



# AMERICAN JOURNAL OF PHARMTECH RESEARCH

Journal home page: <http://www.ajptr.com/>

## Parent Perspectives of OTC Medicines In Different Diseased Conditions and Their Perspectives

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### ABSTRACT

OTC medicines are medicines sold directly to a consumer without a prescription from a healthcare professional. Which are legally allowed to be sold by pharmacists which is also known as non-prescription medicine. OTC medicines have Advantages and Disadvantages Healthy adults who utilize OTC prescriptions periodically and appropriately have an okay of unfavorable effects. However, certain individuals are at more serious risk, utilization of OTC drug might cause unsafe effects. In this condition we should know about OTC medication. Here examined about OTC meds in specific unhealthy circumstances and their viewpoints, for example, Asthma, Diabetes, Hypertension, Hyperlipidaemia, and Hear failure. Use of non prescription drugs in this situation may leads to harmful effects there for every patient and pharmacist should be aware about it. Patient counselling plays important role in effective treatment. The safe and effective use of drugs depends on patients' information about their medication .During counselling the pharmacist should assess the patient's understanding about their illness and treatment and supply individualized advice and data which can assist the patients to require their medication. Patient counselling is an essential component of clinical pharmacy practice in hospital and in community pharmacy settings. Counseling enhances the patients understanding of their illness and its treatment and may improve adherence and therapeutic out come. It allows pharmacists to gain first hand knowledge of medication use from the patients perspectives.

**Keywords:** OTC medicines, Patient counseling, non prescription

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Received 10 October 2022, Accepted 30 October 2022

Please cite this article as: Nowrin N *et al.*, Parent Perspectives of OTC Medicines In Different Diseased Conditions and Their Perspectives . American Journal of PharmTech Research 2022.

## INTRODUCTION

O.T.C medicines are medicines sold directly to a consumer without a prescription from a healthcare professional. Which are legally allowed to be sold by pharmacists which is also known as non-prescription medicine. OTC products can be helpful in treating symptoms of certain conditions. If your symptoms continue, see your healthcare provider<sup>1</sup>.

In early time most drugs were available without a prescription before the food and drug administration (FDA) existed, many OTC drugs are highly potent drugs which leads to side effects. FDA act enacted in 1938, gave the FDA some authority to issue regulation but the act did not provide clear guidelines as to which drug could be sold by prescription only and which could be sold over the counter.<sup>9</sup>

An amendment to the FD AND C act in 1951 attempted to clarify difference between OTC and prescription drugs, and to deal with issue of drug safety. AS noted by an amendment to the FD and C act to 1962 OTC drugs were required to be both effective and safe. However determining effectiveness and safety can be difficult, effective of drug is different for different persons<sup>8</sup>.

The food and drug administration approves an OTC preparation only when the approval process leaves no doubt that the dose strength is generally recognized as safe and effective when taken according to labelled direction. To be approved by the FDA the manufacture must include all information on the product label that is necessary for the safe and effective use of the product .Information should included dose and frequency of administration for different age group as well as precautions, warning and expiration dates<sup>2</sup>

### **Advantages**

- comparatively cheaper
- Time saving medication .Some patients do not want to spend much time at a physician's clinic.
- Self-treat
- Self-manage
- Minimum number of side effects compared to prescription medication<sup>10</sup>

### **Disadvantages**

- Misdiagnosis occurs
- Patient may choose wrong drug
- More difficult to study a drugs effects
- Poorer compliance
- Patient may not known reaction or interaction

- Ineffective treatment may result in progression of disease<sup>4</sup>.

### **Types of OTC Medication**

- Analgesics<sup>7</sup>
- Cough suppressants
- Anti-acne drugs
- NSAIDS
- Antiseptics
- Decongestants
- Antacids
- Antifungal
- Antihistamine
- Smoking cessation drugs

### **Most Commonly OTC Drugs Used For**

- Pain -78%
- Cough, Cold, and Sinus -52%
- Heartburn, Stomach -52%
- Constipation, Diarrhea -37%
- Skin problems -1.5%

### **Labeling Requirements**

OTC medications have many advantages yet additionally convey dangers like unfriendly medication responses, in light of the fact that these items don't need the oversight of a doctor<sup>4</sup>. Or drug specialist. Marking assumes a key part in imparting data expected for their security and viability. In the federal register of March 1999, the food and drug administration distributed the OTC medication realities name regulation. This guideline expected most OTC items to conform to the new arrangement and content necessity by May 2022. OTC marking applies to in excess of 100,000 OTC medication<sup>3</sup>

Naming ought to contain following data, for example<sup>6</sup>,

1. Name of the medicine: Brand or generic name
2. Active ingredients: Name and amount of the product
3. Use: Symptoms or disease the product will treat or prevent
4. Warning: conditions that require before taking the product such as
  - Possible interaction and side effects

- If you are pregnant or breastfeeding ask your doctor before taking the product
  - Keep out of reach of children
5. Inactive ingredients: colour and flavours
  6. purpose: category (antacid, cough suppressant)
  7. Direction: According to age should mention how much to take, how to take
  8. other information: storage conditions<sup>5</sup>

<b>Cetirizine Tablet 10mg</b>
<b>Active ingredients (in each tablet): cetirizine HCl .....10mg</b>
<b>Purpose: Antihistamine</b>
<b>Use:</b> Reduce sneezing, itching, runny nose, and allergy
<b>Warning: Do not use</b> if you are allergic to this product ,ask a doctor before taking the product if you have kidney or liver disease, and pregnant or breastfeeding <b>KEEP OUT OF REACH OF CHILDREN</b>
<b>Direction:</b> adult and children 6years and over: 10mg once a day Adult 65 and over :ask a doctor Children less than 6 ask doctor
<b>Inactive ingredients:</b> corn starch, FD and C blue no 1, lactose monohydrate, magnesium stearate, povidone , titanium dioxide, triacetin and polydextrose
<b>Storage conditions:</b> store between 20-25 degree Celsius

### OTC Medication in Different Diseased Conditions and Their Perspectives

Healthy adults who utilize OTC prescriptions periodically and appropriately have an okay of unfavourable effects. However, certain individuals are at more serious risk, utilization of OTC drug might cause unsafe effects. In this condition we should know about OTC medication. Here examined about OTC meds in specific unhealthy circumstances and their viewpoints, for example,

- Asthma
- Diabetes mellitus
- Heart failure
- Hypertension
- Hyperlipidemia.

### DIABETES MELITUS

Diabetes occurs when the body can't take up sugar (glucose) into its cells and use it for energy. This results in a development of additional sugar in your circulatory system. Ineffectively controlled diabetes can prompt serious results, causing harm to many organs and tissues - including your heart, kidneys, eyes and nerves.

