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Official Desk

Sri. Gangadhar V. Yavagal
President
Karnataka State
Pharmacy Council

Dear Pharmacist,

Karnataka State Pharmacy Council (KSPC) had instituted few awards and scholarship for the professional upliftment of the Registered Pharmacists in Karnataka which was discussed in the official desk of Oct-Dec 2018 DIRC newsletter.

Now, it is my pleasure to share that during the Annual Convocation of Rajiv Gandhi University of Health Sciences, Bengaluru held on 26-03-2019, Karnataka State Pharmacy Council has awarded 2 Gold medals for one student each who secured highest marks in B.Pharm and M.Pharm courses. Ms. Hemapriya S., B.Pharm from Oxford College of Pharmacy, Bengaluru and Ms.Manjula R, M.Pharm (Pharmaceutics) from Mallige College of Pharmacy, Bengaluru was awarded.

This is the first of its kind in Rajiv Gandhi University of Health Sciences that a B.Pharm and M.Pharm topper was awarded a Gold medal through KSPC.

Karnataka State Pharmacy Council has also granted financial assistance/travel grant for two Pharmacy teachers/Academic Pharmacists registered with KSPC to present a paper in an International Conference held during March 2019.

Further, KSPC has released scholarship for the legal heirs (son/daughter) of Registered Pharmacists - two students each who joined for 1st year B.Pharm and M.Pharm courses.

The scholarship will be continued in the subsequent years for the above students as per the terms and conditions laid by the KSPC.

Hence, I request all the Registered Pharmacist to share this message among all the other fellow Pharmacists regarding the new initiatives of KSPC and avail the services.

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Former Member, KSPC – No more

Sri. V.S. Banavi

Sri. V.S. Banavi was born on 3rd October 1946 in Hubballi, Karnataka to the blessed parents Sri. Somappa and Smt. Seetamma. He completed his Diploma in Pharmacy during 1969 from Government College of Pharmacy, Bengaluru.

He got married to Smt. Vanamala and we could perceive the support of Smt. Vanamala in the dedicated service of Sri.V.S. Banavi.

Sri.V.S. Banavi got into his Retail Pharmacy profession during the year 1970 in the name of M/s.Deepak Medicals Agencies in Hubballi, Sri Banavi was a well-known, most loved and a popular personality both in trade and professional sector.

He was the President of Hubli Jaycee in 1978 and served as the Founder, President, Secretary, Joint Secretary at Dharwad District Chemist and Druggist Association, Hubli for more than 10 years. Since 1985 he was the Executive Committee Member of AIOCD south zone and at Vishva Bharathi Girls and Junior College at Hubli.

He was also the Vice-President and Executive Committee Member of Karnataka Chemist & Druggists Association, Bangalore for more than 15 years and director of Reddy Co-operative Bank, Hubballi for 10 years.

He was a part of many social organizations and recipient of few awards in Indian Jaycee 1978.

Sri.V.S. Banavi was the Executive Member of Karnataka State Pharmacy Council since 1989 and his contribution to the field of Pharmacy is always remembered by our Profession.

He passed away on 21st January 2019 at Hubballi.

Now with his demise, we totally lost a social and professional friend, guide and a philosopher.

We the President, Vice-President, Members and staff deeply mourn the sad demise of Sri.V.S. Banavi and convey our deep-felt condolences to the bereaved family and his dear ones.

May his soul rest in peace and may the almighty provide his dear ones with the strength and courage to withstand the loss. ❑

Guest Column

Drug Information: An indispensable Part of Holistic Healthcare

Manoj Kumar Yadava
Consultant,
Medical Communications
and Digital Technologies

Introduction

Healthcare awareness is on rise and so is the demand for healthcare information. Thanks to internet and various search engines such as Google that simplify the information accessibility. People nowadays not only search for information regarding diseases and their medication but also information on improving general health and having a better quality of life. That makes it imperative that complete and authentic information is available to end users of medicines.

Drug Information On Internet

Nowadays, internet has become a very useful tool in searching for medical information for the general public as well as healthcare professionals. However, not all the information available on the internet is authentic and a critical approach needs to be taken before considering the information as reliable.

Online information mostly is unregulated and lack privacy policy. As most information on the internet lack experts review, it is risky to consider it authentic without confirming the authenticity of the information as it can be misleading and incomplete for both the general public as well as medical professionals.

Agreed that information on the internet does give some insight to the patients about their disease condition and the types of medication they are taking, but it is also the responsibility of the healthcare provider to guide patients to an authentic source of information which can give them correct knowledge about their disease condition and the medication that they are taking. Educating the patients on the correct source of information is key to providing high value healthcare.

Authenticity of information on the Internet

It is important to evaluate the information while picking up on the Internet. Here are some pointers:

- Always look out for the first hand information.
- Identify the author and examine his or her credentials. If the author is unknown, check the authenticity of the publication.
- Try to find out the motive the article was written. Is the purpose to inform or educate? Is the writer putting across a point of view or is it trying to sell something?
- You may also like to check the accuracy of the content and who is responsible for it. Are the sources cited verifiable? Has the article been written tackily with grammatical or spelling errors?
- You can also check whether the links given are related to the topic of the article and the purpose of the site.
- Refer to information only from credible sources—such as government organizations, registered reputed associations and organizations.

Need For Drug Information Centre

Drug Information Centres (DICs) are dedicated specially to provide information on medications and other health related issues. Information provided by the DICs is validated, complete, genuine, impartial, patient specific and relevant to the general public as well as healthcare professionals. DIC carries the responsibility of educating the people on proper medication use, its safety and side effects and other critical information. Services of the DICs are easily accessible at any given point on time and the information given is clear, complete and accurate.

DICs have an impressive collection of data on drugs which can be of use to Physicians, Pharmacists and Medical Professionals in order to protect the financial and legal interests of the patient. Pharmacists can play a greater role in the society by accessing information from these centres and passing it onto the general public. Each piece of data collected by the DIC is reviewed and evaluated before it is made available to the general public and healthcare professionals. Thus, DICs play a vital role in healthcare services to provide authentic information to anybody who needs it.

A developing country like India must preserve its resources since budgetary allocations for healthcare is limited, it is of crucial importance that resources are utilized optimally. DICs play a vital role in this area to ensure right drugs are prescribed at right dosages thereby minimising wastage. Information available must be clear, concise, up-to-date and could be easily understood by the public and professionals. The World Health Organization (WHO) recognizes the importance of independent DICs in promoting rational use of drugs as part of national programs.

There are various Drug Information Centres existing in India, in which the majority of them are attached to a specific hospital and provide the medicine information queries received to that hospital where it is attached.

Karnataka State Pharmacy Council (KSPC) has started an independent Drug Information Centre in Karnataka in the year 1997 and is providing relevant, authentic Drug Information to various category of enquirers like Doctor, Nurses, Pharmacists, Medical students, Patients and even to the general public.

