the age of 105 and my life was in danger. Let explain it briefly I already told my name before I was born in a rich researcher family my all-family members were a researcher. This researcher tradition came from my grandfather he was a pharmacist researcher he researched about human genetics. He wanted to make one type genetic mapping system that help human kind to prevent any kind of diseases and premature death. Guess what he was succeed in this experiment one year before my birth. After my birth when I was only 5 years old, I found that I was different other children. It was all like one kind of rat race they all were like a robot they did not have any kind of emotion for that reason I was always upset that time my grandfather told me story about old day and then I always found that I am a normal person but it was always amaze me that why other children were different from me but my grandfather never answered my that question. There was no opportunity that I asked that type of question to my father and mother because they were out of from Earth for being a space researcher. Last time I saw them when I was only 3 years old. After that they never returned on Earth, they said that the spaceship was crashed in the middle of space and the researcher team did not trace the any parts of spaceship. When I was on my 24I got a job opportunity to work as a researcher of gene developer under government. I developed infant's gene by "GENE-X0007", It was that machine which was invented by my grandfather and his team. After working for one year, I found some interesting facts that was hidden from the civilized people. The government was wanted to make 'SUPER-HUMANS' by the help of this machine. This 'SUPER-HUMANS' is one kind of human that use as a destructive weapon in one word they are immortal being with destructive power whose have no emotions they only know one language destruction. The main fact that many children populations were born without emotion for this brutal experiment. After knowing that fact I contacted with my grandfather and set off for his house with my flying car. After reaching my grandfather house at evening I saw a different scenario in front of my eyes my grandfather's behavior changed with me but my grandmother had a sweet behavior as always. I did not get this fact that day but at the night time my grandmother secretly came at my room and said that my grandfather was waiting for me at garden. I was amazed she said there was no time for amazed come with me. I followed her silently and reached to the garden there I saw grandfather was sat down silently on the bench. After I reached to that place he stood up and apologized to me for morning's cold behavior to me. I was amazed by the surrounding things that I was speechless, grandpa broke the silence and said, "We are being spied by some shadows who work under government wings. It happened for my one wrong decision which I made before 27 years along with my team. We made 'GENE-X0007' for update the human evolution in

another level and we succeed at this experiment. But we all know that one coin has always two sides one good or bad. After this discover government proposed us to make that gene mapping system under their wing for the good for humankind. We accept the proposal but after accept that we came to know the real reason the government wanted to use this machine for making SUPER-HUMANS for their own interest. After knowing that we decided to resign from that sector but it was a late decision having some legal issues they seized our technology and its blueprint. It happened in the peak time this is the time when human population had risen enormously. This was the golden moment for the government they ordered to change gene mapping of all infants for making resistance from any kind of diseases. But the dark side was that they wanted to make 'SUPER-HUMAN' research successful on infants that is why all infants came out without emotions and fully changed into human robot. This was the time when you was born. That time one of my friends was on this sector therefore I had a chance to save you from this brutal thing and I did that and made a false gene report of you. This is the reason why you are different from others. Your parents were not missing they were sent out outer space forcefully. This is the truth what is hidden from you." After told this story he stopped and looked into my eyes and said to leave the house as early as possible. It already dawns so I left the house because I understood that there was any reason. But I did not get one thing that my grandfather and grandmother was healthy when I came other month but in daylight, I saw they had a muscle weakness, when they spoke their speech was slurred. After returning home I found that my room is messy. It looked like there is someone before I reached the house. Suddenly I remembered grandfather told me they were spied by some shadows. I solved the equation it meant I was also spied before I knew. I pretend liked that it was a normal thing. Then I focused on my work between these suddenly I heard a news from a international news channel that researcher traces some kind of space ship in outer space but researcher were denied to give details about this. I did not express any interest about this news because that time I did not know any details about this matter but who knows this news save my life. Coming this matter later, after one week I got a news that my grandfather and grandmother passed away. After reaching their house I found the report of death was normal but their body told other story there were so many black spots on their face being a medical student I understood that it was a new variant poisonous drug which is developed by some medical students. This poison effect on body slowly at first it depressed CNS slowly at first human thought it was normal changed with their body but the main factor is suddenly death. I understood clearly that it was slow poisoning and that's why the change of body was happened in my grandparent's body. While returning home after the funeral two men shown up and said to give them the codeword of AI of 'GENE-X0007'. When I said them that I don't know about any codeword one of them put a mechanical gun on my head. They threated that if I did not tell them codeword they would kill me. Here I requested them that to leave me because I did not know about the code. In this situation when I was like a scary cat that time a sweet tune of flute came for nowhere suddenly, I saw a man came from nearby bushes and took the gun from that guy. The incident happened so fast that we all were confused. When I understood all things, the unknown man hit two persons badly that they failed on ground. When I saw the man carefully, I identified him but how it is possible because in front of me who was stood, he was my father. He said I shall explain all you later now come with me. Unknowingly I followed him and entered a forest. There he told me, "Good to see you