### Pathology

In individuals that are healthy, the pancreas, an organ situated behind the liver and stomach, stomach related enzymes and the hormones insulin and glucagon into the circulatory system to control how much glucose in the body. The arrival of insulin into the blood brings down the degree of blood glucose (straightforward sugars from food) by permitting glucose to enter the body cells, where it is processed. Assuming that blood glucose levels get too low, the pancreas secretes glucagon to stimulate the release of glucose from the liver. Just after a feast, glucose and amino acids are consumed into the circulation system, and blood glucose levels rise strongly. The ascent in blood glucose levels signals significant cells in the pancreas, called beta cells, to emit insulin, which fills the circulation system. In something like 20 minutes after a feast insulin ascends to its peak level. Insulin enables glucose to enter cells in the body, especially muscle and liver cells. Here, insulin and different hormones direct whether glucose will be burned for energy or stored for reuse. At the point when insulin levels are high, the liver quits delivering glucose and stores it in different structures until the body needs it once more. As blood glucose levels arrive at their peak, the pancreas decreases the development of insulin (around 2 - 4 hours after a dinner both blood glucose and insulin are at low levels).

### **OTC Medicines and Diabetic Care**

People with diabetes should be aware while taking OTC medication. Diabetic patients should avoid following OTC medication.

### **AVOIDABLE FACTORS**

#### **Decongestant**

Individuals with diabetes should not take items that contain phenylephrine and pseudoephedrine. These decongestants can raise glucose levels. Both are accessible as OTC medicines. Pseudoephedrine might interfere with blood glucose control and lessen the adequacy of metformin and other diabetic drugs. Screen your glucose levels intently. You might require a dose change of your diabetic prescriptions during and after treatment with pseudoephedrine.

#### **Cough Syrup**

The cough is much of the time the consequence of a cold and this puts extra weight on the body, causing glucose levels to rise. Therefore, dealing with cough in diabetics requires much greater care and attention. Cough syrup contains sugar to mask bad taste. Sugar free syrup should be taken in case of diabetic.

#### **Multivitamins**

Use of multivitamins and minerals not associated with diabetic risk VIT A, C, E and other biomarkers in patient with type 2 diabetes who take oral multivitamins help to reduce diabetic complication. Some multivitamins cause complication in some cases

**e.g.:**

### **Chromium**

A lack of chromium might prompt high glucose levels. It is exceptionally uncommon. If you have kidney disease. Chromium enhancements could additionally harm the kidneys and deteriorate the sickness.

### **Niacin:**

Niacin, a nutrient, can be valuable in patients with high LDL and fatty substances and low HDL when utilized at high dosages; however specialists have generally stayed away from its utilization in diabetics due to its impacts on glucose levels. Niacin might increase glucose levels. Individuals taking insulin, metformin (Glucophage), glyburide (Dibeta, Micronase), glipizide (Glucotrol), or different prescriptions used to treat high blood glucose levels should screen their glucose levels intently while taking niacin supplements. VIT B12 helpful for patient with type 2 diabetic, people who take metformin vitamin b12 deficiency is found

## **ORAL HYGIENE PRODUCTS**

### **Mouth Wash**

Over-the-counter mouthwash includes part of routine oral consideration for some; in any case, possible antagonistic impacts of the drawn out everyday use have not been assessed. Most mouthwash contain antibacterial fixings, which could affect oral organisms basic for nitric oxide development, and thus incline toward metabolic issues including diabetes.



**Figure 1: OTC mouthwash use and risk for pre-diabetes or diabetes**

### **Tooth Paste**

With diabetes your gums are more prone to infection .Tooth paste would have no real effect on diabetes directly. The most important thing is to prevent having gum disease .sugar free toothpaste showed beneficial effect on salivary glucose level and salivary ph level on

Diabetes and non-diabetes population. Colgate for diabetes tooth paste is a clinically proven formula with a unique blend of Ayurvedic ingredients such as madhunashini, neem, jamun, seed extract, and alum

### **Skin Care Products**

Diabetes can possibly dry out the skin and consequently leave it more inclined to wounds and infection. Dry and itchy skin is an open greeting to microorganisms, which further cause skin diseases. Keeping the skin spotless and dry is a critical custom for diabetes patients. There for care ought to be taken while utilizing skin health management product. always use items that are appropriate for your diabetic skin.

Creams can frequently cause accumulation of moisture so individuals with diabetes were recently exhorted not to involve them between toes as this would build infection

Hydroquinone-containing body lotions induce falsely elevated capillary glucose levels that persist up to 60 minutes after use.

### **Alcohol**

Alcohol consumption can worsen diabetes-related medical problems such as disturbances in fat metabolism, nerve damage, and eye disease

### **HERBAL INGREDIENTS**

#### **Aloe VERA-Aloe barbadensis**

In diabetes, aloe Vera has been displayed to fundamentally decrease blood glucose levels. A few examinations report likely collaborations between aloe Vera and antidiabetic drugs. Of note is its cooperation with glibenclamide, a sulphonyl urea which applies its antidiabetic potential by repressing ATP sensitive potassium directs in pancreatic  $\beta$  cells, bringing about cell layer depolarization and release of insulin. The mix of aloe Vera and antidiabetics has additive effect.

#### **Sesame oil**

The mix bunch showed a more prominent enemy of hyperglycemic impact with a 43% decrease of glycosylated haemoglobin and 36% decrease of blood glucose level when contrasted with those getting sesame oil and glibenclamide monotherapy. Upgrades were additionally seen in enzymatic and non-enzymatic anti-oxidant prevention agent levels in patients treated with sesame oil alone or in mix with glibenclamide, recommending that sesame oil has an added substance/synergistic impact when co-managed with glibenclamide

### **ASTHMA**

Is a circumstance wherein your airways slender and swell and may produce greater mucus. This could make respiration difficult and cause coughing, a whistling sound (wheezing) while you

breathe out and shortness of breath<sup>11</sup>. For some humans, bronchial asthma is a minor nuisance. For others, it can be a major problem that interferes with each day's activities and may cause a lifestyles-threatening allergies attack.

### Pathology

Pathophysiology of asthma consists of

- Bronchoconstriction,
- Airway inflammation,
- Mucoïd impaction.<sup>12</sup>

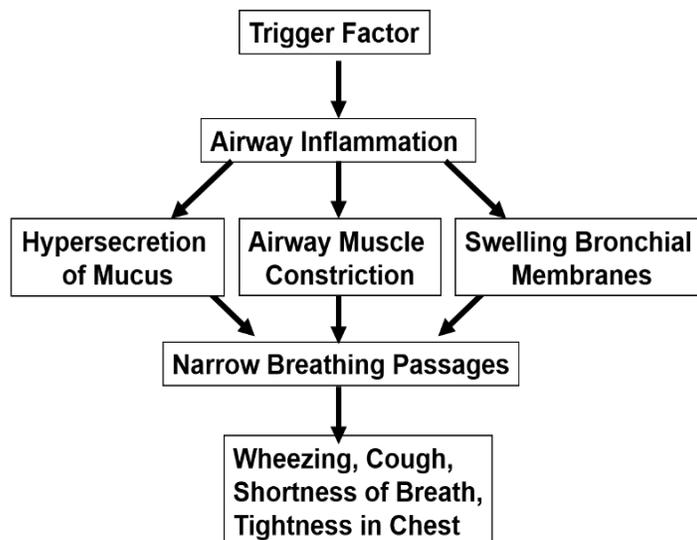


Figure 2: Asthma

### AVOIDABLE FACTORS

#### COUGH SUPPRESSANTS

##### Dextromethorphan

Dextromethorphan is employed to cut back coughs because of colds or influenza (flu). It must no longer be used for continual cough that happens with smoking, asthma, or emphysema or while there's an extraordinarily big amount of mucus or phlegm (flem) with the cough. Since dextromethorphan decreases coughing, it makes it tough to remove the mucus that collects inside the lungs and airways throughout allergies<sup>13</sup>

##### Beta Blockers

Beta blockers are wont to treat hypertension .Precaution should be taken if you have got disease like asthma or COPD. Beta blockers can Increase aviation route reactivity and should obstruct the movement of beta-agonists. In any case, beta blockers are ok to be used in many patients with COPD, however less so in patients with asthma.

