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Palliative Care-Role of Pharmacist

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Palliative care is a specialized medical care for people with serious illnesses or life-threatening chronic diseases. Palliative care has been defined by the European Association of Palliative Care (EAPC) as "the active total care of patients whose disease is not responsive to curative treatment."

As per WHO, palliative care is an essential part of cancer control and can be provided relatively simply and inexpensively. In India, even though palliative care is included in the national cancer control programme, it is mainly provided by nongovernmental organizations. There have been some important successes that might be applied nationally.

The focus of palliative care is to provide patients with relief from the symptoms, pain and stress of a serious illness—whatever the diagnosis. This includes physical, emotional, psychological and spiritual support to an individual in their final stages. Furthermore, it offers a support system to help relatives and friends cope during the patient's illness and grief (bereavement). This helps the family members confront their grief, make decisions and adapt to necessary changes. The goal is to ensure that, regardless of their age or stage of illness they can achieve the best quality of life possible.

Palliative care does not hasten or delay death. The different places where palliative care can be provided are in the home, hospitals, hospice, tertiary care centers or in outpatient clinics.

Palliative care is provided by an interdisciplinary team of professionals whose central focus is the patient who is suffering as well as their family. This team includes the doctors, nurses, dieticians, occupational therapists, chaplain, pharmacists, physiotherapists, recreational therapists, rehabilitation assistants, respiratory therapists, social workers, volunteers, palliative care consultants etc. The duties and responsibilities of each team members vary accordingly.

Pharmacist can play a vital role for palliative care patients. Most of the patients in need of palliative care will have a long lasting relationship based on the trust with their regular pharmacist. In the difficult circumstances of palliative care, this relationship becomes even stronger. The trusting relationship with the pharmacist offers a strong basis for the psychological and social support needed by the patient and his family.

The pharmacist can have the full history of the medicines, previously used by the patient, on record. These include both prescription and nonprescription drugs. Ensure that any additional drug use will be systematically recorded and checked.

The pharmacological approach in palliative care is specific and special attention should be paid. The right choice of drug, its dosage, the detection of side effects, interactions, over- or under utilization, (certainly in case of polymedication, as is often the case in palliative care) are important points.

Pharmacist counseling of patients and their caregivers about drug dosage, administration and anticipated side effects can aid compliance. For patients who have difficulty remembering to take their medication at the right time, pharmacists can provide necessary 'compliance aids'. He should assist families /care givers that all the medications remaining in patients' homes should be safely and legally disposed after the patient's death.

Pharmacists can provide information and advice about patient support services such as self-help groups, NGO's, social workers, palliative care services and so on. It is clear that communication with other healthcare providers and certainly with the treating doctors and seamless care is absolutely necessary.

In conclusion, together with the other members of the team that is formed around a patient in need of palliative care, the pharmacist has a well-defined and unique role in order to guarantee maximum comfort, based on the rational and optimal use of medication.

Sources: 1. http://www.ashp.org/ 2. http://www.palliative.org/ 3. www.eapcnet.eu

CONTENTS

ಲೇಖಕಿ ಶ್ರೀಮತಿ ಡಾ. ಅನುರಾಧ ಕಾಮತ್ ರವರ ಕಿರುಪರಿಚಯ

Studied in Govt . Ayurvedic College, Bangalore and passed out in the year 1996. Now practicing in rural area named Uppunda since 14 years. I strongly believe in holistic approach in treating patients and diseases, along with practicing ayurvedic system of medicine, yoga, naturopathy tips, dietetic information, meditation counseling, home remedies etc which together work wonderfully in healing a persons body, mind, emotion and soul. I am trying that in my clinic. My hobbies are writing, reading literature and music.

Drug of the Quarter

Drug : **Bedaquiline**

Class : Anti-mycobacterial drug

Dosage Form : Tablet

DCGI Approval : 14th Jan 2015

FDA Approval : 28th Dec 2012

Indication : For the treatment of multidrug-resistant pulmonary TB in combination with at least 3 other effective agents in adult patients and should be used only when other effective treatment regimens cannot be offered. Efficacy not established for extrapulmonary or latent TB.

Dose Information

Adult Dosing: 400 mg orally once daily for 2 weeks followed by 200 mg orally 3 times a day per week for 22 weeks with food. This drug should be administered in combination with at least 3 other agents shown to be active against TB isolates from the patient.

Paediatric Dosing: Safety and effectiveness in pediatric patients is not established.

Pharmacokinetics

Absorption

- Tmax, Oral: 5 hours
- Effects of food: Bioavailability increased by 2-fold

Distribution

- Protein binding, Albumin: 99.9%
- Volume of Distribution (Vd): 164 L

Metabolism

- Hepatic: Significant

Excretion

- Fecal: extensive
- Renal: less than 0.001%

Elimination Half Life: 5.5 months

Caution

- Increased mortality risk, use only when advised by specialist.
- QT interval prolongation and hepatic-related adverse drug reactions have been reported. Monitoring recommended and discontinuation may be necessary.
- Avoid use with alcohol, concomitant hepatotoxic drugs or strong CYP3A4 inducers including rifamycins.
- QT prolongation may be additive with concomitant use of other QT prolonging drugs.