DIRC of KSPC can be contacted at:

Karnataka State Pharmacy Council
514/E, 1st Main, 1st Cross Road,
2nd Stage, Vijayanagar, Bangalore – 560104
Website: https://kspcdic.com Email: kspcdic@gmail.com
Phone: 080-46729800 (800 to 899 lines) Extn: 231, 233

Reference

Chauhan N, Moin S, Pandey A, et al. Indian aspects of drug information resources and impact of drug information centre on community. J Adv Pharm Technol Res. 2013;4(2):84-93. ❑

Drug of the Quarter

Drug: Sacubitril + Valsartan

Class: Neprilysin inhibitor & Angiotensin II receptor antagonist

Dosage form: Film coated tablets

Strength: 50 /100/200 mg

DCGI Approval: 24.12.2018

USFDA Approval: July 2015

Indication: To reduce the risk of cardiovascular death and hospitalization for heart failure in patients with chronic heart failure (NYHA Class II-IV) and reduced ejection fraction.

Dose Information

Adult Normal Dosing:

Starting dose: 49/51 mg (Sacubitril/Valsartan) twice-daily.

Reduce the starting dose to 24/26 mg (Sacubitril/Salsartan) twice-daily (for patients not currently taking ACE inhibitor or angiotensin receptor blocker or taking low doses).

Double the dose of sacubitril/valsartan after 2 to 4 weeks to the target maintenance dose of 97/103 mg (sacubitril/valsartan) twice-daily, as tolerated by the patient.

Pediatric Dosing: Safety and efficacy have not been established in pediatric patients younger than 18 years.

Pharmacokinetics

Absorption

- Sacubitril, Tmax, oral: 0.5 hours
- LBQ657 (sacubitril active metabolite), Tmax, oral: 2 hours
- Valsartan, Tmax, oral: 1.5 hours
- Sacubitril, bioavailability, oral: 60% or greater
- Effect of food: No clinically significant effect.

Distribution

- Protein binding: 94% to 97%
- Sacubitril, Vd: 82.7 L to 103 L
- Valsartan, Vd: 75 L to 101 L

Metabolism

- Sacubitril: Converted to LBQ657 via esterases
- Valsartan: Minimal metabolism
- Sacubitril: LBQ657 (Major, active)

Excretion

- Sacubitril, renal: 52% to 68% (primarily as LBQ657)
- Sacubitril, fecal: 37% to 48% (primarily as LBQ657)
- Sacubitril, total body clearance: 49.4 L/hr
- Valsartan, renal: about 13%
- Valsartan, fecal: 86%
- Valsartan, total body clearance: 4.22 L/hr

Elimination Half Life

- Sacubitril: 1.31 hours
- LBQ657 (sacubitril active metabolite): 11.5 hours to 12 hours
- Valsartan: 9.9 hours to 20.8 hours

Contraindication

- Angioedema to prior ACE inhibitor or angiotensin II receptor blocker therapy.
- Concomitant Aliskiren use in diabetic patients.
- Concomitant use of ACE inhibitors; do not administer within 36 hours of each other.
- Hypersensitivity to sacubitril, valsartan, or any component of the product.

Caution

Angioedema: Angioedema has been reported and may be fatal. Do not initiate in patients with hereditary angioedema or angioedema associated with use of ACE inhibitors or angiotensin II receptor blockers; increased risk in Black patients and in those with prior history of angioedema; discontinue and do not reinitiate therapy with occurrence.

Cardiovascular: Low blood pressure and symptomatic hypotension have been reported; dose reductions or treatment interruption may be required.

Cardiovascular: Volume or salt depletion may increase the risk of symptomatic hypotension; correct prior to use; dose reduction or interruption of therapy may be warranted.

Concomitant use: Avoid use with angiotensin II receptor blockers.

Concomitant use: Avoid use with Aliskiren in patients with renal impairment.

Endocrine and Metabolic: Hyperkalemia may occur; monitoring recommended, especially in at-risk patients (eg, diabetes, a high potassium diet, hypoaldosteronism, severe renal impairment); dose reduction or treatment interruption may be required.

Hepatic: Use not recommended in patients with severe hepatic impairment.

Hepatic: Dose adjustments recommended in patients with moderate hepatic impairment.

Renal: Increased risk of oliguria, progressive azotemia, acute renal failure and/or death in patients whose renal function is dependent on the renin-angiotensin system (eg, severe congestive heart failure); monitoring recommended

Renal: Increase serum creatinine or BUN may occur in patients with unilateral or bilateral renal artery stenosis; monitoring recommended.

Renal: Decreases in renal function may occur.

Renal: Dose adjustments recommended in patients with severe renal impairment.

Storage & Stability

Store the medicine in a closed container at room temperature, away from heat, moisture, and direct light.

Mechanism of Action

Sacubitril is a prodrug metabolized to the active metabolite LBQ657, which inhibits Neprilysin, thereby increasing levels of peptides (such as natriuretic peptides). Valsartan is an angiotensin receptor blocker that selectively blocks the AT1 receptor and inhibits angiotensin-II dependent aldosterone release.

Adverse Effects

Common

- **Cardiovascular:** Hypotension
- **Endocrine metabolic:** Hyperkalemia
- **Neurologic:** Dizziness

Serious

- **Renal:** Renal failure
- **Other:** Angioedema

Drug-Drug Interactions

Category	Drug/s (Examples)	Interaction Effect	Management
Sacubitril*	ACE inhibitors	Concurrent use of Sacubitril and ACE inhibitors may result in Increased risk of angioedema.	Contraindicated for concurrent use.
Valsartan*	Aliskiren	Concurrent use of Aliskiren and Valsartan may result in an increased risk of hyperkalemia, renal impairment and hypotension.	Contraindicated for concurrent use.
Angiotensin receptor blockers**	Lithium	Concurrent use of Lithium and Angiotensin receptor blockers may result in increased risk of lithium toxicity.	Avoid concomitant use.
Valsartan***	Rifampin	Concurrent use of Rifampin and Valsartan may result in increased Valsartan exposure.	Use caution if concomitant use is required.
Valsartan***	Cyclosporine	Concurrent use of Cyclosporine and Valsartan may result in increased Valsartan exposure.	Use caution if concomitant use is required.
Angiotensin receptor blockers***	Insulin	Concurrent use of Angiotensin receptor blockers and Insulin may result in increased risk of hypoglycemia.	Use caution if concomitant use is required.
Valsartan***	Potassium-Sparing Diuretics like Spironolactone	Concurrent use of and Potassium-Sparing Diuretics may result in increased risk of hyperkalemia and increased risk of serum creatinine elevation in heart failure patients.	Use caution if concomitant use is required.

Severity: *The drugs are contraindicated for concurrent use. **The interaction may be life-threatening and/or require medical intervention to minimize or prevent serious adverse effects. ***The interaction may result in exacerbation of the patient's condition and/or require an alteration in therapy.