Beta blockers are generally utilized within the administration of cardiovascular circumstances and thyrotoxicosis, and to diminish perioperative complications. Asthma and COPD are exemplary contraindications to the Employment of beta blockers on account of their true capacity for causing bronchospasm. Propranolol causes bronchospasm, it sometimes causes narrowing airways which worsen asthma. Using propranolol along with inhalers (albuterol) may reduce benefits of both medication

### Cardio selective Beta 1 Blocker

This kind of medication was explicitly intended to hinder the beta receptors just in heart cells. Hence, they are for the most part viewed as safe for individuals with asthma and other lung conditions

### Head Lice Preparation

Head lice preparation sometimes causes allergic reactions and itching. Ask the doctor before use if you are allergic to ragweed. May cause breathing difficulty or asthmatic episodes<sup>5</sup>.

### OTC NSAIDS

Some people assume these drugs are OTC drugs and safe .but they can also have complications.

- Aspirin (bayer, Bufferin, Excedrin)
- Ibuprofen (Advil, Motrin 1B)
- Naproxen (Aleve)

Aspirin At the point when prescriptions, for example, NSAIDs or aspirin block the COX-1 Enzyme , creation of thromboxane and a few mitigating prostaglandins is diminished, and in patients with aspirin induced asthma , this outcomes in the overproduction of favourable to provocative leukotrienes, which can cause extreme intensifications of asthma<sup>14</sup>.

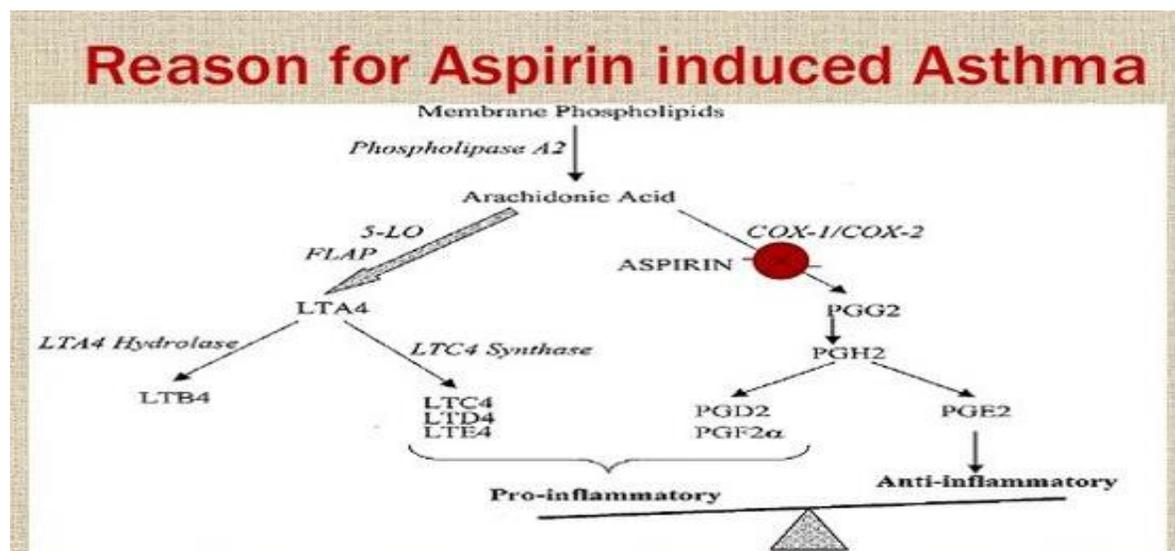


Figure 3: Why is not advisable to administer aspirin to asthma patients

**Ibuprofen**

In people with asthma, if you are not aspirin sensitive you can use ibuprofen. If you have aspirin sensitive, ibuprofen can trigger symptoms of asthma

**Naproxen**

It also triggers asthmatic conditions Keep away from Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) if conceivable. Assuming you have asthma, attempt to avoid NSAIDs - - ibuprofen, naproxen, and ketoprofen, for instance. Regardless of whether you have side effect of them, it is possible to develop one later in life<sup>15</sup>

**Hyperlipidemia**

Hyperlipidaemia is a condition in which blood carry high level of lipids. High level cholesterol cause blockage of blood vessel and lead to stroke and heart diseases<sup>16</sup>

**PATHOPHYSIOLOGY**

Hyperlipidaemia is an ailment described by an expansion in at least one of the plasma lipids, including fatty oils, cholesterol, cholesterol esters, phospholipids as well as plasma lipoproteins including extremely low-density lipoprotein and low-density lipoprotein alongside decreased high-density lipoprotein levels. Result low density lipoprotein unable to remove Cholesterol from the blood effectively. Deposition of plaque on blood vessels leads to stroke and heart diseases<sup>17</sup>.

**AVOIDABLE FACTORS****Multivitamins**

Vitamin B3 OR niacin help to increase level of high density lipoprotein and decrease triglyceride. One 2012 study found that vit D supplements have no cholesterol lowering effect. Which increase L.D.L

**Diuretics**

A diuretic is any substance that produces diuresis, it increases urine production. This incorporates constrained diuresis. A diuretic tablet is at times conversationally called a water tablet. There are a few classes of diuretics. All diuretics increment the discharge of water from the body, through the kidneys. Transient thiazide diuretic treatment can dose dependently serum complete cholesterol levels 50g or all the more unassumingly increment low-thickness lipoprotein cholesterol levels and raise fatty oil levels, while negligibly evolving high-density lipoprotein cholesterol level any drug that contains HCTZ or furosemide might add to elevated cholesterol<sup>18</sup>.

**Anabolic steroid**

Anabolic steroids, additionally referred to additional appropriately as anabolic-androgenic steroids, are steroidal androgens that incorporate normal androgens like testosterone as well as engineered

androgens that are basically related and have comparative effect to testosterone. Many people take steroid to build up body mass which increases cholesterol level. Anabolic steroids stimulate the movement of HTGL, an enzyme for metabolism of HDL<sup>2</sup> and produces huge reductions of HDL-C and Apo-A-I level notwithstanding, the system behind the unfavourable impact of anabolic steroid on expanded LDL-C levels stays to be totally explained<sup>19</sup>.