son you are doing well. I know you are in shocked. It is normal, I explain it to you normally we are ordered to stay outer space to search a new planet for that increasing population. In this main time your grandfather told me everything about their black history of their experiment and decided to give me a codeword of this experimental AI which control the 'GENE-X0007'. Now I understood that my father predicted the future that is why he was chose me. According my father's plan I disconnected all connections with Earth secretly but I was connected with your grandfather with secret device that for reason I knew everything. And the good news is we found a planet the other researchers are there now the planet is like earth but a hundred time big than it. In outer space there is your mother who is waiting for us." My father face was not changed because a long time he spent in space. That was the best moment of my life when I hugged my father tightly after 22 years. I agreed to go with them where my mother was waiting for me. Suddenly I saw a small rocket came from under the ground. We entered in the rocket and the engine started automatically. I saw the deep forests were vanished slowly. Now, when we got out from gravitational belt of Earth, I felt some kind of nostalgic feeling but I also feeling excitement to see the new world, my mother, unknown things.
The Earth is like a point now from here.

----- **SOHOME DAS** ----

POEM

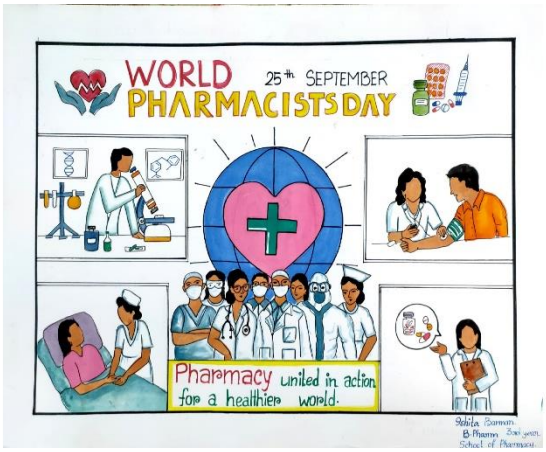
আমার প্রিয় ফার্মাসি

বাবার মতে ভীষণ দরকারি
মা বলে আর কোরো না দেরী ,
তাই আজ ফার্মাসিতে প্রেম এসেছে ভারী।
প্রেম তো নয় সহজ কথা , টিকিয়ে রাখতে লাগে যে ব্যাথা,হ্যাপ বাবাজি তাই থাকে না একা
হ্যাপ ওয়ান,হ্যাপ টু নিয়ে গোটা দুই সেম তার দেখা।
রসায়ন "রা" কাটে না , একটুও বাঁক হাসে না
উফফ বাঃবাঃ সত্যিই বড় জ্বালা, এই জন্য ওঁর উপর আমার ঠিক প্রেম আসে না।
ফার্মাকোলজি আজ হ্যাপের প্রেমে , ইদানিং শুনছি মেডিসিনাল কেমিস্ট্রির ঘন যাতায়াত ওই বেরোসিক ব্যাটা বদমেজাজি রসায়ন দালানে
তাই বাবু আমার ঠিকানা ৯২ নং প্রেমহারা লেনে।
তার উপর এ- সাইন - মেন্ট , লাল গোলাপে নরম কাঁটা, একের পর এক আসছে তেড়ে, দিয়েছে
বুকে বেদম ব্যাথা। তবে চিন্তা নয় ফার্মাসি তোমায় আমি ছাড়বো না একা। ড্রাগটাকে একটু ডিজাইন করে আনব আমি যখন ডাক্তার, পেসেন্ট একসাথে পড়বে প্রেমে তখন।
তখন আমি ল্যাবের চশমা পড়ে, টক্সিসিটি দূরে ফেলে, বলব তোমায় আমি ভালোবাসি চলো এবার কোভিড কালের সম্মানটি নিয়ে আসি।