Effects in Pregnancy

Severity	Management
Moderate	Fetal risk has been demonstrated. Available evidence has demonstrated fetal abnormalities or risks when used during pregnancy or in women of childbearing potential. Discontinue use immediately if pregnancy is detected. An alternative to this drug should be prescribed during pregnancy or in women of childbearing potential.

Effects in Lactation

Severity	Management
Major	Infant risk cannot be ruled out: Available evidence and/or expert consensus is inconclusive or is inadequate for determining infant risk when Valsartan is used during breast-feeding. Weigh the potential benefits of treatment against potential risks before prescribing Valsartan during breast-feeding.

Patient Education

1. Counsel female patient to avoid pregnancy during therapy and to report a pregnancy to a physician.
2. Advise patient to report symptomatic hypotension.

References

1. http://www.micromedexsolutions.com/
2. http://www.cdsco.nic.in/
3. http://www.rxlist.com/

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Drug Safety Alerts - National

Pharmacovigilance Programme of India (PvPI)

The preliminary analysis of Serious Unexpected Serious Adverse Reaction (SUSARs) from the PvPI database reveals that the following drugs are associated with the risks as given below.

Sl.No	Suspected Drug/s	Category	Indication/Use	Adverse Reaction/s Reported
			February 2019	
1	Levetiracetam	Anticonvulsant	i) As monotherapy in partial onset seizures with or without secondary generalization in patients with 16 years of age with newly diagnosed epilepsy. ii) As adjunctive therapy in myoclonic seizures in adults and adolescents from 12 years of age with Juvenile.	Anencephaly

Sl.No	Suspected Drug/s	Category	Indication/Use	Adverse Reaction/s Reported
2	Cetirizine	Antihistamine	For the treatment of seasonal / perennial allergic rhinitis & chronic idiopathic urticaria in infants and children.	Tachycardia
January 2019				
3	Miltefosine	Anti-infective	Directly Observed Therapy (DOT) of visceral Leishmaniasis caused by Leishmania donovani	Acute Pancreatitis
December 2018				
4	Telmisartan	Antihypertensive	Hypertension	Lichenoid Keratosis

Meanings: **Anencephaly-** a defect in the formation of a baby's neural tube during development, **Lichenoid keratosis-**A skin condition that typically occurs as a single, small, raised plaque, thickened area or papule.

Healthcare professionals, Patients / Consumers are advised to closely monitor the possibility of the above adverse events associated with the use of above drugs.

If such events are encountered, please report to the NCC-PvPI either by filling of Suspected Adverse Drug Reactions Reporting Form/Medicines Side Effect Reporting Form for Consumer (http://www.ipc.gov.in) or by PvPI Helpline No. 1800-180-3024.

Reference: www.ipc.gov.in

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Serious Risks/Safety Information – USFDA

Potential Signals of Serious Risks/New Safety Information Identified by the Adverse Event Reporting System (AERS) - USFDA

The USFDA Adverse Event Reporting System (FAERS) is a database that contains information on adverse event and medication error reports submitted to FDA. The database is designed to support the FDA's post-marketing safety surveillance program for drug and therapeutic biologic products.

The appearance of a drug on this list does not mean that conclusive of the risk. It means that FDA has identified a ***potential safety issue*** but does not mean that FDA has identified a causal relationship between the drug and the listed risk. If after further evaluation the FDA determines whether the drug is associated with the risk or not and it may take a variety of actions including requiring changes to the labeling of the drug, requiring development of a Risk Evaluation and Mitigation Strategy (REMS) or gathering additional data to better characterize the risk.

Therapeutic Class / Category	Drug (Examples)	Route of Administration	Dosage Form	Potential Signal of a Serious Risk / New Safety Information	Additional Information
July - September 2018					
Antipsychotics	Aripiprazole, clozapine, iloperidone, ziprasidone hydrochloride, paliperidone, lurasidone hydrochloride, paliperidone, pimavanserin, brexpiprazole, risperidone, asenapine, olanzapine	Oral	Tablets, Sublingual	Atypical antipsychotics and serotonin syndrome.	Evaluation is in progress.
Antiobesity agent	Methamphetamine, benzphetamine, phentermine and topiramate, diethylpropion hydrochloride, generic products containing amphetamine and amphetamine congeners for management of obesity	Oral, extended release capsule	Tablets, injection	Death and sudden death	Evaluation is in progress.
Anti-Diabetic	Injectable insulins and insulin analogs	Intravenous	Injection	Cutaneous amyloidosis	Evaluation is in progress.
Blood Modifier Agent	Ticagrelor, generic product containing ticagrelor	Oral	Tablet	Central sleep apnea associated with the use of ticagrelor	Evaluation is in progress.

Therapeutic Class / Category	Drug (Examples)	Route of Administration	Dosage Form	Potential Signal of a Serious Risk / New Safety Information	Additional Information
Antihyperlipidemic / Cardiovascular Agent	Rosuvastatin calcium, Atorvastatin calcium, Ezetimibe and Atorvastatin, Amlodipine, Atorvastatin calcium, generic products containing Rosuvastatin or Atorvastatin or Ticagrelor.	Oral	Tablets	Rhabdomyolysis due to Drug-Drug Interaction between ticagrelor and certain HMG-CoA reductase inhibitors (atorvastatin and rosuvastatin)	Evaluation is in progress.
Antineoplastic Agent / Immunological Agent	Alemtuzumab	Intravenous	Injection	Hemophagocytic Lymphohistiocytosis (HLH)	FDA decided that no action is necessary at this time based on available information.
Antineoplastic Agent / Immunological Agent	Alemtuzumab	Intravenous	Injection	Stroke, intracranial hemorrhage, and/or cervicocephalic arterial dissection	The labeling section of the product was updated to include the risk of stroke and cervicocephalic arterial dissection.
Anticoagulant / Blood Modifier Agent	Apixaban, dabigatran etexilate mesylate, edoxaban, rivaroxaban	Oral	Tablets, capsules	Acute kidney injury	Evaluation is in progress.
Anti-Infective Agent/ Antiretroviral Agent	Elvitegravir, Cobicistat, emtricitabine, and tenofovir alafenamide, rilpivirine, emtricitabine, and tenofovir alafenamide, emtricitabine and tenofovir alafenamide, tenofovir and alafenamide, bictegravir, emtricitabine	Oral	Tablets	Hypersensitivity	Evaluation is in progress.
Nutritive Agent /Iron preparations	Ferumoxytol, sodium ferric gluconate complex in sucrose, iron dextran, ferric carboxymaltose, iron sucrose	Intravenous	Injection	Fatal and severe hypersensitivity reactions	Evaluation is in progress.
Blood Modifier Agent / Colony Stimulating Factor	Pegfilgrastim	Intravenous	Injection	Alveolar hemorrhage, hemoptysis	Evaluation is in progress.
Immune Modulator / Immunological Agent	Ocrelizumab	Intravenous	Injection	Anaphylaxis	Evaluation is in progress.
Gastrointestinal Agent	Proton Pump Inhibitors, Rabeprazole sodium, dexlansoprazol, esomeprazole strontium, esomeprazole magnesium, pantoprazole sodium, lansoprazole, omeprazole, omeprazole and sodium bicarbonate, generic products containing proton-pump inhibitors.	Oral, Intravenous,	Delayed-release tablets, capsules, delayed- release oral suspension, delayed release orally disintegrating tablets, injection, powder for oral suspension and capsules	Rebound acid hypersecretion	FDA decided that no action is necessary at this time based on available information.
Antibiotic /Anti-Infective Agent	Rifaximin	Oral	Tablet	Rhabdomyolysis	Evaluation is in progress.