Mechanism of Action/Pharmacology

Bedaquiline is a diarylquinoline antimycobacterial drug that inhibits mycobacterial ATP (adenosine 5'-triphosphate) synthase, an enzyme required for the generation of energy in Mycobacterium tuberculosis.

Adverse Effects

Common

- Cardiovascular: Chest pain
- Gastrointestinal: Nausea
- Musculoskeletal: Arthralgia
- Neurologic: Headache
- Respiratory: Hemoptysis

Serious

- Cardiovascular: Prolonged QT interval
- Hepatic: Increased liver enzymes

Drug-Drug interactions

Category	Drug/s (Example)*	Interaction Effect	Management
QT interval prolonging drugs	Sparfloxacin , Ketoconazole, Piperaquine, Thioridazine, Amiodarone, Cisapride, Citalopram, Domperidone	Additive prolongation effects on the QT interval.	Contraindicated.
Strong CYP3A4 inducers	Rifampin, Rifapentine, Rifabutin, Carbamazepine	Decreases bedaquiline plasma concentrations.	Contraindicated.
Strong CYP3A4 inhibitors	Ketoconazole, Fluconazole, Atazanavir, Darunavir, Nelfinavir	Increases bedaquiline plasma concentrations.	Contraindicated.

Severity: *The interaction may be life-threatening and/or require medical intervention to minimize or prevent serious adverse effects.

Effects in Pregnancy and Lactation:

Pregnancy: U.S. Food and Drug Administration's Pregnancy Category: B (All Trimesters)

Note: Category B- Either animal-reproduction studies have not demonstrated a fetal risk but there are no controlled studies in pregnant women or animal-reproduction studies have shown adverse effect (other than a decrease in fertility) that was not confirmed in controlled studies in women in the first trimester (and there is no evidence of a risk in later trimesters).

Breast-feeding: Study report or clinical data on weaning children are not available.

References:

1. http://www.micromedexsolutions.com/
2. http://www.rxlist.com/

Meaning:

Hemoptysis- The act of coughing up blood or blood-stained mucus.

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Drug News – Around the Globe

1. Drug: Cangrelor* **Country: USA**

Cangrelor belongs to a class of antiplatelet drug.

Approved Indications: Cangrelor intravenous form is approved for adult patients undergoing percutaneous coronary intervention (PCI), a procedure used to open a blocked or narrowed coronary artery to improve blood flow to the heart muscle.

Side-effects: Bleeding[1].

2. Drug: Eluxadoline* **Country: USA**

Eluxadoline is a mu-opioid receptor agonist.

Approved Indications: Eluxadoline in tablet form is approved for the treatment of irritable bowel syndrome with diarrhea (IBS-D) in adult men and women.

Side-effects: Constipation, nausea and abdominal pain[1].

3. Drug: Rifaximin** **Country: USA**

Rifaximin is an antibiotic derived from rifampin.

Approved Indications: Rifaximin in tablet form is approved for the treatment of irritable bowel syndrome with diarrhea (IBS-D) in adults. Earlier this drug was approved for the treatment of travelers' diarrhea caused by E. coli and for prophylaxis of hepatic encephalopathy.

Side-effects: Nausea and an increase in alanine aminotransferase (ALT), a liver enzyme[1].

4. Drug: Sirolimus** **Country: USA**

Sirolimus is an immunosuppressant.

Approved Indications: Sirolimus is approved to treat lymphangioleiomyomatosis (LAM), a rare, progressive lung disease that primarily affects women of childbearing age. Earlier this drug was approved to prevent organ rejection in patients 13 years and older receiving kidney transplants.

Side-effects: Lip ulcers, diarrhea, abdominal pain, nausea, sore throat, acne, chest pain, leg swelling, upper respiratory tract infection, headache, dizziness, muscle pain and elevated cholesterol[1].

5. Drug: Deoxycholic Acid* **Country: USA**

Deoxycholic Acid is a cytolytic drug.

Approved Indications: Deoxycholic acid injection is approved to treat adults with moderate-to-severe fat below the chin, known as submental fat. This drug is not approved and is not recommended for the treatment of fat outside of the submental area.

Side-effects: Swelling, bruising, pain, numbness, redness and areas of hardness in the treatment area[1].

6. Drug: Ivabradine** **Country: USA**

Ivabradine is cardiotonic agent.

Approved Indications: Ivabradine tablet is approved for use in certain people who have long-lasting (chronic) heart failure caused by the lower-left part of their heart not contracting well. Earlier this drug was indicated for patients who have symptoms of heart failure that are stable.

Side-effects: Hypertension, bradycardia, atrial fibrillation and temporary vision disturbance[1].

7. Drug: Aflibercept* **Country: USA**

Ivabradine is an inhibitor of vascular endothelial growth factor (VEGF).

Approved Indications: Aflibercept injection is approved to treat diabetic retinopathy in patients with diabetic macular edema.

Side-effects: Bleeding of the conjunctiva, eye pain and ocular hypertension[1].

8. Drug: Cholic Acid* **Country: USA**

Cholic acid is a bile acid replacement therapy that corrects deficiencies due to defective biosynthesis or intestinal malabsorption.

Approved Indications: Cholic acid is approved as capsule form to treat adult and pediatric patients with bile acid synthesis due to single enzyme defects and peroxisomal disorders.

Side-effects: Diarrhea[1].