Beta blockers are any of a class of drugs which prevent the stimulation of the adrenergic receptors responsible for increased cardiac action, used to control heart rhythm, treat angina, and reduce high blood pressure. Many beta blocker have adverse effect on blood lipid which cause decrease in high density lipoprotein and decreases low density lipoprotein

### **Oral contraceptives**

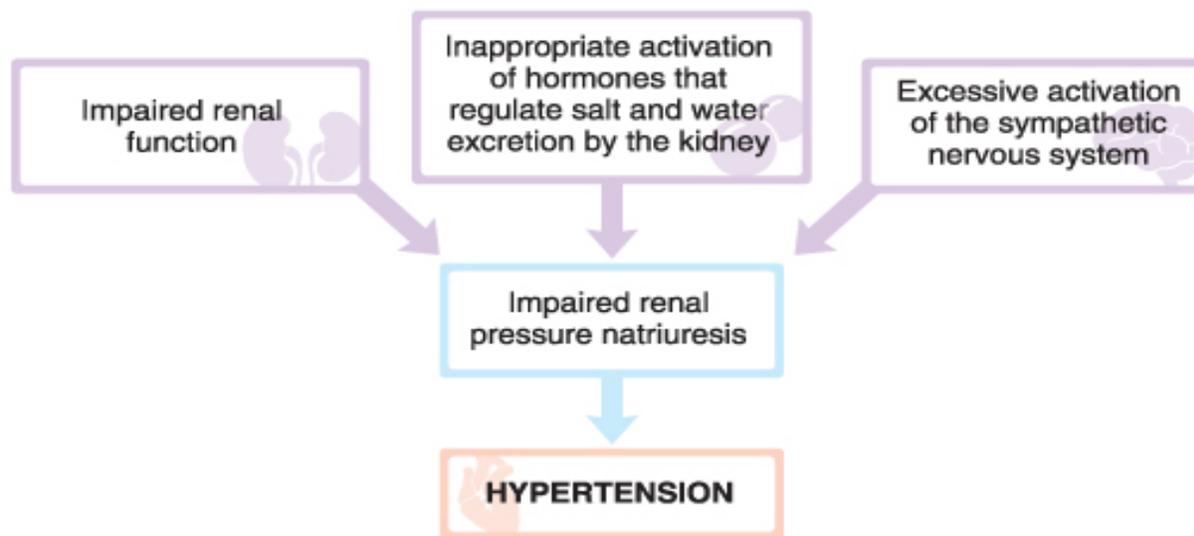
The combined oral contraceptive pill, often referred to as the birth control pill, is a type of birth control that is designed to be taken orally by women. It incorporates a blend of an estrogen and a progestin. Combination of oral contraceptives increases cholesterol level. Person with cholesterol level more than 160 mg /dl should avoid pills. People with high cholesterol should avoid fatty foods, processed food and caffeine products also alter cholesterol level<sup>20</sup>.

### **HYPERTENSION**

A condition where the power of the blood against the supply route walls is too high. Usually hypertension is characterized as a pulse over 140/90, and is viewed as extreme if the pressure is above 180/120. High blood pressure often has no symptoms. After some time, if untreated, it can cause medical issues, for example, coronary illness and stroke. Eating a better eating routine with less salt, practicing consistently and taking drugs can help lower blood .

### **Pathophysiology of Hypertension**

Pathophysiology of hypertension includes the disability of renal strain natriuresis, the criticism framework where hypertension prompts an expansion in sodium and water discharge by the kidney that prompts a decrease of the pulse. Pressure natriuretic can result from impeded renal capability, unseemly actuation of hormones that control salt and water discharge by the kidney (like those in the renin-angiotensin-aldosterone framework), exorbitant enactment of the sympathetic system. Hypertension (hypertension) is an infection of vascular guideline coming about because of breakdown of blood vessel pressure control system. (CNS, renin-angiotensin aldosterone framework, extracellular liquid volume.) We have to control hypertension because it will leads to cardiovascular diseases, stroke, kidney diseases etc. When hypertension occurs heart force to pump blood this will causes thickening of left ventricle that leads to cardiovascular diseases.



**Figure 4: Pathophysiology of hypertension**

## **AVOIDABLE FACTORS**

### **Decongestants**

A decongestant, or nasal decongestant, is a kind of drug that is utilized to ease nasal blockage in the upper respiratory tract. The active ingredient in many decongestants is either pseudoephedrine or phenylephrine.

Decongestants alleviate nasal stodginess by restricting veins and lessening expanding in the nose. This restriction can influence other veins too, which can increase circulatory strain. Pseudoephedrine is related with an increment of under 2 mmHg in systolic pulse systolic blood pressure(SBP) and no impact on diastolic pulse (DBP) in patients with hypertension Phenylephrine is the main other oral nasal decongestant known to be protected and powerful for non-prescription use. It conveys similar alerts as pseudoephedrine. Research on its capacity to raise pulse isn't really that broad on pseudoephedrine, however a few information can be obtained

### **Cold and Influenza Medicines**

Over-the-counter cold remedies aren't off-limits if you have high blood pressure or take medicine for hypertension, however pursuing cautious decisions is significant. Converse with your doctor before to taking any OTC drugs or enhancements

### **NSAIDS**

Non-steroidal mitigating drugs (NSAIDs) are prescriptions that are broadly used to reduce pain, decrease inflammation, and cut down a high temperature. In any case, NSAIDs can cause your body to hold liquid and decrease the capability of your kidneys. This might cause your circulatory strain to ascend significantly higher, putting more prominent weight on your heart and kidneys. NSAIDs can likewise raise your risk for coronary episode or stroke, particularly in higher doses.

Unless your doctor has let you know it's OK. Don't use over-the-counter ibuprofen, naproxen sodium, or ketoprofen for pain relief. All things being equal, utilize a pain reliever less inclined to expand your pulse, similar to ibuprofen or acetaminophen. Use as directed. Naproxen (Naprosyn) doesn't increase the risk of hypertension or stroke. Celecoxib (Celebrex) doesn't increase the risk of hypertension or stroke if you have hypertension, elevated cholesterol, diabetes, your kidneys don't function admirably or you smoke, you ought to check with your medical services proficient that this medication is fitting. Utilize the most minimal portion that works for yourself and stop as soon as you can.

### **Oral Contraceptives**

Oral contraceptives leads to change in level of blood pressure about 5%.it is done by the mechanism that is ,oral contraceptives change renin angiotensin aldosterone system .it increases plasma renin substrate concentration which may be associated with increase in plasma renin activity and aldosterone excretion non hormonal contraception such as condoms, spermicide, diaphragm ,copper do not alter hypertension. progestogen only pill can be used

### **Weight Loss Preparation**

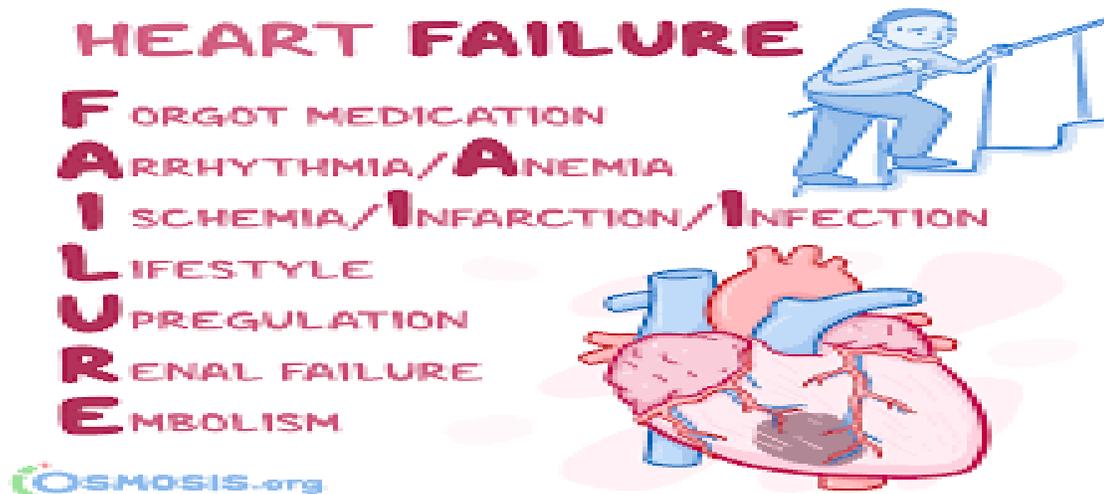
Large numbers of these items contain allergy meds and different substances like caffeine that can increase by Rather than taking pills to get thinner, converse with your medical services proficient about the way of life transforms you can make.