Meanings: Thrombotic Microangiopathy- A pathology that results in thrombosis in capillaries and arterioles, due to an endothelial injury,

References

1. http://www.fda.gov/
2. www.micromedexsolutions.com, Micromedex (R) 2.0, 2002-2019, IBM Corporation 2019.

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Drug News – Around the Globe

1. Drug: Brexanolone* **Country: USA**

Brexanolone is an antidepressant drug.

Approved Indication: Brexanolone injection for intravenous (IV) is the first drug approved for the treatment of postpartum depression (PPD) in adult women. Brexanolone is administered as a continuous IV infusion over a total of 60 hours (2.5 days). Because of the risk of serious harm due to the sudden loss of consciousness, patients must be monitored for excessive sedation and sudden loss of consciousness and have continuous pulse oximetry monitoring (monitors oxygen levels in the blood).

Approved Dosage Form: Injection.

Side-effects: Sleepiness, dry mouth, loss of consciousness and flushing[1].

2. Drug: Ravulizumab* **Country: USA**

Ravulizumab is a humanized monoclonal antibody.

Approved Indication: Ravulizumab injection was approved for the treatment of adult patients with paroxysmal nocturnal hemoglobinuria (PNH), a rare and life-threatening blood disease. Patients should be immunized with meningococcal vaccines at least two weeks prior to administering the first dose of Ravulizumab, unless the risks of delaying treatment outweigh the risks of developing a meningococcal infection.

Approved Dosage Form: Injection

Side-effects: Headache and upper respiratory infection[1].

3. Drug: Esketamine** **Country: USA**

Esketamine is an antidepressant drug.

Approved Indication: Esketamine nasal spray, in conjunction with an oral antidepressant, was approved for the treatment of depression in adults who have tried other antidepressant medicines but have not benefited from them (treatment-resistant depression). Caution in patients with unstable or poorly controlled hypertension or pre-existing aneurysmal vascular disorders due to increased risk for adverse cardiovascular or cerebrovascular effects, if Esketmaine is administered.

Approved Dosage Form: Nasal spray.

Side-effects: Dizziness, nausea, sedation, vertigo, decreased feeling or sensitivity (hypoesthesia), anxiety, lethargy, increased blood pressure, vomiting and feeling drunk [1].

Reference: https://www.fda.gov

Note - *Not available in India

Safety Alert - Around the Globe

1. Drug: Carbimazole* **Country: USA**

May cause increased risk of congenital malformations.

Carbimazole is an antithyroid agent.

Alert: The USFDA has warned that Carbimazole can increase the risk of congenital malformations, especially when administered in the first trimester of pregnancy and at high doses (15 mg or more of Carbimazole daily) since it crosses the placental barrier. Women of childbearing potential should use effective contraception during treatment with Carbimazole.

Hence, KSPC-DIRC alerts the healthcare professionals to be cautious while prescribing Carbimazole during pregnancy. If clinically indicated, then assess the benefit/risk and prescribe the lowest effective dose without additional administration of thyroid hormones[1].

2. Drug: Febuxostat* **Country: USA**

May increase the risk of death.

Febuxostat is a xanathine oxidase (XO) inhibitor used to treat gout.

Alert: The USFDA has cautioned that there is an increased risk of death with Febuxostat compared to another gout medicine, Allopurinol.

Hence, KSPC-DIRC alerts the healthcare professionals to be cautious while prescribing Febuxostat[1].

3. Drug: Tofacitinib** **Country: USA**

May increase the risk of blood clots in the lungs and can lead to death.

Tofacitinib is an inhibitor of Janus kinases used as Antirheumatic and/or gastrointestinal agent.

Alert: The USFDA has warned that use of tofacitinib 10 mg twice daily dose can increase the risk of blood clots in the lungs and can lead to death when used in patients with rheumatoid arthritis (RA). The USFDA has not approved 10 mg twice daily dose for RA; this dose is only approved in the dosing regimen for patients with ulcerative colitis.

Hence, KSPC-DIRC alerts the healthcare professionals about the new safety changes for Tofacitinib[1].

Reference: https://www.fda.gov

Note: *Available in India ** Not available in India

Continuing Pharmacy Education (CPE)

Dispensing Instructions to the Pharmacists

Rheumatoid Arthritis-oral

A chronic, inflammatory, systemic autoimmune disorder characterized by symmetric, erosive synovitis that frequently leads to joint destruction, deformity and disability. In some people, the condition can damage a wide variety of body systems, including the skin, eyes, lungs, heart and blood vessels.

The most common signs and symptoms of rheumatoid arthritis may include:

- Tender, warm, swollen joints
- Joint stiffness that is usually worse in the mornings and after inactivity
- Fatigue, fever and loss of appetite

The types of medications recommended will depend on the severity of patient's symptoms,

- **Disease Modifying Antirheumatic Drugs:** Methotrexate, hydroxychloroquine, leflunomide, minocycline and sulfasalazine
- **NSAIDs and Cox-2 inhibitors:** Aspirin, Ibuprofen, Celecoxib
- **Adrenal Glucocorticoids:** Prednisone, Hydroxychloroquine Sulfate

Below is a brief overview of few classes.