9. Drug: Dinutuximab* **Country: USA**

Dinutuximab is an antibody that binds to the surface of neuroblastoma cells.

Approved Indications: Dinutuximab is approved as first-line therapy for pediatric patients with high-risk neuroblastoma.

Side-effects: Severe pain, fever, low platelet counts, infusion reactions, low blood pressure, hyponatremia, hypokalemia, hypocalcemia, elevated liver enzymes, anemia, vomiting and diarrhea[1].

10. Drug: Isavuconazonium sulfate* **Country: USA**

Isavuconazonium sulfate is an antifungal drug.

Approved Indications: Isavuconazonium sulfate is approved to treat adults with invasive aspergillosis and invasive mucormycosis, rare but serious infections. This drug is available as oral and intravenous formulations.

Side-effects: Nausea, vomiting, diarrhea, headache, abnormal liver function tests, hypokalemia, constipation, shortness of breath (dyspnea) and cough[1].

Reference: www.fda.gov/

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

Meanings: Hepatic encephalopathy- the changes in brain function that occur when the liver is unable to remove toxins from the blood, **Cytolytic-** The dissolution or destruction of a cell, **Bradycardia-** abnormal slow heart rate, **Ocular hypertension-** increased pressure inside the eye, **Vascular endothelial growth factor**-A signalling protein that promotes the growth of new blood vessels, **Peroxisomal disorders-** a class of medical conditions caused by defects in peroxisome functions, **Neuroblastoma**- a rare cancer that develops from immature nerve cells found in several areas of the body, **Hyponatremia**- low sodium concentration in the blood, **Hypokalemia**- low potassium concentration in the blood, **Hypocalcemia**- low calcium concentration in the blood, **Aspergillosis**- an infection caused by a fungus Aspergillus, **Mucormycosis**- an infection caused by a fungus Mucoromycotina

Safety Alerts

1. Drugs: SGLT2 inhibitors-Canagliflozin, Dapagliflozin**
Country: USA

-May increases the risk of ketoacidosis

Sodium- Glucose Co-transporter-2 (SGLT2) inhibitors like Canagliflozin, Dapagliflozin are antidiabetic drugs used with diet and exercise to lower blood sugar in adults with type 2 diabetes.

Alert: The USFDA warns that this class of drugs may cause ketoacidosis like difficulty in breathing, nausea, vomiting, abdominal pain, confusion and unusual fatigue or sleepiness.

Hence, KSPC-DIRC alerts the healthcare professionals to be cautious while prescribing SGLT2 inhibitors[1].

2. Drugs: Amiodarone Vs Ledipasvir/Sofosbuvir** **Country: USA**

-May increases the risk of symptomatic bradycardia

Amiodarone is an antiarrhythmic drug and Ledipasvir/Sofosbuvir is antiviral drugs, to treat chronic hepatitis-C infection.

Alert: The USFDA alerts that serious risk of symptomatic bradycardia can occur when Amiodarone is taken together with Ledipasvir/ Sofosbuvir combination or with Sofosbuvir alone for the treatment of hepatitis C infection.

Hence, KSPC-DIRC alerts the healthcare professionals to be cautious while prescribing Amiodarone and Ledipasvir/ Sofosbuvir[1].

3. Drug: Ferumoxytol* **Country: USA**
-May cause serious, potentially fatal allergic reactions

Ferumoxytol belongs to a class of Parental Iron Replacement therapy. This drug is used to treat Iron deficiency anemia in adult patients with chronic kidney disease.

Alert: The USFDA is warning that this drug can cause serious, potentially fatal allergic reactions like breathing problems, low blood pressure, lightheadedness, dizziness, swelling, a rash, or itching during or after the drug administration.

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

Reference: www.fda.gov/

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

Meaning: Ketoacidosis-High concentrations of blood acids called ketone bodies in blood.

Continuing Pharmacy Education (CPE)

Dispensing Instructions to the Pharmacists

Urinary Incontinence-Drug Therapy

Urinary incontinence is defined as the involuntary loss of control on the urinary bladder leading to leakage or overflow of urine. It is a common and distressing problem, which may have a large impact on quality of life.

Urinary incontinence isn't a disease, it's a symptom. It can be caused due to obesity family history of urinary incontinence, pregnancy, childbirth, constipation, disorder of nervous system or any other underlying medical conditions or physical problems.

There are many different types of incontinence, depending upon the cause involved like stress incontinence, urge incontinence, overflow incontinence, functional incontinence, due to mixed influences.

There are several treatment strategies for urinary incontinence.

Nonpharmacologic therapies include bladder training, pelvic floor muscle training, electrical stimulation, use of vaginal cones and prompted voiding techniques.

Drug therapy includes the use of anticholinergics, antidepressants and adrenergic drugs. Surgical intervention is generally reserved for patients with stress urinary incontinence who fails conservative therapies.

Below is a brief overview of some drugs under each class.