### **Herbal Ingredients**

Remedies that contain ephedra, found in some weight reduction supplements, can be hazardous in those with hypertension. Likewise try not to take ginkgo, a home grown cure at times utilized for memory issues, in the event that you are additionally taking a thiazide diuretic. St. John's Wort can be associated with hypertension prescriptions. Assuming that you have hypertension, talk with your medical care proficient about which OTC meds and natural cures are ok for periodic use. Likewise try perusing the fixing records on OTC cures and the supplements that accompany all items. Caffeine, which can increase bp, is found in a surprising number of OTC cures, including some aspirin formulations

### **HEART FAILURE**

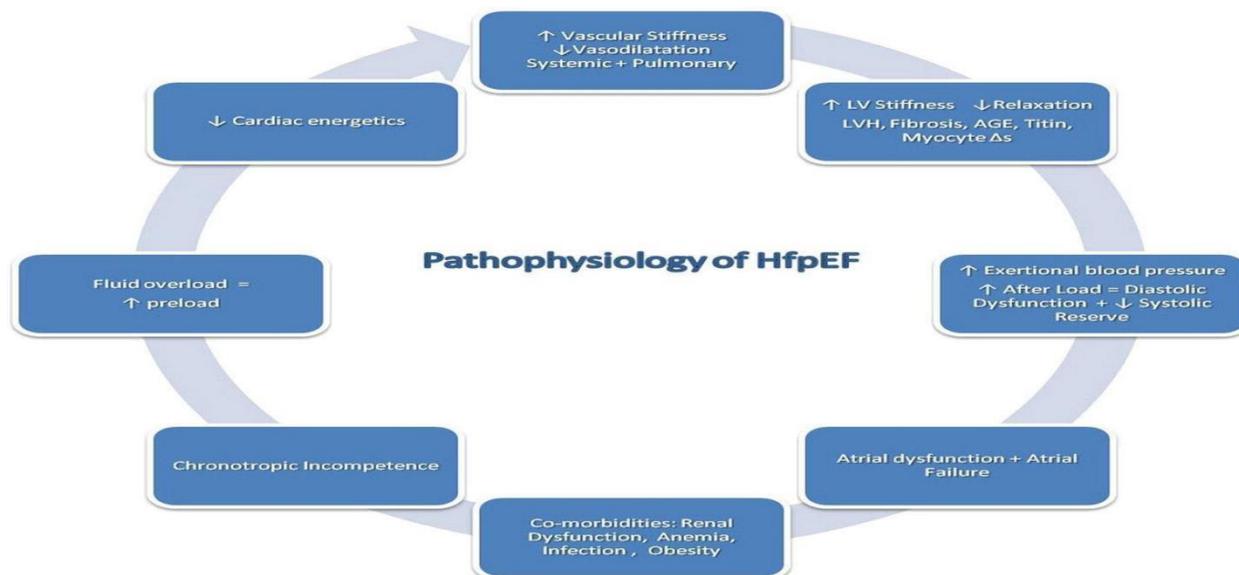
Heart failure is a constant, moderate condition where the heart muscle can't siphon sufficient blood to address the body's issues for blood and oxygen. Fundamentally, the heart can't stay aware of its responsibility<sup>6</sup>.



**Figure 5: Heart failure**

### **PATHOPHYSIOLOGY**

Heart disease is a pandemic sickness which influences around 1% to 2% of the populace around the world. Both, the etiologic and aggregate of cardiovascular breakdown contrast generally. Following a cardiovascular injury (e.g Myocardial localized necrosis, expanded preload or afterload) cell, primary and neurohumoral regulations happen that influence the aggregate being available. These cycles impact the cell capability among intra-as well as intercellular ways of behaving. In result, enactment of the sympatho adrenergic and renin-angiotensin-aldosterone-framework happens prompting versatile systems, which are joined by volume over-burden, tachycardia, dyspnoea and further weakening of the cell capability (endless loop). There exists no cardiovascular breakdown explicit clinical sign; the clinical suggestive shows moderate crumbling intensely or persistently. As a proportion of cell brokenness, the degree of neurohormones (norepinephrine) and natriuretic peptides (e.gNT-master BNP) increase. For the finding of cardiovascular breakdown, harmless (echocardiography, NMR, NT-proBNP) and intrusive (heart catheterization, biopsy) demonstrative techniques are executed. Regulation of the enacted frameworks by  $\beta$ -blocker, ACE-inhibitors and ARNI further develop result and side effects in cardiovascular breakdown patients with left ventricular brokenness. Interventional and careful treatment choices might be proceeding also. The comprehension of the hidden pathophysiology of cardiovascular breakdown is crucial for starting the satisfactory restorative choice separately for every patient. Besides, avoidance of cardiovascular gamble factors is vital for decreasing cardiac failure



**Figure 6: Pathophysiology of Heart failures**

## AVOIDABLE FACTORS

### NSAIDS

Utilization of NSAIDs might diminish the viability of diuretics and prompt congestive cardiovascular breakdown (CHF) in patients treated with diuretics. Ibuprofen, naproxen, and particular COX-2 inhibitors, for example, diclofenac, celecoxib, and meloxicam, ought to be stayed away from in those with cardiovascular disease. Naproxen is by all accounts more secure depending on investigations of a full portion - 500 mg two times every day, Ibuprofen, like Advil, Motrin or Ibuprofen, can cause checked deterioration of existing hypertension (hypertension) or improvement of new hypertension. It can likewise make harm the kidneys (nephrotoxicity), deteriorating of heart failure, and even respiratory failure or stroke. Use of NSAIDS leads to adverse effects such as gastrointestinal bleeding and peptic ulcer. Celebrex might convey a lower hazard of causing serious gastrointestinal secondary effects than naproxen. Be that as it may, the two meds ought to in any case be involved with alertness in those with a background marked by stomach ulcers.

### Cough and Cold Medicines

Decongestants, for example, phenylephrine and pseudoephedrine are one drug of worry for those with coronary illness. They work by tightening veins and making them thinner. While that is useful in clearing nasal clog, it can likewise increase bp, heart rate, and make your heart work harder

### Calcium Channel Blockers

Calcium channel blockers, or calcium antagonists are a gathering of drugs that disturb the development of calcium through calcium channels. Calcium channel blockers are utilized as

antihypertensive medications, i.e., as drugs to diminish pulse in patients with hypertension. Calcium channel blockers might be utilized to treat cardiovascular breakdown made by hypertension when different drugs lower circulatory strain don't work. Calcium channel blockers generally should not be used if you have heart failure due to systolic dysfunction. Among patients with heart failure with reduced ejection fraction, the non-dihydropyridine calcium channel blockers (verapamil and diltiazem) and most dihydropyridine calcium channel blockers (barring amlodipine) are related with no advantage, best case scenario, and expanded mortality even from a pessimistic standpoint. Amlodipine doesn't apply good consequences for the clinical course of patients with cardiovascular breakdown.