Drugs/ Category	Use	Warnings	Less serious side effects	Advice
Methotrexate	Treatment of cancer, rheumatoid arthritis and psoriasis.	Prescription to be reconfirmed in case of patient is pregnant or planning to become pregnant or kidney disease, liver disease, bone marrow problems (including anemia), lung or breathing problems, diabetes, a weak immune system, any type of infection, stomach ulcers, or a history of alcohol abuse.	Abdominal pain, diarrhea, indigestion, nausea, stomatitis, headache.	Advice to avoid excessive skin exposure to direct sunlight while undergoing treatment with this medicine. Advice the patient to avoid driving vehicle or operate machinery while taking this medicine. Warn patient to avoid aspirin or NSAIDs due to potential for bleeding. Strictly avoid alcohol.
Hydroxychloroquine	Treatment of malaria and rheumatoid arthritis.	Prescription to be reconfirmed in case of pregnancy or breastfeeding or have kidney disease, liver disease, heart disease, diabetes, stomach or bowel problems, nerve problems, blood disorders (including G6PD deficiency, porphyria), psoriasis, or vision or eye problems.	Diarrhea, tiredness, vertigo, tinnitus.	Take the medicine with food or milk. Avoid drinking alcohol. Take the drug as prescribed. Do not discontinue this drug without the advice of the doctor.
Leflunomide	Treatment of rheumatoid arthritis.	Prescription to be reconfirmed in case of pregnancy or kidney disease, liver disease, diabetes, any infection, lung disease or a history of tuberculosis or blood or bone marrow problems.	Diarrhea, headache, rash hair loss.	Advice to avoid receiving live vaccines while taking this medicine. Instruct patient to report any unusual bleeding or bruising. Take the drug as prescribed. Do not discontinue this drug without the advice of the doctor.
Sulfasalazine	Treatment of ulcerative colitis and rheumatoid arthritis.	Prescription to be reconfirmed in case of pregnancy or breastfeeding, or if you have kidney disease, liver disease, trouble urinating, asthma, blood or bone marrow problems, or an enzyme problem called glucose-6-phosphate dehydrogenase (G6PD) deficiency. This medicine may decrease the amount of sperm a man makes and affect his ability to have children while using this medicine. If you are a man who plans to have children, talk with your doctor first.	Headache or dizziness, mild diarrhea, nausea, vomiting, loss of appetite or stomach pain (for more than a few days).	Advice to take this medicine after food at evenly spaced times throughout the day and night. Inform that the patient may feel better after 4 to 12 weeks of starting this medicine for rheumatoid arthritis.

Storage: Advice the patient or caretaker to store the medicine in a closed container at room temperature, away from heat, moisture and direct light. Ensure to keep all medicine out of the reach of children.

References

1. Handbook of Pharma SOS, Educational Series-I, 7th Edition 2018, published by Karnataka State Pharmacy Council, Bangalore.
2. www.micromedexsolutions.com, Micromedex (R) 2.0, 2002-2019, IBM Micromedex ® 3. https://www.mayoclinic.org/

Drug Usage in Special Population - Pediatrics and Geriatrics

(From KSPCDIRC publication)

Anti-infectives

Drug	Usage in Children (Pediatrics)	Usage in Elderly (Geriatrics)
Anti-Leprosy Drugs		
Clofazimine	Safety and efficacy have not been established in pediatric patients.	No dosage adjustment required in renal impairment. But adjustment required in severe hepatic impairment.
Dapsone	Safety and efficacy have been established in pediatric patients.	Dosage adjustment is required in renal failure, but specific guidelines are not available.

Drug	Usage in Children (Pediatrics)	Usage in Elderly (Geriatrics)
Anti-Tuberculosis Drugs		
Ethambutol	Safety and efficacy have been established in pediatric patients.	Dosage adjustment required in renal impairment.
Isoniazid	Safety and efficacy have been established in pediatric patients.	No dosage adjustment required.
Pyrazinamide	Safety and efficacy have been established in pediatric patients.	Dosage adjustment required patients with renal impairment. It should be avoided in patients with creatinine clearance 50ml/ min. Caution in liver impairment.
Rifampicin	Safety and efficacy have been established in pediatric patients.	Dosage adjustment not required but exercise caution. In general, this drug should be given in combination to avoid resistance. Dosage has been individualized in malnourished patients.
Fluconazole	Safety and efficacy have been established in pediatric patients.	Dosage adjustment required in renal failure depends on the creatinine clearance.
Ketoconazole	Safety and efficacy have not been established in pediatric patients below 2 years.	Dosage reductions not required in renal impairment but contraindicated in hepatic insufficiency.

Reference: Drug Usage in special Population-Pediatrics and Geriatrics, Educational Series-II, 7thEdition 2018, published by Karnataka State Pharmacy Council, Bengaluru.

Drug Usage in Special Population - Pregnancy and Lactation

(From KSPCDIRC publication)

Anti-infectives

Drug	Usage in Pregnancy (Teratogenicity)	Usage in Breastfeeding (Lactation)
Anti-Leprosy Drugs		
Clofazimine	Fetal risk cannot be ruled out. Available evidence is inconclusive or is inadequate for determining fetal risk when used in pregnant women or women of childbearing potential. Weigh the potential benefits of drug treatment against potential risks before prescribing this drug during pregnancy.	Controversial data. Avoid breastfeeding during use of this drug.
Dapsone	Fetal risk cannot be ruled out. Weigh the potential benefits of drug treatment against potential risks before prescribing this drug during pregnancy.	Controversial data. Avoid breastfeeding during use of this drug.
Anti-Tuberculosis Drugs		
Ethambutol	USFDA Category C. In general, isoniazid, rifampin or ethambutol appear to have a relatively low teratogenic potential and can be used to treat tuberculosis during pregnancy. The use of pyrazinamide during pregnancy is controversial.	Excreted into breast milk in low concentrations. Safe to use.
Isoniazid	USFDA Category C. In general, isoniazid, rifampin, or ethambutol appear to have a relatively low teratogenic potential and can be used to treat tuberculosis during pregnancy. The use of pyrazinamide during pregnancy is controversial.	Safe to use. Monitor infants for signs and symptoms of neuritis and hepatitis.
Pyrazinamide	USFDA Category C. Insufficient clinical data available. The use of pyrazinamide during pregnancy is controversial. Use only if potential benefit outweighs risk	Excreted into breast milk in negligible amount. Caution.
Rifampicin	Fetal risk cannot be ruled out. Use only if the potential benefit to the mother justifies the potential risk to the fetus. If rifampin is administered during the last few weeks of pregnancy, it can cause postnatal hemorrhage in the mother and infant, which may require vitamin K therapy. Caution.	Safe to use.
Anti-Fungal Drugs		
Fluconazole	Fetal risk cannot be ruled out. Use in pregnancy should be avoided except in patients with severe or potentially life-threatening fungal infections in whom fluconazole may be used if the anticipated benefit outweighs the possible risk to the fetus.	Conflicting data available. Use with caution.
Ketoconazole	USFDA Category C. Insufficient clinical data available. Evidence has demonstrated fetal abnormalities or risks when used during pregnancy. Use only if the benefit to the mother justifies the risk to the fetus	Data not available. Use with caution.

USFDA Category C: Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans. Drug should be given only if the potential benefit justifies the potential risk to the fetus.

Reference: Drug Usage in special Population-Pregnancy and Lactation, Educational Series-I, 7th Edition 2018, published by Karnataka State Pharmacy Council, Bangalore.