Drugs	Use	Warnings*	Less serious side effects	Advice**
Anticholinergics Oxybutynin, Tolterodine	Treats overactive bladder with symptoms of urge urinary incontinence, urgency and frequency.	Prescription to be reconfirmed in case of patients with a history of kidney disease, liver disease, myasthenia gravis, heart disease, high blood pressure, glaucoma or stomach or bowel problems (including colitis, chronic constipation, a bowel blockage).	Dry mouth, drowsiness, somnolence, dizziness or blurred vision or eye pain, significant changes in urine volume or pain or difficulty on urination.	Advise patient to consume plenty of fluids and dietary fibre to help avoid constipation. Advice the patient to avoid driving vehicle or operate machinery while taking this medicine. Strictly avoid alcohol.
Alpha-Adrenergic agonists Darifenacin, Solifenacin	Treats overactive bladder with symptoms of urge urinary incontinence, urgency and frequency.	Prescription to be reconfirmed in case of patients with a history of kidney disease, liver disease, myasthenia gravis, narrow-angle glaucoma or stomach or bowel problems (such as constipation or ulcerative colitis)	Blurred vision, headache, confusion, drowsiness, urinary tract infection, nausea, constipation, dyspepsia or xerostomia, rash.	Take this drug with a full glass of water preferably after food or milk to avoid stomach irritation.
Antidepressants Doxepin, Duloxetine	Use to improve the bladder stability.	Prescription to be reconfirmed in case of patients with a history of kidney disease, liver disease, diabetes, glaucoma, heart disease, high or low blood pressure, or problems with urination.	Dizziness, somnolence, dry mouth, constipation, decreased appetite, hyperhidrosis, urinary retention and orthostatic hypotension	Do not discontinue this drug without the advice of the doctor. 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.
Antispasmodic Trospium, Flavoxate	Treats the overactive bladder muscle dysfunction.	Prescription to be reconfirmed in case of patients with a history of bleeding disorder, glaucoma, enlarged prostate or intestinal or urinary tract blockage.	Nausea, vomiting, dizziness, drowsiness, somnolence, blurred vision, dry mouth or throat, nervousness, headache,	Take this drug with a full glass of water preferably with food or milk to avoid stomach irritation. Take the drug as prescribed.

Note: *Make sure that the patient has informed the doctor the pregnancy and lactating status. **Store the medicine in a closed container at room temperature, away from heat, moisture and direct light. Keep all medicine out of the reach of children.

References:

1 Handbook of Pharma SOS, Educational Series-III, 6th Edition 2014, published by Karnataka State Pharmacy Council, Bengaluru.

2. www.micromedexsolutions.com, Micromedex (R) 2.0, 2002-2015, Truven Health Analytics Inc. 3. http://emedicine.medscape.com/

Meanings: Hyperhidrosis- Abnormally increased sweating, **Somnolence-** Eye(s) sensitive to bright light

Drug Usage in Special Population - Pediatrics and Geriatrics

Anti-Parkinson Drugs (oral)

Drug (Oral)	Use in Children (Paediatrics)	Use in Elderly (Geriatric)
Biperiden	Safety and effectiveness in children have not been established.	No dosage adjustment required.
Levodopa	N/A	Dose reduction may be required in geriatrics and in patients with impaired renal function.
Levodopa + Benserazide	Safety and efficacy have been established. Safe to use in children.	No dosage adjustment required.
Levodopa + Carbidopa	Safety and effectiveness in children have not been established.	Dosage adjustment necessary in geriatric patients.
Pramipexole	Safety and effectiveness in children have not been established.	Dose reduction may be required in patients with impaired renal function.
Procyclidine	N/A	Dosage adjustment necessary in geriatric and in patients with impaired renal function.
Rasagiline	Safety and effectiveness in children have not been established.	Dosage adjustment necessary in hepatic impaired patients.
Trihexyphenidyl	Safety and effectiveness in children have not been established.	Dosage adjustment necessary in geriatric patients.

Reference: Drug Usage in special Population-Pediatrics and Geriatrics, Educational Series-II, 5th Edition 2014, published by Karnataka State Pharmacy Council, Bengaluru.

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Drug Usage in Special Population - Pregnancy and Lactation

Anti-Parkinson Drugs (oral)

Drug (Oral)	Use in Pregnancy (Teratogenicity)	Use in Breastfeeding (Lactation)
Biperiden	USFDA Category C. Limited data on Biperiden use during pregnancy. Use only if the potential benefit outweighs the potential risk to the fetus.	Data not available. Medical advice is necessary.
Levodopa	USFDA Category C. Insufficient data to confirm its safety in pregnancy. Use only if the potential benefit outweighs the potential risk to the fetus.	Excreted in breast milk. Medical advice is necessary.
Levodopa + Benserazide	USFDA Category C. Insufficient data to confirm its safety in pregnancy. Use only if the potential benefit outweighs the potential risk to the fetus.	Data not available. Medical advice is necessary.
Levodopa + Carbidopa	USFDA Category C. Limited data on Levodopa + Carbidopa use during pregnancy. Use only if the potential benefit outweighs the potential risk to the fetus.	Data not available. Medical advice is necessary.
Pramipexole	USFDA Category C. Limited data on Pramipexole use during pregnancy. Use only if the potential benefit outweighs the potential risk to the fetus.	Data not available. Medical advice is necessary.
Procyclidine	ADEC Category A. Insufficient data to confirm its safety in pregnancy. Use only if the potential benefit outweighs the potential risk to the fetus.	Data not available. Medical advice is necessary.
Rasagiline	USFDA Category C. Limited data on Rasagiline use during pregnancy. Use only if the potential benefit outweighs the potential risk to the fetus.	Excreted in milk. Medical advice is necessary.
Trihexyphenidyl	Data not available. Avoid	Data not available. Medical advice is necessary.