### **Proton Pump Inhibitors**

Proton pump inhibitors are class of drug which reduce stomach acid production by inhibiting  $H^+/K^+$  ATPase proton pump. PPI is associated with 20% risk of heart attack. PPIs might influence cardiovascular wellbeing by a few mechanism, which incorporate decrease of nitric oxide bioavailability, electrolyte imbalance and cooperation with some antiplatelet agents. Long term use of PPIs isn't supported by FDA and ought to be kept away from, particularly in patients at high cardiovascular risk.

### **Multivitamins**

Try not to assume control over-the-counter drugs, nutrients, or enhancements except if you check with your doctor first. Your blood thinner may not work right with them. Do not take vitamin K for patient who take blood thinners, blood thinners are prescribed for patients who develop harmful clot. Ask to your doctor before taking vitamins. Zinc, iron, magnesium bind with warfarin there for it should be avoided.

### **Oral Contraceptives**

Women who have cardiovascular sickness or innate coronary illness shouldn't accept anti-conception medication pills without the guidance of their doctor.

### **Herbal Ingredients**

Herbal ingredients also contraindicated in patients with heart failure. There for heart failure patients should avoid these herbal ingredients while taking prescription drugs.

E.g.: Green tea used for mental alertness and weight loss this will decrease effects of warfarin.

Eg: S.T John's wort used for depression it will increase heart rate and blood pressure.

Other herbs interacted with drugs are discussed below.

**Table 1: Use of Herbal Products and Potential Interactions in Patients with Cardiovascular Diseases**

Herb	Purported Use	Cardiac Adverse Effect of Interaction
Alfalfa	Arthritis, asthma, dyspepsia, hyperlipidemia, diabetes	Increases bleeding risk with warfarin
Aloe vera	Wounds (topical), diabetes (oral)	Hypokalemia causing digitalis toxicity and arrhythmia
Angelica (dong quai)	Appetite loss, dyspepsia, infection	Increases bleeding risk with warfarin
Bilberry	Circulatory disorders, local inflammation, skin conditions, diarrhea, arthritis	Increases bleeding risk with warfarin
Butcher's broom	Circulatory disorders, inflammation, leg cramps	Decreases effects of $\alpha$ -blockers
Capsicum	Shingles, trigeminal and diabetic neuralgia	Increases blood pressure (with MAOI)
Fenugreek	High cholesterol	Increases bleeding risk with warfarin; hypoglycemia
Fumitory	Infection, edema, hypertension, constipation	Increases effects of $\beta$ -blockers, calcium channel blockers, cardiac glycosides
Garlic	High cholesterol, hypertension, heart disease	Increases bleeding risk with warfarin
Ginger	High cholesterol, motion sickness, indigestion, antioxidant	Increases bleeding risk with warfarin
Ginkgo	Poor circulation, cognitive disorder	Increases bleeding risk with warfarin, aspirin, or COX-2 inhibitors Potential risk of seizures
Ginseng	Aging, diminished immunity, improves mental and physical capacity and stress tolerance	Increases blood pressure; Decreases effects of warfarin; Hypoglycemia
Gossypol	Male contraceptive	Increases effects of diuretics; Hypokalemia
Grapefruit juice	Weight loss, to promote cardiovascular health	Increases effects of statins, calcium channel blockers, or cyclosporines

**PATIENT COUNSELLING**

The safe and effective use of drugs depends on patients' information about their medication. In India, health care is provided at the primary, secondary and tertiary levels, and at each level, most patients receive medications as part of their treatment. Most prescribers have little time to explain the use of these medicines to their patients. Many patients do not get enough information about their medication including how and when to take it, time duration, what to do if side effects occur or if a dose is missed. Lack of information may result patient not taking the medication the way it intended to be used. Which leads to therapeutic failure and side effects.

Patient counselling is the process of providing information, advice and assistance to help patients use their medications properly. The information and advice is given by the pharmacist directly to the patients or to the patient's representative and may also include information about the patient's illness or recommended lifestyle changes.

During counselling the pharmacist should assess the patient's understanding about their illness and treatment and supply individualized advice and data which can assist the patients to require their medication.

Effective patient counselling aims to provide subsequent results

- Better patient understanding about their disease and drugs
- Increase medication adherence
- More effective treatment
- Minimize error, adverse effects. And unnecessary healthcare costs
- Improved quality of life time of the patients
- Better coping strategies for medication related adverse effects
- Improved professional rapport between the patient and pharmacist

Patient counselling is an essential component of clinical pharmacy practice in hospital and in community pharmacy settings. Counselling enhances the patients understanding of their illness and its treatment and may improve adherence and therapeutic out come.it allows pharmacists to gain first-hand knowledge of medication use from the patient's perspectives.

### **COMMUNICATION SKILL FOR EFFECTIVE COUNSELING**

The counselling process uses verbal and nonverbal communication skills. Verbal communication skill includes language and paralinguistic features such as tone volume, pitch and rate of speech.

#### **Language**

When speaking to patients use simple language and avoid unnecessary medical terminology if possible speak the patients on language

#### **Tone**

During counselling the tone of our voice has a great impact on patient understanding. Changes in the level and range of pitch provide data about the feelings and attitudes of the person speaking .When counselling, the tone of the voice should be caring and reassuring.

#### **Volume**

Many people speak with a wide change in volume, depending on the condition and where and to whom they are speaking. Ideally counselling should be conducted in a quiet, private setting where it is unnecessary to speak more loudly to patients with a hearing problem, most deaf patient's gain

more benefit .Assuming the speaker draws nearer and coordinates their voice towards the patient's ear.

### **Speed**

The lucidity of our correspondence relies upon our pace of discourse .Patients might be hesitant to interface with a drug specialist who talks rapidly in light of the fact that they might feel the drug specialist is too busy. This might occur on the off chance that the drug specialist is anxious or is questionable about the data being given. In contrast an individual who talks also leisurely may lose the interest of the listener. For good communication the pharmacist should present clear relevant messages in a logical sequence, and at a speed which gives the patient time to think about what is being said. This will help patient understand and remember the concept more easily.

### **Non Verbal Communication**

This includes body language such as the movement and position of the head, limb and body and other aspects such as whether the pharmacist is dressed in a professional manner. During Approximately 50% of the way a message is conveyed comes from body language .Aspects of nonverbal communication include proximity, touch eye contact, facial expression, head movement, gestures with hands and body postures.

Proximity: This refers to the distance that people maintain between themselves during the counselling process. This space has been classified into four zones: intimate (45 cm or less), personal (45cm to 1.2 m) social (1.2 to 3.6) and public (>3.6) generally councillors and healthcare professionals use intimate or personnel proximities.

Eye contact: Individuals take a gander at each other during discussion differs depending upon whether they are talking or tuning in. audience members take a gander at the speaker's more social or individual explanations like bashfulness ,trouble or depression, some individuals might try not to thoroughly search in to guide their eyes.