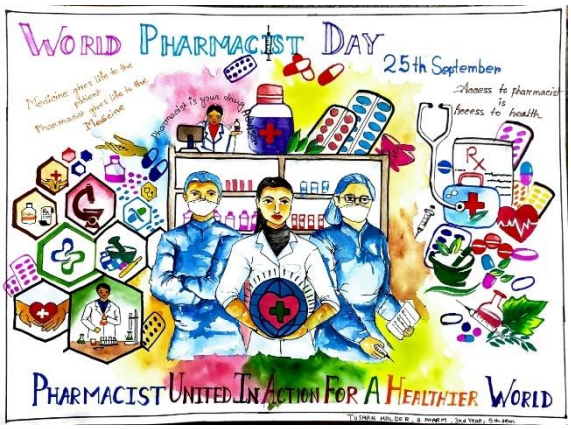
- **Soumyarshi Mukhopadhyay**

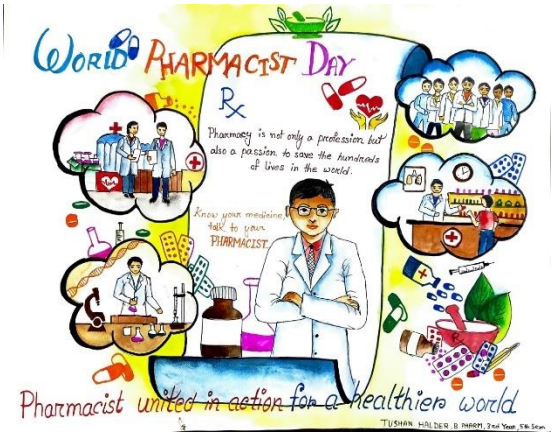
PAINTING


World Pharmacist Day
Pharmacy
United in action for a healthier world


WORLD PHARMACISTS DAY
25th SEPTEMBER
Pharmacy united in action for a healthier world.


WORLD
PHARMACIST
DAY
SEPTEMBER 25


WORLD PHARMACIST DAY
25th September
PHARMACIST UNITED IN ACTION FOR A HEALTHIER WORLD


WORLD PHARMACIST DAY
Pharmacy is not only a profession but also a passion to save the hundreds of lives in the world.
Know your medicine talk to your PHARMACIST
Pharmacist united in action for a healthier world

EVENTS CONDUCTED

On 3rd February-2023, we have conducted a National Conference on "**Design and Development of Drug Delivery & Drug Targeting Systems**", organized by the **School of Pharmacy, The Neotia University** in association with "**Indian Association of Pharmaceutical Scientists and Technologists"**, Jadavpur University, Kolkata & "**Association of Pharmaceutical Teachers of India",** West Bengal Branch at Uday Shankar Multi-purpose Hall (TNU). The inaugural function was graced by Prof. Biswajit Ghose, Vice-Chancellor, TMU as Chief Guest, Dr. Manish, Registrar as Guest of Honour, Prof. Biswajit Mukherjee (Professor, JU) as Chief Speaker and Prof. Arup Mukherjee (Prof. MAKAUT) as Guest of Honour. Its Begin with lighting lamp and Saraswati Vandana and thereafter felicitation to the invited guests, followed by inauguration of **Souvenir-cum-Scientific abstract** as well as **signing of MoU between The Neotia University and Indian Association of Pharmaceutical Scientists and Technologists** were done. The inaugural function was presided by Prof. S. C. Dinda, Dean, School of Pharmacy and continued with address by the guest speakers followed by vote of thanks by Prof. Sibaram Paria, TNU.

Two resource persons from **academia** such as Prof. Biswajit Mukherjee (Jadavpur University) & Prof. Arup Mukherjee (Maulana Abul Kalam Azad University of Technology and **two resource persons from industry** such as Dr. Dr. Anirbandeep Bose, QA Head, TAAB Biostudy Services, Kolkata & Mr. Swapan Deb, Head, R & D, Dey's Medical Stores Manufacturing Ltd. Delivered their plenary lecture on relevant topics to the theme of the conference. The Scientific sessions were chaired by Prof. B. B. Barik (Brainware University) & Prof. Dr Dhrubo Jyoti Sen (Techno India University).

More than 500 participants (including 430 registered delegates) from different corners of the country including West Bengal, Odisha and Chattish Garh were participated in the conference. 121 scientific/research posters were displayed by the participants, which includes research scholars, student and faculty members. The posters were evaluated and winners of 1st, 2nd, and 3rd positions under four different subject categories were awarded with certificate with mementoes in the valedictory function and the conference was ended with a **cultural program presented by the students** of School of Pharmacy, The Neotia University.

SOME LINKS FOR IMPORTANT RESOURCE

For corona virus disease (COVID19) Pandemic:
http://www.europeanpharmaceuticalreview.com/
https://www.who.int/emergencies/diseases/novel-coronavirus-2019
https://www.mohfw.gov.in/
https://main.icmr.nic.in/content/covid-19
https://covid.icmr.org.in/
ICH guidelines on Quality of Pharmaceuticals:
https://www.ich.org/page/quality-guidelines
US-FDA guidance for Industry on Q7A GMP:
https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidance-industry-q7a-good-manufacturing-practice-guidance-active-pharmaceutical-ingredients

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UPCOMIMG EVENTS

PLACEMENT NEWS