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Hazards of OTC medication - a community pharmacy practice

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ABSTRACT

Over the counter (OTC) medication most common practice in India and concurrently patient complaint due to OTC encounter by healthcare practitioner also uncountable. In OTC practice one can buy medicines without prescriptions of register medical practitioner (RMP). In India, peoples are always practice OTC to relieve pain and treat symptoms of the common cold, flu, and allergies. In present study, a survey was conducted in different places of central India and collected data especially from Ratlam and Mandsaur District of Madhya Pradesh state, India. During the survey, information was obtained from the individuals used OTC medication as per pre-designed questioners. Subsequently, documented information was evaluated to find out risk of OTC medication, if any. In evaluation, it was found that about 21% OTC drug may cause moderate to severe hazardous effect to the patients used OTC medication. Patients with complaints of fever; body ache etc. used only NSAIDs from OTC and later diagnosed as chikungunya, when complaints persisted and visit doctors' clinic. OTC medication has tremendous risk which may fatal for patients and chances of produce new complications due to misuse of drugs. So, medication should be taken after diagnosis by register medical practitioner that will make a healthy society.

INTRODUCTION

Over the counter (OTC) medications are most common practice in India and concurrently patient complaint due to OTC encounter by healthcare practitioner also uncountable. Here Community pharmacists are entertaining for OTC medications

to patients, where treatment is on the basis of feeling of the patient and assumption of pharmacist regarding disorder (s) that could be causes life threatening complications to patient. [1]. In OTC practice one can buy medicines without prescriptions of register medical practitioner (RMP). In India peoples are always practice OTC to relieve pain and

treat symptoms of the common cold, the flu, and allergies. Different categories of drugs commonly taking from OTC by the patient were explained here.

Antihistamines

Antihistamines work by blocking the receptor (H₁) that triggers itching, nasal irritation, sneezing, and mucus production the three types of Antihistamines are: -

- Diphenhydramine, the medicine in products such as banophen, benadryl allergy and diphenhist
- Brompheniramine, the medicine in products such as Dimetapp allergy
- Chlorpheniramine, the medicine in products such as allerchlor, chloamine and chlortrimeton allergy. [2, 3]

Decongestants

Decongestants work by narrowing blood vessels in the lining of the nose. As a result, less blood is able to flow through the nasal area and swollen tissue inside the nose shrinks. Pseudo ephedrine is the only decongestant used in OTC products.

Cough Medicines

Cough medicines are grouped into two types: anti-tussives and expectorants. Anti-tussives or cough suppressants block the cough reflex. Know what to avoid while taking the medicines some food can cause side effects, such as stomach upset, if you are taking medicines. Drinking alcohol is generally not a good idea while you are taking medicines. Some medicines cause reaction such as sun sensitivity (getting a sun burn or Sun rash) so you may have to limit your outdoor activities or protect your skin from the sun. Read the label to see what to avoid while you are taking an over the counter Medicine.

Potential Side Effects of OTC Medicines in Adults

While OTC medicines have a low risk of side effects when used occasionally by healthy adults, they can pose risks for very young children than elderly. [2, 3]

Aspirin and Non-steroidal Anti-inflammatory drugs

The main side effects associated with Aspirin and other NSAIDs is gastrointestinal (GI)

problems. These problems can range from upset stomach to GI bleeding, a serious event that is more likely to occur in older people. The chances of experiencing GI problems from NSAIDs or aspirin increase the larger the dose you take and the longer you take them.

NSAIDs can cause a variety of side effects related to kidney function. These side effects range from reversible inflammation to permanent kidney damage.

Aspirin and NSAID cause high blood pressure worse or interfere with blood pressure medicines. High doses of aspirin pose a risk of liver damage for people who have liver disease, juvenile or rheumatic fever. [4]

Acetaminophen

Although safe in majority of users, long term uses of high doses of acetaminophen, especially in products that also contain caffeine (such as Excedrin) or codeine (such as Tylenol with codeine), has been shown to cause a form of kidney disease called analgesics nephropathy. This serious condition may develop after years or decades of daily use.

Antihistamines

Antihistamines can causes sedation or drowsiness and therefore, can significantly impair a person's ability to drive or operate machinery the sedative effects of antihistamines may increase the risk of falling. Anti-histamines can also cause temporary dry mouth or eyes.