Facial expression; these can be used during counselling to demonstrate empathy towards the patients. Head movements such as nodding, hand gestures, and body postures also can be used to advantage<sup>27</sup>.

### **GENERAL ADVICE FOR USING OTC DRUG**

Patients should be aware about medication they taken. For effective treatment patient knowledge about medication is essential .Therefore patient counselling plays a role in patient health. Always tell your pharmacist what medicines you take. This contains prescription and OTC drugs as well as herbals, and other supplements. Some prescription medicines will interact with OTC medicines.

And some contain the same ingredients as OTC medicines, which means you could end up taking more than you should. General advice for using OTC drugs are discussed below

- Consult with a medical practitioner before purchasing an OTC product.
- Read the label carefully.
- Don't take drugs with the same active ingredients.
- Only treat the symptoms you have.
- Keep a current list of medicines you take
- Always know what you are taking
- know the effect
- Read the warning and precaution
- Don't use anything more than 1-2 weeks
- Be particularly cautious if also taking prescription drugs
- If you have questions ask pharmacist
- If you don't need it don't use it
- If any side effects occurs discard the product
- If you are in another diseased condition such as hypertension, diabetes, high cholesterol. Etc. you should inform the pharmacist
- If you have an allergy to any medicines that should be informed.

### **Role of Pharmacist in Dispensing OTC Medicines For Selected Diseases**

The pharmacist assumes a fundamental part in controlling the quantity of meds being administered as OTC medications. They can likewise direct and prompt the customers in regards to OTC meds. They can also council and advice patients regarding OTC medication. Pharmacist should collect information about patients such as diseased condition of patients, if he/she have another diseases, if he take another prescribed drugs, if he have any allergic reaction to medicines. Pharmacist should counsel and advise the patients before dispensing of drugs. And should suggest consultation of doctor. IF patient are in diabetes you should advise about avoidable factors .and should ask about any prescription drugs who taken while delivering skin care products it should be suitable to diabetic skin. And advise them to protect skin. If you are dispensing oral hygiene products.it should be sugar free and advise them to avoid daily use of mouth wash. Decongestants should be free of phenylephrine and pseudoephedrine. And also pharmacist can council about diet and exercise and other natural methods to control diabetes If the patient are in hypertension care should be taken while delivering OTC medicine and should ensure the dispensing medicine is not increase or decrease blood pressure .and advise them about avoidable factors and council about diet

management and exercise and other natural method to control blood pressure. If the patient with asthma. Should inform to the pharmacist about patient condition care should be taken while dispensing and should suggest consultation of doctor. If the patient are in hyperlipidemia, care should be taken while delivering steroids. And should inform about avoidable factors if the patient with heart failure care should be taken while delivering OTC medicine. There for consultation of doctor is safe to administer drug, any adverse reaction may worsen the patient condition. Every pharmacist should be take care about OTC Medicines. And patient counselling about OTC medicines is essential to minimize adverse effects pharmacist can control number of medication being dispensed as OTC drugs. Some prescription drugs also were delivered as OTC medicines, even antibiotics, NSAIDS.. etc. That will leads to side effects. There for pharmacist is responsible to control medicines being administered as OTC medicines. Pharmacist should ask about patient conditions when they ask medicines as OTC and pharmacist should understand about patient conditions if it available as OTC medicines then can dispense when it is safer to administer.it should be ensure. and pharmacist should counsel the patient about the medicines such as category, time of administration ,how it is taken, use, interaction, side effects may happen. If the condition is mild pharmacist should tell if the symptom continue you should consult doctor. Pharmacist should inform to every patents it is safer to administer after consultation of doctor<sup>29</sup>.

### **Role of Pharmacist in Hypertensive Care**

Hypertension (HTN) is a main source of death and incapacity all through the world. However, regardless of generally accessible treatment choices, pulse (BP) control rates have remained moderately stale. One way to address this issue is through cooperative consideration models, especially those utilizing drug specialists<sup>28</sup>. Various randomized controlled preliminaries (RCT) have shown the adequacy of drug specialist intercessions to further develop BP control across essential consideration, local area based, and telemedicine models. A meta-examination of 39 RCTs has shown that drug specialist mediations essentially decrease both systolic and diastolic BP contrasts and controls across different patient populations. Drug specialists can add to HTN the executives in different ways, incorporating helping with out-of-office observing, giving training, recognizing and settling nonadherence, and titrating antihypertensive treatment to accomplish BP control<sup>23</sup>

### **Role of Pharmacist In Diabetic Care**

The job of pharmacist in diabetes the executives, include patient distinguishing proof, appraisal, training, reference, and checking. Drug specialists can assist with distinguishing patients with diabetes through screening and ought to target patients at high risk, individuals with a family

background of the illness, and ladies with a background marked by gestational diabetes or who conveyed a child weighing in excess of nine pounds. Patient training ought to be given following findings, at a second stage when a patient evaluation can be performed, and at a third stage during which patients can proceed with instruction to support ideas and an inspirational lift. One of the drug specialist's most significant jobs is the reference of patients to different individuals from the diabetes care group. Albeit the job of the drug specialist in observing diabetes isn't distinct, it could incorporate such things as determining whether doctor visits and testing to survey long haul glycaemic control. Getting confirmation as a diabetes instructor is suggested. This cycle expects no less than 1000 hours of involvement with giving illness state the board to patients with diabetes and fruitful consummation of an assessment. Carrying out diabetes the board administrations requires a responsibility of time, exertion, and assets and may require preparing of staff and changes in work designs. The drug specialist can assume a significant part in diabetes care by evaluating patients at high gamble for diabetes, surveying patient wellbeing status and adherence to principles of care, teaching patients to enable them to really focus on themselves, alluding patients to other medical services experts as suitable, and observing results<sup>24</sup>.

### **Role of Pharmacist In Hyperlipidemia Care**

Cholesterol management is essentially to prevent cardiovascular diseases .The drug specialist should teach about patient's high cholesterol, the effect of diet and way of life, and the system of activity, organization, and antagonistic impacts of the antilipemics recommended. The drug specialist should likewise screen for consistency, lab test values, and the reaction to treatment<sup>21</sup>.