ಭೇಷಜೀ ಪರಿಕರ್ಮ ನಿಬಂಧನೆಗಳು, 2015 (Pharmacy Practice Regulation, 2015)

(ಅಧ್ಯಾಯ–2)

3.1. ಘೋಷಣೆ

ಕಾಯ್ದೆಯ ಪ್ರಬಂಧಗಳಡಿ ನೋಂದಾವಣೆಗೆ ಒಂದು ಅರ್ಜಿ ಸಲ್ಲಿಸುವ ಸಮಯದಲ್ಲಿ, ಪ್ರತಿಯೊಬ್ಬ ಅರ್ಜಿದಾರರಿಗೂ ಅಡಕ–1 ರಲ್ಲಿ, ನಿರ್ದಿಷ್ಟಪಡಿಸಲಾದ ಘೋಷಣೆಯ ಒಂದು ಪ್ರತಿಯನ್ನು ಭೇಷಜೀಯ ನೀತಿ ಸಂಹಿತೆಯ ಮತ್ತು ಭೇಷಜಜ್ಞರ ಶಪಥದ ಪ್ರತಿಗಳೊಂದಿಗೆ ಒದಗಿಸತಕ್ಕದ್ದು ಹಾಗೂ ಅವರು ಅದಕ್ಕೆ ಸಹಿಮಾಡಿ ಸಲ್ಲಿಸತಕ್ಕದ್ದು.

3.2 ರಾಜ್ಯ ಭೇಷಜೀ ಪರಿಷತ್ತಿನ ನೋಂದಣಿಯಲ್ಲಿ ಒಬ್ಬ ಭೇಷಜಜ್ಞ ಎಂದು ನೋಂದಾಯಿಸಿಕೊಂಡ ವ್ಯಕ್ತಿಗಳ ವಿಶೇಷ ಹಕ್ಕುಗಳು

ಅನುಮೋದಿತ ಭೇಷಜೀ ವಿದ್ಯಾರ್ಹತೆಗಳನ್ನು ಪಡೆದಿರುವ ವ್ಯಕ್ತಿಗಳಿಂದ ಭೇಷಜೀ ಪರಿಕರ್ಮ ಅನುಷ್ಠಾನದ ಬಗ್ಗೆ, ಈ ನಿಯಮಾವಳಿಗಳಲ್ಲಿ ಮಂಡಿಸಿರತಕ್ಕ ಷರತ್ತುಗಳ ಮತ್ತು ನಿಬಂಧನೆಗಳ ಅಧೀನಕ್ಕೆ ಒಳಪಟ್ಟು, ಒಬ್ಬ ವ್ಯಕ್ತಿ ತಾನು ಯಾವ ರಾಜ್ಯದಲ್ಲಿ ತತ್ಕಾಲದಲ್ಲಿ ವಾಸವಾಗಿರುತ್ತಾನೋ ಅಥವಾ ತನ್ನ ಭೇಷಜೀ ಪರಿಚರ್ಯೆಯನ್ನು ಅಥವಾ ವ್ಯವಹಾರವನ್ನು ಮುಂದುವರೆಸಿಕೊಂಡಿರುತ್ತಾನೆಯೋ, ಆ ರಾಜ್ಯದ ನೋಂದಣಿಯಲ್ಲಿ ತತ್ಕಾಲದಲ್ಲಿ ತನ್ನ ಹೆಸರು ಸೇರ್ಪಡೆಯಾಗಿರುವ ಪ್ರತಿಯೊಬ್ಬ ವ್ಯಕ್ತಿಯು ಒಬ್ಬ "ನೋಂದಾಯಿತ ಭೇಷಜ್ಞ"ರಾಗಿ ಪರಿಕರ್ಮ ಅನುಷ್ಠಾನಗೊಳಿಸಲು ಅರ್ಹರಾಗಿರತಕ್ಕದ್ದು ಮತ್ತು ಭೇಷಜೀ ಪರಿಚರ್ಯೆಯ ಪರಿಕರ್ಮ ಕೈಗೊಳ್ಳಲು ಅರ್ಹರಾಗಿರತಕ್ಕದ್ದು ಮತ್ತು ಅಂತಹ ಭೇಷಜೀ ಪರಿಕರ್ಮದ ಅನುಷ್ಠಾನದಲ್ಲಿ, ಕಾಲಕಾಲಕ್ಕೆ ಭಾರತ ಭೇಷಜೀ ಪರಿಷತ್ತಿನಿಂದ ವ್ಯಾಖ್ಯಾನಿಸಲ್ಪಟ್ಟಂತಹ ಕರ್ತವ್ಯಗಳನ್ನು ಆತನು ನಿರ್ವಹಿಸಿದ ಬಗ್ಗೆ ಆತನು / ಅವಳು ಅರ್ಹರಾಗಿ ನ್ಯಾಯ ಮಾರ್ಗದಲ್ಲಿ ಪಡಿಯಬೇಕಾದ ಯಾವುದೇ ಖರ್ಚು ವೆಚ್ಚಗಳನ್ನು ಅಥವಾ ಶುಲ್ಕಗಳನ್ನು ಕಾಲ ಕ್ರಮೇಣ ವಸೂಲು ಮಾಡಲು ಅರ್ಹನಾಗಿರತಕ್ಕದ್ದು.

3.3 ಮಾಲೀಕರ ಮತ್ತು ನೋಂದಾಯಿತ ಭೇಷಜಜ್ಞರ ಹೆಸರು ಪ್ರದರ್ಶಿಸುವುದು

(ಎ) ಭೇಷಜೀ ವ್ಯವಹಾರ ಸಂಸ್ಥೆಯ ಮಾಲೀಕರ ಹೆಸರು, ಆ ಸಂಸ್ಥೆಯ ವ್ಯವಹಾರ ನಡೆಯುತ್ತಿರುವ ಪ್ರತಿಯೊಂದು ಆವರಣದಲ್ಲೂ, ಹೆಬ್ಬಾಗಿಲಿನಲ್ಲಿ ಅಥವಾ ಅದರ ಸಮೀಪದಲ್ಲೇ ಪ್ರದರ್ಶಿಸಲ್ಪಡತಕ್ಕದ್ದು.

(ಬಿ) ನೋಂದಾಯಿತ ಭೇಷಜಜ್ಞರ ಹೆಸರು, ಆತನ ನೋಂದಣಿ ಸಂಖ್ಯೆ ಮತ್ತು ವಿದ್ಯಾರ್ಹತೆಗಳು ಅತನ/ಅವಳ ಭಾವಚಿತ್ರದೊಂದಿಗೆ, ಭೇಷಜೀಯಲ್ಲಿ ಎಲ್ಲಿ ವಿನಿಯೋಗ ಕ್ರಿಯೆ ನಡೆಸಲಾಗುತ್ತದೆಯೋ ಆ ಸ್ಥಳದ ಪಕ್ಕದಲ್ಲೇ ಪ್ರದರ್ಶಿಸಲ್ಪಡತಕ್ಕದ್ದು. ನೋಂದಾಯಿತ ಭೇಷಜಜ್ಞರು, ಒಂದು ವಸ್ತ್ರ ಸಂಹಿತೆಗೆ ಬದ್ದರಾಗಿ, ಔಪಚಾರಿಕ ಉಡುಪು ಧರಿಸಿದ್ದು, ಮತ್ತು ಶುಚಿಯಾದ ಬಳಿ ಮೇಲು ವಸ್ತ್ರ (ಕೋಟು/ಏಪ್ರಾನ್) ಧರಿಸಿಕೊಂಡು ಅದರ ಮೇಲೆ ಹೆಸರು ಮತ್ತು ನೋಂದಣಿ ಸಂಖ್ಯೆ ಪ್ರದರ್ಶಿಸುತ್ತಿರುವ ಒಂದು ಬಿಲ್ಲೆಯನ್ನು ಧರಿಸಿರತಕ್ಕದ್ದು.