Decongestants

Pseudo ephedrine can temporarily cause nervousness, dizziness, and sleeplessness it can make you lose your appetite or retain urine. It can also cause heart palpitations, high blood pressure, or high blood sugar levels.

Cough medicines

Codeine, when used as a Cough suppressant, can temporarily cause nausea, Sedation and constipation. Dextromethorphan, the Medicine in Drixoral Pertussin CS and robitussin, has a lower risk of sedation & GI side effects. However it may cause feelings of confusions, agitation, nervousness or irritability. [5]

Drug –Drug interaction

The body processes- or metabolizes-every drug differently. If drug are used together, their metabolism and effect on the body can change when this happens, the chance that you will have side effects for each drug may become greater. [3]

ALCOHOL AND OTC MEDICINES

Pain relievers

If you drink more than one alcoholic beverage per week and use NSAID, Including aspirin, you may be at increased risk of GI bleeding. A person who consumes three or more alcoholic beverages each day should consult their physician before using any pain reliever.

Acetaminophen is much less likely than NSAIDs to be associated with GI problems including bleeding. But to minimize risk of serious liver injury, you should never take more than the recommended daily dose (4 gm per day).

Antihistamines Decongestants and Cough medicines

The combination of OTC antihistamines and alcohol can increase drowsiness, especially in elderly people. In addition, alcohol makes the drowsiness sedation and impaired motor skills associated with the cough suppressant, Dextromethorphan (in products such as drixoral, robitussin) and codiene worse.

Special groups

Some groups of people may be particularly liable to side effects associated with OTC products. The sections below include tips for using OTC medicines in the following special populations. [6]

Children

It can be helpful for parents and other caregivers to keep track of the medicine a child is taking. One way to do that is with a medication log. Using a log can help avoid “double dosing” giving too much medicines or giving it too often. It can also provide important information to your doctor if there is a problem.

The elderly uses a number of medications at the same time and therefore need to pay careful attention to drug-drug interactions between OTC

medications and medications they take and potential interactions with OTC medicines.

There is a relatively high risk of kidney disease and GI bleeding in elderly patients who use NSAIDs discusses this risk with family doctor.

Pseudo ephedrine can increase blood pressure and pressure in your eye that can lead to glaucoma. It can also make existing blockages in the urinary tract worse.

If anyone use monoamine oxidase inhibitors (MAOI), a type of anti-depressant or take any medication for a seizure disorder, should avoid using Pseudo ephedrine. Pseudo ephedrine interfere with mechanism of action of this drug. Some common MAOI's include marplan (generic: isocarboxazid), nardil (generic: phenelzine sulphate) and parnate (generic:tranylcypamine sulphate). If one use a MAOI, should not use Dextromethorphan. As it interferer's with the mechanism of action of MAOIs. [7]

Pregnant or breastfeeding women

Pregnant or breastfeeding women should talk with their doctor before using any medicines. OTC may produce fatal effect on baby.

Pregnancy

- Acetaminophen is generally considered safe for short term pain relief during Pregnancy.
- Avoid using aspirin during Pregnancy. It can cause abnormalities in the baby or problems during delivery.
- Avoid using NSAIDs such as ibuprofen especially during the third trimester of Pregnancy. They can cause heart abnormalities in the baby.

Breastfeeding

Acetaminophen and NSAIDs such as ibuprofen provide safe pain relief for women who are breastfeeding. Avoid using aspirin because is excreted in breast milk and cause rashes and bleeding problems in nursing infants. Limit long term use of antihistamines. Antihistamines are excreted in breast milk and may cause side effects such as sedation, irritability, crying and sleep disturbances in nursing infants. Antihistamines may also interfere with the production of milk. [7]

General tips

People with health problems such as kidney disease, heart disease, diabetes asthma, blood clotting disorder may be at increased risk of side effect associated with OTC medicines. [7]

How to read an OTC drug label

One can purchase medicine from OTC without prescription of RMP in unavoidable circumstances, although those medicines may produce major side effects. In such case need to maintain a record regarding this particular OTC medication by asking following question to Pharmacist. Such records serve as medication history in further treatment by RMP.