There is guidelines for cholesterol management. Pharmacist should be monitored the level

- Total cholesterol levels ought to be under 200 mg/dL.
- Low density lipoprotein levels ought to be under 100 mg/dL.
- HDL cholesterol levels ought to be over 40 mg/dL for men and 50 mg/dL for ladies.
- Fatty substance levels ought to be under 150 mg/dL.
- Kids matured 2 to 19 years ought to have absolute cholesterol levels under 170 mg/dL and LDL cholesterol levels under 110 mg/dL.
- Preventive methods should be explained by pharmacists to control cholesterol level.
- To diminish the dangers of atherosclerosis, coronary illness, and stroke, people can:
- Abstain from smoking and liquor
- Get ordinary vigorous activity
- Stay away from or lessen weight

- Eat a heart-solid eating regimen wealthy in fibre, foods grown from the ground, and lean proteins
- Distinguish and treat diabetes
- Distinguish and treat heartens<sup>22</sup>

### **Role of Pharmacist in Asthma Care**

Pharmacists are particularly situated to further develop results in asthma patients given their clinical skill in persistent administration and their capacity teach patients on asthma meds, give preparing on inward breath strategy, address patients' interests around the expected symptoms of meds, and further develop adherence to treatment<sup>30</sup>. Indeed, the National Governors Association features the significance of drug specialists in giving direct medical care to patients in a coordinated medical care system. Furthermore, drug specialists are more effectively available than HCPs and are much of the time the primary resource in local area settings. As such, drug specialists have the chance to give guidance on preventive consideration to constant sicknesses (e.g., lead screenings, instruct patients, make references to HCPs for follow-up care). As drug specialists co-operate with patients on a continuous premise during medicine tops off, they can assume a functioning part in asthma the board given their insight and aptitude on meds<sup>25</sup>

### **Role of Pharmacist In Care Of Patients with Heart Failure**

Heart failure has become one of the significant reasons for hospitalization around the world. Hypertension, diabetes mellitus and hyperlipidaemia are the significant reasons for cardiovascular breakdown. To really forestall cardiovascular breakdown, pulse, blood glucose and cholesterol levels will be firmly checked The pharmacist t's job being taken care of by patients with HF incorporates medicine compromise and training; prescription inception; measurements titration, change, and checking; creating disease management<sup>26</sup>

### **Responsibilities of Pharmacist**

A pharmacist is an individual who is engaged with planning, making or assembling of a medicines, administering of a medication, management and arranging of a drug care plan. They are specialists on the activity and utilization of medications, including their science, pharmacology, the formulation of drugs .The most important role of pharmacist is inspecting and executing doctor's medicines actually taking a look at their suitability and legitimacy. Coordinating the drug store in a proficient way to make the ID of items simpler and quicker. Staying aware of full order surpassing assumptions, stacking and naming medicine and various things. Responsibility of pharmacists should obey for public health. Pharmacist play an important role in disease management in society.

There for every pharmacist should ensure the dispensed medicines are right and effective, and there are no harmful effects to patients.

The important responsibility of pharmacist is discussed below

- The nature of medications provided to patients
- Guaranteeing that the stock of prescriptions is inside the law
- Guaranteeing that the prescriptions endorsed to patients are reasonable
- Prompting patients about prescriptions, including how to take them, what responses might happen and addressing patients' enquiries.
- Direct the medications store network and guarantee drug store premises and frameworks are good for reason
- Prompt other medical care experts about protected and compelling medications use, and no problem at all stockpile of drugs
- Answer patients' side effects and prompt on medications available to be purchased in drug stores
- Offer types of assistance to patients, for example, smoking end, circulatory strain estimation and cholesterol the executives
- Regulate the creation and planning of meds and evaluations of the nature of meds before they are provided to patients from drug makers.

## CONCLUSION

O.T.C medicines are medicines sold directly to a consumer without a prescription from a healthcare professional. Which are legally allowed to be sold by pharmacists which is also known as non-prescription medicine. OTC products can be helpful in treating symptoms of certain conditions. If your symptoms continue, see your healthcare provider. OTC medicines have Advantages and disadvantages. Most advantages are cheap, self-management and less side effects compared to prescription drugs. Overdose or misdiagnosis leads to serious side effects. There for precaution must taken before taking OTC medicines .Patient should be aware about what medication who take.Their are prescription and non-prescription drugs separately, but sometimes prescription drugs also available as OTC drugs such as antibiotics, NSAIDS.. etc. This will leads to harmful effects. Use of antibiotics without prescription should not be allowed. Pharmacist should take care about the use of prescription drugs as OTC medicines. OTC medicine should bear label such as active ingredients, use, precaution, dose, how to take, how many times, side effects and storage conditions. Pharmacist play important role in control of drug abuse. Pharmacist should collect all information about patients diseased condition, And should dispense right medicine in

right dose. And should counsel the patient about medication. Effective counselling help to improve patient knowledge about medication and it improves treatment. And always prefer doctor consultation. Healthy adults who utilize OTC prescriptions periodically and appropriately have an okay of unfavourable effects. However, certain individuals are at more serious risk, utilization of OTC drug might cause unsafe effects. In this condition we should know about OTC medication. Here we discussed about OTC medicines in different diseased conditions and their perspectives. Such as asthma, diabetes, hypertension, Hyperlipidemia and heart failure. Diabetes occurs when the body can't take up sugar (glucose) into its cells and use it for energy. This results in a development of additional sugar in your circulatory system. Diabetic patient should take precautions before Taking OTC medicine. You should inform your pharmacist if you are diabetic. Factors that avoided by diabetic patients are discussed that should be followed. Always select suitable products. Diabetic patient should take aware when use of cough and preparation, multivitamin, oral hygiene products, skin care products. Next we discussed about asthma, asthma lead to respiratory problems. Asthmatic patient also aware about OTC medication. You should inform to pharmacist if you are asthmatic and tell them about medicine you take, and must retry avoidable factors. Asthmatic patient should keep attention before taking OTC medicines, especially NSAIDS as OTC Eg: Aspirin may induce asthma. Next we discussed about Hyperlipidemia it is a condition in which bad cholesterol level in body will be high, Hyperlipidemia is serious condition which leads to cardiovascular diseases there for this type of patients must control their cholesterol level through treatment, diet and exercise. Hyperlipidemia patients also take attention when purchasing OTC medicines. Factors that is avoided is discussed which should be avoid to control Hyperlipidemia. Next discussed about hypertension A condition where the power of the blood against the supply route walls is too high. Usually hypertension is characterized as a pulse over 140/90, and is viewed as extreme if the pressure is above 180/120. Agents which increases blood pressure should be avoid. Diet control and weight management is essential. Should not use weight loss preparation, Large numbers of these items contain allergy meds and different substances like caffeine that can increase BP Rather than taking pills to get thinner, converse with your medical services proficient about the way of life transforms you can make. You should reduce sodium intakes. Diet management is also help to control BP. Next discussed about heart failure, it is a condition in which inability of heart to pump blood sufficiently. It is a serious condition there for patient with heart failure should not use OTC medicines always prefer consultation of doctor and take right medicine that are safer to patient. For effective treatment patient counselling plays important role. The safe and effective use of drugs

depends on patients' information about their medication . In India ,health care is provided at the primary, secondary and tertiary levels, and at each level , most patients receive medications as part of their treatment. Most prescribes have little time to explain the use of these medicines to their patients .Many patients do not get enough information about their medication including how and when to take it, time duration, what to do if side effects occur or if a dose is missed .Lack of information may result patient not taking the medication. Patient counselling results better treatment and understanding about disease and drugs communication skill ll of pharmacist plays important role in understanding about medicine and treatment. Responsibilities of pharmacist should be follow for safer drug administration.

Every patient should be aware before purchasing OTC medicines first you should consult with your doctor and ensure medicine that is safer for you. Patient must read the label of OTC medicines and check active ingredients. Ask to pharmacist about the medication if you have any allergy to any medicines you should inform to pharmacist if you have any side effects after the use of medicine you should discard the use .Don't use OTC medicines more than 1/2weeks.consult with doctor if the symptoms continue. Medication sometimes leads to misdiagnosis it will harm to your medication therefore it is safer to administer every drug after consultation with doctor.

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