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.

ADEC Category A: Drugs which have been taken by a large number of pregnant women and women of childbearing age without any proven increase in the frequency of malformations or other direct or indirect harmful effects on the fetus having been observed.

Reference: Drug Usage in special Population-Pregnancy and Lactation, Educational Series-I, 5th Edition 2014, published by Karnataka State Pharmacy Council, Bengaluru.

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ಔಷಧ ತಜ್ಞರಿಗೊಂದು ಸಲಾಮ್

Continued from - Jan-Mar 2015 issue

ಫಾರ್ಮಸಿಸ್ಟ್ ಅಥವಾ ಕೆಮಿಸ್ಟ್ ಎಂದರೆ ಮೆಡಿಕಲ್ ಸ್ಟೋರ್‌ನಲ್ಲಿ ಔಷಧ ಮಾರಾಟ ಮಾಡುವವರಷ್ಟೇ ಅಲ್ಲ, ಆರೋಗ್ಯ ಕ್ಷೇತ್ರದಲ್ಲಿ ವೈದ್ಯಕೀಯ ವಿಜ್ಞಾನರಂಗದಲ್ಲಿ ಪ್ರತ್ಯಕ್ಷವಾಗಿ, ಪರೋಕ್ಷವಾಗಿ ರೋಗಿಗಳ ವ್ಯಕ್ತಿಗಳ ರೋಗ ನಿವಾರಣೆಗಾಗಿ, ಆರೋಗ್ಯ ಸುಧಾರಣೆಗಾಗಿ, ಸಮಷ್ಟಿಯ ಹಿತಕ್ಕಾಗಿ ಅಹರ್ನಿಶಿ ದುಡಿಯುವವರಲ್ಲಿ ಫಿಷಧತಜ್ಞರೂ ಒಬ್ಬರು ! ಔಷಧತಜ್ಞ ಅಥವಾ ಕೆಮಿಸ್ಟ್ ಅಥವಾ ಫಾರ್ಮಸಿಸ್ಟ್ ಇವರೇ ವೈದ್ಯ ಮತ್ತು ರೋಗಿಯ ನಡುವಿನ ಮುಖ್ಯ ಕೊಂಡಿ !

ಮೆಡಿಕಲ್ ಸ್ಟೋರ್, ಫಾರ್ಮಸಿಸ್ಟ್ ಕೆಮಿಸ್ಟ್, ಡ್ರಗ್ಗಿಸ್ಟ್ – ಇವೇ ಮೊದಲಾದವುಗಳನ್ನು ನಮ್ಮ ದಿನ ನಿತ್ಯದ ಜೀವನದಲ್ಲಿ ಹಲವು ಬಾರಿ ಬಳಸುತ್ತಲೇ ಇರುತ್ತೇವೆ.

ದ್ರವ್ಯಗುಣಶಾಸ್ತ್ರ ಅಥವಾ ಫಾರ್ಮಸಿ ಎಂಬುದು ಆರೋಗ್ಯಶಾಸ್ತ್ರವನ್ನೂ ಔಷಧೀಯ ದ್ರವ್ಯಗಳ ಶಾಸ್ತ್ರವನ್ನೂ ಬೆಸೆಯುವ ವೈದ್ಯಕೀಯ ವಿಜ್ಞಾನದ ವಿಭಾಗ! ಫಾರ್ಮಸಿಸ್ಟ್ ಅಥವಾ ಕೆಮಿಸ್ಟ್ ಅಥವಾ ಔಷಧತಜ್ಞ ಇದರ ಭಾಗ! ಇಂದಿನ ಔಷಧ ತಜ್ಞರು ಪಾರಂಪರಿಕ ರೀತಿಯಲ್ಲಿ ಔಷಧೀಯ ಸಂಯೋಜನೆ ಮತ್ತು ವಿತರಣೆಯನ್ನು ಮಾಡುವುದರ ಜೊತೆಗೆ ಆಧುನಿಕ ಕಾಲದ ಅವಶ್ಯಕತೆಗಳಾದ ಔಷಧದ ಕುರಿತಾದ ಮಾಹಿತಿ ನೀಡುವುದು, ದವಾಖಾನೆಗೆ ಸಂಬಂಧಿಸಿದ ಸೇವೆಗಳನ್ನು ರೋಗಿಗೆ ನೀಡುವುದು ಪರಿಣಾಮಕಾರಿ ಹಾಗೂ ಉತ್ತಮ ಮಟ್ಟದ ಔಷಧಿ ಒದಗಿಸುವ ನಿಟ್ಟಿನಲ್ಲಿ ಕೆಲಸ ಮಾಡುವುದು ಮುಂತದವುಗಳಲ್ಲಿ ಸಿದ್ದಹಸ್ತರು.

ಡ್ರಗ್ ಥೆರಪಿ ಅಥವಾ ಔಷಧೀಯ ಚಿಕಿತ್ಸಾ ವಿಧಾನಗಳಲ್ಲಿ ಔಷಧ ತಜ್ಞ ಅಥವಾ ಫಾರ್ಮಸಿಸ್ಟ್ ಪರಿಣತಿ ಹೊಂದಿರುವುದರಿಂದಲೇ ಅವರನ್ನು ಪ್ರಾಥಮಿಕ ಆರೋಗ್ಯ ವೃತ್ತಿಪರರು (Primary health professionals) ಎಂದು ಕರೆಯಲಾಗುತ್ತದೆ.