1. **Name** (generic and brand) of medicines
2. **Active ingredient**-the active ingredient is the chemical compounding the medicine that works to relieve your symptoms. It is always the first item on the label.
3. **Uses** - this section lists the symptom the medicine is meant to treat. The US FDA must approve these uses.
4. **Warnings** - this safety information will tell one what other medicine, foods to avoid while taking medicines.

5. **Directions** - information about how much medicine one should take it will be enlisted here.
6. **Other Information's** - any other important information's, such as how to store the product will be enlisted here.
7. **Inactive ingredient**- an inactive ingredient is the chemical compounding the medicine that is not meant to treat a symptom. Inactive ingredient can include preservatives, binding agent, and food colouring.
8. **Comments** - a toll free number is provided to address any comment you may have about the medicine. [7, 8, 9]

Some common drugs those patients are usually taking from over the counter (OTC) have increase chances of interaction with some drugs prescribing to specific chronic diseased patients enlist in Table - 1. [3, 7, 8, 9, 10]

MATERIALS AND METHODS

Designing of survey form

To conduct intensive field survey a guideline was designed. This guideline was compiled questioners as follows.

SURVEY REPORT/ QUESTIONERS

Risk of OTC Medication - a community pharmacy practice BRNSS-Contract Research Centre, Mandsaur

1. Name of patient
2. Age
3. Sex
4. Bodyweight
5. OTC Medication information

Name of drug	Dose	Duration of treatment	Complication
6. Disease history			
7. Present disease status			
8. Findings of survey			
9. Conclusion			

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Collection of data

During survey data were collected in the designed questioners. Survey was conducted in different places of central India and collected data especially from Ratlam and Mandsaur District of Madhya Pradesh state, India. During that survey, information was collected from the individuals and noted the same against questioners.

Evaluation of survey reports

Questioner were evaluated on the basis of information given in different literatures (references), regarding adverse effect of drugs, severe fatal toxic effect, irrelevant or misuse of drugs etc. The survey reports identified with risk of medication were enlisted in table -2.

Table 1: Some common drugs those patients are usually taking from over the counter (OTC) have increase chances of interaction with some drugs prescribing to specific patients having chronic disease.

OTC medicaments	Major interactants
Analgesics	
Paracetamol	Increased hepatotoxicity of other drugs that also Damage the liver.
Salicylates(aspirin)	Increased bleeding with anticoagulants and other Platelet inhibitors: Increased GI ulceration with Corticosteroid, anti-inflammatory agent potentiation of oral antidiabetics, barbiturates, phenytoin, by displacing them from protein binding; decreased effectiveness of vitamin c by increasing its excretion. Impaired absorption of many drugs like tetracyclines.
Antacids	Decreased absorption of many drugs by slowing GI motility.
Anti-diarrhoeals	Increased sedatives effects of CNS depressants; Increased anticholinergic effect of other anticholinergics.
Antihistamines	Increased hypertensive effects of pressor agents decreased effect of oral antidiabetics; increased toxicity of digitalis.
Bronchodilators (adrenaline , pseudoephedrine)	Decreased effectiveness of antihypertensive;
Decongestant (phenylephrine, pseudoephedrine)	Increased danger of hypertensive with MAOIs.
Expectorants (guaifensin)	Increased risk of haemorrhage with heparin Decreased effectiveness of Levodopa.
vitamin B-6 (pyridoxine)	Increased risk of bleeding by increasing prothrombin time.
vitamin B-6 complex	Decreased excretion of weak acids (barbiturates, prothrombin time)
vitamin c	Decreased excretion of weak acids (barbiturates) increased excretion of weak bases (amphetamine, atropine)