(ಸಿ) ಯಾವ ಅನುಮೋದಿತ ಭೇಷಜೀ ವಿದ್ಯಾರ್ಹತೆ/ಪದವಿಗಳು ಅಥವಾ ಅಂತಹ ಪ್ರಮಾಣ ಪತ್ರಗಳು / ಡಿಪ್ಲೊಮಾಗಳು ಮತ್ತು ಸದಸ್ಯತ್ವಗಳು /ಗೌರವ ಪದವಿಗಳು ವೃತ್ತಿಪರ ಜ್ಞಾನ ನೀಡುವಂತಹುಗಳಾಗಿವೆ ಅಥವಾ ಯಾವುದೇ ಅನುಪವ ಅರ್ಹತೆ / ಸಾಧನೆಗಳನ್ನು ಪ್ರಧಾನ ಮಾಡುವಂತಹುದಾಗಿವೆಯೋ ಅಂತಹುಗಳನ್ನು ಮಾತ್ರ ನೋಂದಾಯಿತ ಭೇಷಜಜ್ಞರು ತಮ್ಮ ಹೆಸರುಗಳಿಗೆ ಹಿಂಬರೆಹಗಳನ್ನಾಗಿ ಪ್ರದರ್ಶಿಸಿಕೊಳ್ಳತಕ್ಕದ್ದು.

3.4 ಮಾಲೀಕರು ನೋಂದಾಯಿತ ಭೇಷಜಜ್ಞರನ್ನು ನೇಮಿಸಿಕೊಳ್ಳತಕ್ಕದ್ದು

ಎ) ಈ ಕಲಂ ಲಾಗೂ ಅಗತಕ್ಕ ಭೇಷಜೀ ವ್ಯವಹಾರದ ಮಾಲೀಕರು ನಿಯಮ 3.3ಕ್ಕೆ ಬಾಧ್ಯರಾಗಿರುವಂತೆ ಒಬ್ಬ ನೋಂದಾಯಿತ ಭೇಷಜಜ್ಞರನ್ನು ನೇಮಿಸಿಕೊಳ್ಳತಕ್ಕದ್ದು. ಸದಾಕಾಲ ಊರ್ಜಿತವಾಗಿರತಕ್ಕ ಅಂತಹ ಒಂದು ನೇಮಕಾತಿಯು ಚಾಲ್ತಿಯಲ್ಲಿರತಕ್ಕದ್ದು; ತಪ್ಪಿದಲ್ಲಿ ಆ ಭೇಷಜೀ ವ್ಯವಹಾರದ ಮಾಲೀಕರು ಕಾಯ್ದೆಯ ಅಧಿನಿಮಯ 42ರ ಪ್ರಬಂಧಗಳನ್ನು ಉಲ್ಲಂಘಿಸಿರುವುದಾಗಿ ಪರಿಗಣಿಸಲಾಗುವುದು.

3.1 Declaration

Each applicant, at the time of making an application for registration under the provisions of the Act, shall be provided a copy of the declaration as specified in Appendix-I along with copies of Code of Pharmaceutical Ethics and Pharmacist's oath by the state pharmacy council, who shall submit it duly signed.

3.2 Privileges of persons registered as a pharmacist on the register of State Pharmacy Council

Subject to the conditions and restrictions laid down in these Regulations regarding practice of profession of pharmacy by persons possessing approved pharmacy qualifications, every person whose name is for the time being entered in the register of the state in which he is for the time being residing or carrying on his profession or business of pharmacy shall be entitled to practice as "Registered Pharmacist" and engage in the practice of profession of pharmacy and to recover in due course of law in respect of such practice of pharmacy any expenses, charges or any fee to which he/she is entitled in lieu of his/her discharging duties as defined by the PCI from time to time.

3.3 Displaying name of owner and registered pharmacist

a) Name of the owner of pharmacy business shall be displayed at or near the main entrance of each premises in which the business is carried on.

b) Name of the registered pharmacist along with his registration number and qualification along with his/her photograph shall be displayed adjacent to the area where dispensing is carried on in the pharmacy. Registered pharmacist shall also comply with a dress code of being dressed formally and wearing clean white overall (coat / apron) with a badge displaying the name and registration number.

c) Registered pharmacists shall display as suffix to their names only recognized pharmacy qualification / degrees or such certificates / diplomas and memberships / honours which confer professional knowledge or recognizes any exemplary qualification / achievements.

3.4 Owner to appoint registered pharmacist

a) The owner of a pharmacy business to which this clause applies shall appoint a registered pharmacist to be responsible for regulations 3.3. There must be such an appointment in force at all times; otherwise the owner of the pharmacy business shall be deemed contravening the provisions of section 42 of the Act.

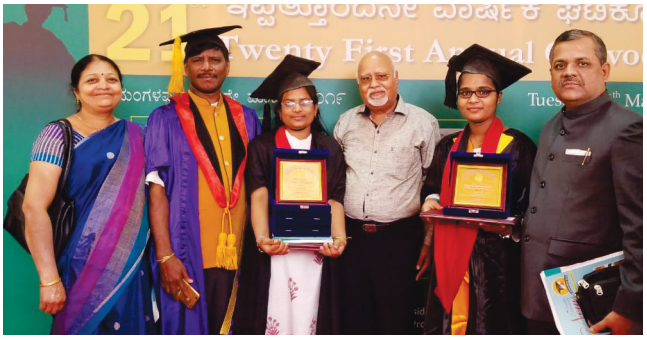
ಬಿ) ನೇಮಕಾತಿಯು ಸಿಂಧುವಾಗಿರಲು, ಆ ನೇಮಕಾತಿಯ ಅಧಿಸೂಚನೆಯು, ನೇಮಿಸಲ್ಪಟ್ಟ ವ್ಯಕ್ತಿಯಿಂದ ಸಹಿ ಮಾಡಲ್ಪಟ್ಟ ಒಂದು ನೇಮಾಕಾತಿ ಪರಿಗ್ರಹಿಸಿದ ಅಧಿಸೂಚನೆಯೊಂದಿಗೆ ಜೊತೆಯಾಗಿರತಕ್ಕದ್ದು. ಸಿ) ಭೇಷಜೀ ವ್ಯವಹಾರದ ಮಾಲೀಕರಿಂದ ಆಥವಾ ನೇಮಿಸಲ್ಪಟ್ಟ ವ್ಯಕ್ತಿಯಿಂದ ಅಥವಾ ಆತನ ಪರವಾಗಿರುವವರಿಂದ ಒಂದು ಅಧಿಸೂಚನೆ ನೀಡುವುದರ ಮೂಲಕ ಒಂದು ನೇಮಕಾತಿಯನ್ನು ರದ್ದು ಪಡಿಸಬಹುದಾಗಿದೆ. ನೇಮಕಾತಿ ಮಾಡಲ್ಪಟ್ಟ ವ್ಯಕ್ತಿಯು ಒಬ್ಬ ನೋಂದಾಯಿತ ಭೇಷಜ್ಞ ಆಗಿ ಮುಂದುವರಿಯಲು ವಿಫಲನಾದಲ್ಲಿ ಆ ನೇಮಕಾತಿಯು ತನ್ನಿಂದ ತಾನೇ ರದ್ದುಗೊಳ್ಳತಕ್ಕದ್ದು.	b) To be effective the notice of appointment must be accompanied by a notice of acceptance of the appointment signed by the appointed person. c) An appointment may be revoked by notice given either by the owner of the pharmacy business or by or on behalf of the appointed person. The appointment shall be automatically revoked if the person appointed ceases to be a registered pharmacist.