ವೈದ್ಯರ ಮತ್ತು ರೋಗಿಗಳ ನಡುವಿನ ಬೆಸುಗೆಯಾಗಿ ಕಾರ್ಯ ಮಾಡುವ ಔಷಧ ತಜ್ಞರು, ರೋಗಿಗಳ ಆರೋಗ್ಯ ವೃದ್ಧಿ ಹಾಗೂ ರೋಗ ನಿವಾರಣೆಯ ಕಾರ್ಯಕ್ಷೇತ್ರದಲ್ಲಿ ತಮ್ಮದೇ ಆದ ಕೊಡುಗೆಗಳನ್ನು ನೀಡಿದ್ದಾರೆ.

ಫಾರ್ಮಸಿ ಎಂಬ ಶಬ್ದ ಫಾರ್ಮಾ ಎನ್ನುವ ಶಬ್ದದಿಂದ ಹುಟ್ಟಿಕೊಂಡಿದೆ. 15–17ನೇಯ ಶತಮಾನದಿಂದ ಈ ಶಬ್ದ ಬಳಕೆಗೆ ಬಂತು. ಈ ಶಬ್ದದ ಉತ್ಪತ್ತಿಯು ಗ್ರೀಕ್ ಶಬ್ದದ ಫಾರ್ಮಾಕೋಸ್ ಎಂಬ ಮೂಲವನ್ನು ಹೊಂದಿದೆ. ಇದರ ಅರ್ಥ ಔಷಧ ಎಂಬುದಾಗಿದೆ.

ಪ್ರಾಚೀನ ಕಾಲದಲ್ಲಿ ಔಷಧ ತಜ್ಞರು ಔಷಧದ ತಯಾರಿ, ಮಾಹಿತಿ ನೀಡುವುದು ಇವೇ ಮೊದಲಾದ ಕಾರ್ಯಗಳ ಜೊತೆಗೆ ಮಿಡ್‌ವೈಫರಿ ಹಾಗೂ ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಗಳಲ್ಲಿ ವೈದ್ಯರಿಗೆ ಸಹಾಯ ಮಾಡುತ್ತಿದರು.

ಅಮೇರಿಕಾ, ಕೆನಡಾ ಮೊದಲಾದ ದೇಶಗಳಲ್ಲಿ ಫಾರ್ಮಸಿ ಅಥವಾ ಡ್ರಗ್ ಸ್ಟೋರ್‌ಗಳಲ್ಲಿ ಔಷಧಗಳ ಜೊತೆಗೆ ಸೌಂದರ್ಯವರ್ಧಕಗಳನ್ನು ಮಾರಾಟ ಮಾಡುತ್ತಾರೆ. ಇದೇ ರೀತಿ ಭಾರತದಲ್ಲಿಯೂ ಮೆಡಿಕಲ್ ಸ್ಟೋರ್‌ಗಳಲ್ಲಿ ಔಷಧಗಳನ್ನು, ಸೌಂದರ್ಯವರ್ಧಕಗಳನ್ನು ಗಿಡಮೂಲಿಕೆಗಳ ಮತ್ತು ನೈಸರ್ಗಿಕ ಔಷಧ ಹಾಗೂ ಉತ್ಪನ್ನಗಳನ್ನು ಮಾರಾಟ ಮಾಡುತ್ತಾರೆ.

ವಿಶ್ವ ಆರೋಗ್ಯ ಸಂಸ್ಥೆಯ ಪ್ರಕಾರ ಇಂದು ಸರಿ ಸುಮಾರು 2.6 ಮಿಲಿಯನ್ ಫಾರ್ಮಸಿಸ್ಟ್‌ಗಳಿದ್ದಾರೆ. ಎಂದರೆ ಅವರ ಮಹತ್ವ ಅರಿವಾಗುತ್ತದಷ್ಟೆ ! ಔಷಧ ಶಾಸ್ತ್ರ ಅಥವಾ ಫಾರ್ಮಸಿಯನ್ನು ವೈದ್ಯಕೀಯ ವಿಜ್ಞಾನದ ಒಂದು ಭಾಗವಾಗಿ 19ನೇಯ ಶತಮಾನದ ಆದಿಯಲ್ಲಿ ದೃಢೀಕರಿಸಲಾಯಿತು.

ಆದರ ಚರಿತ್ರೆ ಪುಟಗಳನ್ನು ತಿರುವಿದರೆ ಔಷಧಶಾಸ್ತ್ರ ಹಂತ ಹಂತವಾಗಿ ಬೆಳೆದುಬಂದದ್ದು, ವಿಶ್ವಾದ್ಯಂತ ಅದರ ಬೇರುಗಳನ್ನು ಪಸರಿಸಿರುವುದು ತಿಳಿದು ಬರುತ್ತದೆ.