Table – 2: The survey reports identified with risk of OTC medication

SL NO	Drug used from OTC	Disease History	Present complaints	Risk of Medication	Mechanism of Toxicity
1	Dispirine	Acidity	Headache	Vomiting / acidity, Gastric ulcer	Dispirine in contain aspirine that are ↑ acidity level and cause gastric ulcer
2	Dispirine	Chicken-gunia	Headache	Epigastic & Seveuity of α- virus infection in chickengunia may ↑ clotting time	Asprin ↑ acid secretion that causes epigastic disturbances and aspiuin ↓ platelet count which condition in chickengunia
3	flexon	ulcer	fever	Heart burning due to enhancement in ulcer	Ulcer due to excessive acid secretion and OTC medication also cause ↑ in acid secretion
4	Flexon	Acidity	Bodyache fever	Sedation also flexon cause ulcer or heptotoxicity	Acidity due to excessive acid secretion and OTC medication also cause ↑ in acid secretion
5	Combiflame	High B.P.	Chickengunia	Vertigo	Paractamol & Ibuprofen used relief for pain and fever but that are not main drug of chickengunia.
6	Coreflame	Migraine	Chickengunia	Vomiting/Sadation	Coreflame are ineffective an miguaine but that are used in treatment of Chickengunia that are wrong medication
7	Lorigo	Headache	Fever aspect malaria	Drownsiners seviour hepetotoxicity nephrotoxicity hematotoxicity due to anemia	wrong medication
8	Dispirine	Migraine	Headache	Nousea migraine may become severe	Aspirin may reduce headache for some time but migraine due to vasocanstriction in brain so Ergotamatin was right drug to treat this disorder
9	Dispirine	Asthma	Headache	Allergy	Aspirin may reduce headache for some time but migraine due to vasocanstriction in brain so Ergotamatin was right drug to treat this disorder
10	Crocicn	Sugar	Fever	Gastiric irrdatation	↑ Hepatotoxicity & nephotoxicity
11	Flexon	Ulcer	Bodyache	Sadation	Ulcer due to excessive acid secretion and OTC medication also cause ↑ in acid secretion
12	Flexon	Acidity	Body Pain	Vomiting	Acidity due to excessive acid secretion and OTC medication also cause ↑ in acid secretion

SL NO	Drug used from OTC	Disease History	Present complaints	Risk of Medication	Mechanism of Toxicity
13	Cyclopam	Asthmas	Stomach pain	Asthmatic attack trachyeardia urinary retension excitement hallueiuation delirium	Anti-muscarinic drugs cyclopam causes brochocostriction that may causes asthmatic attack
14	Brofen	Hyper acidity high B.P.	Bodyache	Vomiting ulcer	Brofen increases acid secretion, that may increase stomach pain
15	Brofen	Acidity	Stomach pain	Acidity & induced ulcer	Brofen increases acid secretion, that may increase stomach pain
16	Coreflame	Heart patient	Fever	Heart burning	Paracetamol as produced acid secretion in body that are main reason for heart burning
18	Combiflame	Migraine	Fever	Vertigo	Paracetamol as produced acid secretion in body
19	Brofen	Acidity	Stomach Pain	Acidity/ Induced ulcer	Missuse of Drug
20	Asprine	Headache	Chickengunia	Serverity of α - virus infection in chikengunia may \uparrow cloting time	Asprine are not safe for chickenguniya that are \downarrow platelet count so that are anemia.
21	Combiflame	Acidity	Chickengunia	that	Combiflame are wrong medication for chickengunia that are only reduce sing and symptoms of chickengunia but infection till untreated

RESULT

During our survey it was found that about 21% OTC drug may cause moderate to severe hazardous effect to the patient used OTC medication those are enlist in **Table - 2**. [11, 12]

DISCUSSION

Over the Counter (OTC) medication, a common practice in India, where patients are taking medicine directly from drug store without prescription of Register Medical Practitioner (RMP) on the basis of idea of patient and pharmacist regarding ailments.

In our present survey, we found that people were taken wrong medication from over the counter (OTC) respect to their ailments.

Moreover, OTC medication without diagnosis by RMP I very much dangerous because, our study

also finds out, Patients with complaints of fever; body ache etc. used only NSAIDs from OTC and later diagnosed as chickengunia, when complaints persisted and visit doctors' clinic. In such case OTC medication may fatal to the patient. Further, some patients with gastric disorder were taken NSAIDS (aspirin) for fever and headache that may enhance their gastric disorder again.

CONCLUSION

According to our present survey we can partially conclude that OTC medication has tremendous risk which may fatal for patients and chances of produce new complication due to misuse of drugs. So medication should be taken after diagnosis by register medical practitioner that will make a healthy society.

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