KSPC News

1. Annual Convocation of Rajiv Gandhi University of Health Sciences-2019

Karnataka State Pharmacy Council has instituted an **"Endowment Award of Gold medal"** to one student each for securing highest marks in B.Pharm and M.Pharm courses from 2019 through Rajiv Gandhi University Health Sciences, Bengaluru.

Sri. Gangadhar V. Yavagal, President, Karnataka State Pharmacy Council, Bengaluru was an invitee for the 21st annual convocation of Rajiv Gandhi University of Health Sciences held on 26-03-2019. During this occasion Ms. Hemapriya S., B.Pharm from Oxford College of Pharmacy, Bengaluru and Ms.Manjula R, M.Pharm (Pharmaceutics) from Mallige College of Pharmacy, Bengaluru who scored highest marks in the examination were awarded the KSPC sponsored Gold Medals.



2. HKE's Matoshree Taradevi Rampure Institute of Pharmaceutical Sciences, Kalaburagi

HKE's Matoshree Taradevi Rampure Institute of Pharmaceutical Sciences, Kalaburagi organized a **Continuing Education Programme (CEP)** for teachers on **"New Vistas in Pharmaceutical Education, Research and Industry"** sponsored by Pharmacy Council of India, New Delhi from 14th to 16th March 2019.

Sri.Gangadhar V. Yavagal, President, Karnataka State Pharmacy Council, Bengaluru was the chief guest for the programme. He explained about the various new activities of Karnataka State Pharmacy Council adopted during 2018-19 like scholarship schemes, best student awards in Pharmacy, best Pharmacy Professional award in Karnataka and later he distributed participant certificates to teacher delegates. Dr. Kishore Singh Chatrapathi, Director, Rajiv Memorial Education Society's College of Pharmacy, Kalaburagi and Executive Committee Member, Karnataka State Pharmacy Council was also guest for the programme.

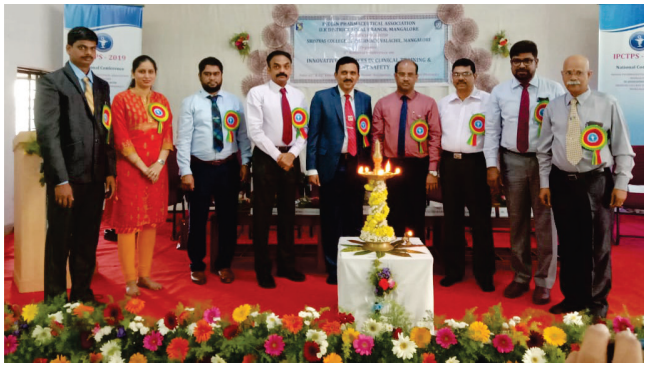
This programme was inaugurated by Prof.H.M.Maheshwaraiah, Vice-Chancellor, Central University of Karnataka, Kalaburagi and a keynote address was given by Dr.Shivanand S. Devaramani, Vice-President, HKES, Dr. Nagendra S. Manthale, Secretary and Sri. Anilkumar S. Margol, Convener, HKES presided the function.

3. Srinivas College of Pharmacy, Mangalore

Indian Pharmaceutical Association, D.K District Local Branch, Mangalore in association with Srinivas College of Pharmacy has organized two-day National conference with the theme **"Innovative Practices in Clinical Training & Patient Safety"** on 22nd and 23rd February 2019.

Dr. Sachidanand Rai, President, Indian Medical Association, Mangalore inaugurated the conference and Dr. Jagadish V. Kamath, Principal, Sridevi College of Pharmacy, Mangalore and Executive Committee Member, Karnataka State Pharmacy Council, Bengaluru was one of the guests for this conference.

More than 250 delegates had participated at the conference.



4. Rajiv Memorial Education Society's College (RMES) of Pharmacy, Kalburgi

Rajiv Memorial Education Society's College (RMES) of Pharmacy, Kalburgi conducted Valedictory Function of Silver Jubilee and Annual Day gathering on 20th February 2019.

Dr. Kishore Singh Chatrapathi, Director, Rajiv Memorial Education Society's College of Pharmacy, Kalaburagi and Executive Committee Member, Karnataka State Pharmacy Council along with other colleagues arranged the function.

Visits by Dignitaries

Prof. Angeni Bheekie, Associate Professor, School of Pharmacy, University of the Western Cape, Bellville, South Africa, and Prof. Van Huyssteen, Senior Lecturer, School of Pharmacy, University of the Western Cape, South Africa visited the Council along with Dr. Sunitha Srinivas, Faculty, Institute of Public Health, Bangalore and Dr. Poornima, Professor, K.L.E. College of Pharmacy, Bengaluru visited KSPC to discuss "Antimicrobial resistance (AMR)" programme for the State of Karnataka.

Sri. Gangadhar V Yavagal, President welcomed the dignitaries explained about the ongoing activities of Karnataka State Pharmacy Council along with the newer initiatives planned for the professional improvement of the Registered Pharmacist in the state of Karnataka.

Prof. B.G.Shivananada, Registrar, KSPC along with Dr.Gayathri Devi S., Former Dean, Sikkim Manipal University and Mr. Manoj Kumar Yadava, Consultant, Medical Communications and Digital Technologies also attended the discussion along with the guests.

Additional Information on any article is available on request
Contact: **KARNATAKA STATE PHARMACY COUNCIL**
Drug Information and Research Center
514/E, I Main, II Stage, Vijayanagar, Bengaluru-560 104. Ph : 080- 46729800 (800 to 899 lines), 23383142, 23404000
E-Mail : kspcdic@gmail.com, Visit us at : www.kspcdic.com

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