ಚರಿತ್ರೆಯಲ್ಲಿ ಮೊದಲ ಬಾರಿಗೆ ಅತ್ಯಂತ ಅಚ್ಚುಕಟ್ಟಾಗಿ ಫಿಷಧಗಳ ಕುರಿತಾದ ಜ್ಞಾನವನ್ನು ಸಂಹಿತೆ (ಕಂಪೈಲೇಶನ್) ರೂಪದಲ್ಲಿ ಸಂಗ್ರಹಿಸಿಟ್ಟ ದಾಖಲೆ ನಮ್ಮ ಭಾರತದ, ಸುಶ್ರುತಾಚಾರ್ಯರಿಗೆ ಸಲ್ಲುತ್ತದೆ. ಅವರ ಕಾಲ ಕ್ರಿ.ಪೂ. 6ನೇಯ ಶತಮಾನ !

ಭಾರತದಲ್ಲಿ ಪ್ರಾಚೀನ ಕಾಲದಲ್ಲೇ ಔಷಧಿಗಳ ತಯಾರಿ, ನೀಡುವ ಕ್ರಮ, ಔಷಧೀಯ ಮೂಲಿಕೆಗಳ ಕುರಿತಾದ ಜ್ಞಾನ, ಇವುಗಳ ಕುರಿತಾಗಿ ನಿಖರ ಜ್ಞಾನವಿತ್ತು. ಚರಕಾಚಾರ್ಯರ ಚರಕ ಸಂಹಿತೆ ಹಾಗೂ ಶಾರಂಗಧರ ಮುನಿಯ ಶಾರಂಗಧರ ಸಂಹಿತೆ ಇದಕ್ಕೆ ಉತ್ತಮ ಉದಾಹರಣೆ.

ಸುಮೇರಿಯನ್ ಚರಿತ್ರೆಯಲ್ಲಿ 'ಕ್ಲೇ ಟ್ಯಾಬ್ಲೇಟ್' ಎಂಬ ಔಷಧವನ್ನು ರೋಗಿಗೆ ಕ್ರಿ.ಪೂ. 6ನೇಯ ಶತಮಾನದಲ್ಲಿ ನೀಡಿರುವ ದಾಖಲೆ ದೊರೆಯುತ್ತದೆ.

ಚೀನಾ ದೇಶದಲ್ಲಿ 'ಮೆಟೀರಿಯಾ ಮೆಡಿಕಾ' ಎಂಬ ಗ್ರಂಥ ಕ್ರಿ.ಶ ಒಂದನೆಯ ಶತಮಾನದಲ್ಲಿ ಶೆನಾಂಗ್ ಜಿಂಗ್ ಎಂಬ ತಜ್ಞರಿಂದ ರಚಿಸಲ್ಪಟ್ಟಿತು. ಇದರಲ್ಲಿ ಆಯಾ ರೋಗಗಳಿಗೆ ಆಯಾ ಔಷಧಗಳೆಂದು ದಾಖಲೆ ಮಾಡಲಾಗಿದೆ.

ಪ್ರಾಚೀನ ಈಜಿಪ್ತನಲ್ಲೂ 'ಎಬರ್ಸ್ ಪಪೈರಸ್' ಎಂಬ ಗ್ರಂಥದಲ್ಲಿ ಔಷಧಿಗಳ ಕುರಿತಾದ ಜ್ಞಾನವನ್ನು ಕ್ರಿ.ಪೂ. 1550 ರಲ್ಲೇ ದಾಖಲು ಮಾಡಲಾಗಿದೆ. ಜೊತೆಗೆ ಎಡ್ವಿನ್ ಸ್ಮಿತ್ ಪಪೈರಸ್ ಎಂಬ ಗ್ರಂಥವು ಕ್ರಿ.ಪೂ. 16ನೇ ಶತಮಾನದಲ್ಲಿ ರಚಿಸಲ್ಪಟ್ಟಿತು.

ಗ್ರೀಕ್ ಚರಿತ್ರೆಯಲ್ಲಿ ಡಿಯೋಸ್ಕೊರಡೈಸ್ ಎಂಬ ತಜ್ಞ ಕ್ರಿ.ಶ.ಒಂದನೆಯ ಶತಮಾನದಲ್ಲಿ ಐದು ಭಾಗಗಳನ್ನು ಹೊಂದಿರುವ ಔಷಧೀಯ ಗ್ರಂಥಗಳನ್ನು ಬರೆದಿದ್ದಾನೆ.

ಮಧ್ಯಕಾಲೀನ ಯುಗದಲ್ಲಿ ಬಗ್ದಾದ್‌ನಲ್ಲಿ ಪ್ರಥಮ ಫಾರ್ಮಸಿ ಅಥವಾ ಡ್ರಗ್ ಸ್ಟೋರ್ (ಔಷಧದ ಅಂಗಡಿ) ತೆರೆಯಲಾಯಿತು.

ಇಟೆಲಿಯಲ್ಲಿ 14ನೆಯ ಶತಮಾನದಲ್ಲಿ ಔಷಧದ ಅಂಗಡಿ ಸ್ಥಾಪಿತವಾಯಿತು.

ಆಧುನಿಕ ವಿಜ್ಞಾನದಲ್ಲಿ ಫಾರ್ಮಕಾಲಜಿಯ ಉದಯವಾಗುವ ಮೊದಲು ಗಿಡಮೂಲಿಕೆ, ಖನಿಜ ಲವಣ ಮೊದಲಾದವುಗಳಿಂದ ಶಾಸ್ತ್ರೀಯವಾಗಿ ಔಷಧಿ ತಯಾರಿಸುವ ಅರಿವು ಇದ್ದಿತು. ತದನಂತರ ಆಧುನಿಕ ವಿಜ್ಞಾನದ ಮಹತ್ತರ ಸಂಶೋಧನೆ, ಪ್ರಯೋಗಗಳಿಂದ ರಾಸಾಯನಿಕ ದ್ರವ್ಯಗಳನ್ನು ಹಾಗೂ ಗಿಡಮೂಲಿಕೆಗಳಲ್ಲಿರುವ ರಾಸಾಯನಿಕ ವಸ್ತುಗಳನ್ನು ತೆಗೆದುಕೊಂಡು ಔಷಧಿಗಳನ್ನು ತಯಾರು ಮಾಡುವ ವೈದ್ಯಕೀಯ ವಿಜ್ಞಾನದ ಮಹತ್ವದ ಭಾಗವಾಗಿ ಫಾರ್ಮಕಾಲಜಿ ಪ್ರಖ್ಯಾತಿ ಪಡೆಯಿತು.

ವಿವಿಧ ರಾಸಾಯನಿಕಗಳಿಂದಲೂ ಔಷಧ ತಯಾರಿಸುವುದು ಈ ಕಾಲಘಟ್ಟದ ಪ್ರಾಮುಖ್ಯ.

ಕೃತಜ್ಞತೆಗಳು

ಡಾ॥ ಅನುರಾಧ ಕಾಮತ್, ಶ್ರೀ ಭುಬನೇಂದ್ರ ಕ್ಲೀನಿಕ್, ಉಪ್ಪುಂಡ, ಉಡುಪಿ

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ಮುಖ್ಯ ಸಂಪಾದಕರು, ತರಂಗ ಸಂಪುಟ 33, ಸಂಚಿಕೆ 1, ಜನವರಿ 1, 2015

to be continued…

Pharmacy Council of India (PCI) Meet in Bengaluru

The 97th Central Council meeting of the Pharmacy Council of India (PCI) was held in Bengluru on 19th, 20th & 21st June 2015 . The meeting was hosted by Karnataka State Pharmacy Council and Karnataka Pharmacy Council Registered Pharmacist Welfare Trust and was inaugurated on 20th June 2015 by Dr. B. Suresh, President of Pharmacy Council of India. Sri. Raghuram Bhandary, Drugs Controller for the State of Karnataka was of the Chief Guest. Dr. B. Suresh rightfully used the occasion to invite comments and suggestion from the President, Registrar and Members of the Karnataka State Pharmacy Council.



More than 80 members of Pharmacy Council of India attended the meeting. The occasion was also an opportunity for the Principals and Management heads of various Pharmacy colleges and Karnataka State Pharmacy Council to have interaction with the President, Registrar and members of Pharmacy Council of India.











The President, Vice-President, Registrar, Members and staff of Karnataka State Pharmacy Council acknowledges the co-operation, guidance and participation of Dr. M.D. Karvekar, EC member, Pharmacy Council of India, Dr. T.V. Narayana, Vice-President, IPA (Education Division), Sri. Y. Veeranarayana Gowda, Central Executive Member of IPA and Community Pharmacist, Dr. Divakar Goli, Principal, Acharya & BM Reddy College of Pharmacy, Dr. Raman Dang, Principal, Krupanidhi College of Pharmacy, Dr. Shobha Rani R. H, Principal, Al-Ameen College of Pharmacy, Dr. D. Narasimha Reddy, Principal, Vivekananda College of Pharmacy, Dr. Ramesh C, Professor, Visveswarapura Institute of Pharmaceutical Sciences and the staff & students for making this event colorful and successful.







The President, Vice-President, Registrar and members of Pharmacy Council of India thanked and honored the President, Vice-President, Registrar, Members and staff of Karnataka State Pharmacy Council and their team for meticulously organizing the event to the best satisfaction of all the delegates.

KSPC News

Congratulations

The President, Vice-President, Registrar, Members and staff of Karnataka State Pharmacy Council congratulates Dr. Sirse Krantikumar, Principal, Karnataka College of Pharmacy, Bidar and member of Karnataka State Pharmacy Council, Bangalore for being nominated as 'Senate Member' of the Rajiv Gandhi University of Health Sciences, Bangalore for a period of three years under Principals category with effect from 17th June 2015.

Visitors of Honour

1. Mizoram State Pharmacy Council

Sri. Lal Sawma, Drugs Controller for the State of Mizoram & President of Mizoram State Pharmacy Council and Dr.H. Lalhlenmawia, HOD, Dept. of Pharmacy, Regional Institute of Paramedical and Nursing Sciences, Aizwal, Maizoram visited this council on 22nd June 2015 to study and discuss the functioning methods of this council and Drug Information and Research Center.

2. Gujarat State Pharmacy Council

Sri.Montukumar Mukeshkumar Patel, President, Sri. Gilbert C. Macwan, Registrar and the members of Gujarat State Pharmacy Council visited this council on 23rd May 2015. The delegates discussed the modalities of the operation of this council and functioning of the Drug Information and Research Center. They appreciated the activity and the development of Karnataka State Pharmacy Council and Drug Information and Research Center. They were presented a set of KSPC publications by Sri. Gundu Rao D.A., President and Sri. Bhagavan P.S., Registrar.

Additional Information on any article is available on request
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