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Review Article

A REVIEW ON SELF MEDICATION IN GERIATRICS

V.K.Thamanna[1], K.Sreejith[2], Subanthu Arya[3], M.Salim Asna[4], Paul Kiran Mary[5], Sabnam Maziya[6]

Department of Pharmacy Practice, College of Pharmaceutical Sciences, Govt. Medical College, Kozhikode, Kerala-673008, India

Corresponding author: Thamanna.V.K
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Abstract:
Self medication is the practice of using drugs without doctor's prescription. Nowadays this behavior is growing widely among people and the prevalence is high. As increasing age, body changes can affect the way medicines are absorbed and used. Geriatric population are more prone to use self medication practice due to lack of knowledge and commonly used for diseases like allergic rhinitis, common cold, osteoarthritis, heartburn, insomnia, constipation etc. Polypharmacy should be avoided. In situations where communication is lacking and the patient may receive medications from multiple prescribers for similar conditions, polypharmacy is particularly likely to occur. There is a need to develop a treatment infrastructure that is sensitive to problems of older substance users. This should include education of professionals as well as that of the public at large.
Keywords: self medication practice, polypharmacy, multimorbidity, pathogen resistance

Introduction:

Self medication is the practice of using drugs without doctor's prescription. Nowadays this behavior is growing widely among people and the prevalence is high. Use of drugs without medical guidance may lead to problems like inappropriate, incorrect, or undue therapy, missed diagnosis, delays in appropriate treatment , pathogen resistance and increased morbidity. Promoting judicious and safe use of drugs is necessary to avoid the emerging microbial resistance issues. If a patient is taking number of drugs simultaneously, then the probability of prejudicial drug-drug interaction expected to increase exponentially[1].

Geriatric population have the highest drug utilization due to multimorbidity. Although the number of people over age 70 is expected to double within the next decades, population-based data on their medication patterns are scarce especially in combination with polypharmacy and potentially inappropriate medication (PIM). Older adults often suffer from multiple morbidities whose treatment is associated with a complexity that often leads to polypharmacy .[2] The most commonly used definition of polypharmacy is the concomitant use of five or more drugs. Older adults generally have more medical problems and use more medications, both prescription and OTC, when compared to younger adults. Many older adult patients self-treat using OTC medications. With the introduction of the Beers Criteria, there has been a virtual explosion of literature regarding the inappropriate use of medications in older adults. The Beers Criteria focus on prescription medications, with only a few OTC medications being addressed

(diphenhydramine, mineral oil, cimetidine). However, this provides little guidance for practitioners when making recommendations with respect to appropriate medications, particularly among many available OTC products.[3]

As increasing age, body changes can affect the way medicines are absorbed and used. For example, changes in the digestive system can affect how fast medicines enter the bloodstream. Changes in body weight can influence the amount of medicine you need to take and how long it stays in your body. The circulation system may slow down, which can affect how fast drugs get to the liver and kidneys. The liver and kidneys also may work more slowly affecting the way a drug breaks down and is removed from the body.[4]

Because of these body changes, there is also a bigger risk of drug interactions for older adults. Drug-drug interactions happen when two or more medicines react with each other to cause unwanted effects. This kind of interaction can also cause one medicine to not work as well or even make one medicine stronger than it should be. For example, you should not take aspirin if you are taking a prescription blood thinner, such as Warfarin, unless your health care professional tells you to.[5]

USE OF OTC DRUGS BY ELDERLY

Geriatric population are more prone to use self medication practice due to lack of knowledge and commonly used for diseases like allergic rhinitis, common cold, osteoarthritis, heartburn, insomnia, constipation etc.[6]

Beers Criteria: The Beers Criteria are published by the American Geriatrics Society (AGS) and updated periodically. The latest version was just published in October 2015. These criteria provide information on medications that are either ineffective or high risk when used to treat elderly patients.

The data are divided into two domains: (1) potentially inappropriate use of medications based on their class and (2) potentially inappropriate use of medications based on the patient's disease or condition.

The new additions to the 2015 edition include (1) a list of drugs for which dose adjustment is required based on kidney function and (2) drug–drug interactions. The intentions of the criteria are to “improve medication selection; educate clinicians and patients; reduce adverse drug events; and serve as a tool for evaluating quality of care, cost, and patterns of drug use of older adults” (p. 2; American Geriatrics Society, Beers Criteria Expert Update Panel, 2015).

In summary, the clinical pearls for treating elderly individuals include “start low and go slow,” medications for the elderly need to be initiated at doses lower than those for adults; and when dose increases are necessary, they should be lower in dose and slower in rate than for adults; psychological/psychiatric disorders such as depression, anxiety and substance abuse should be evaluated in the elderly and if present, properly treated. Evaluations of the elderly should include a comprehensive review of all drugs being taken, including those that are prescribed, those taken OTC and herbals. Finally, decreasing doses of or eliminating medications can be more effective than increasing doses or adding medication when treating the elderly.[7][8]

COMMONLY USED OTC DRUGS IN GERIATRICS

Hydrocodone

Hydrocodone, which is often blended with acetaminophen, is a pain medication often sold under the brand names Lorcet, Norco, and Vicodin. Because of the risk of addiction associated with its use, Hydrocodone is only prescribed to patients suffering from severe pain.

Simvastatin

Simvastatin, commonly sold under the brand name Zocor, is a medication used to lower the number of triglycerides and LDL ("bad cholesterol") present in a patient's blood while raising the amount of HDL ("good cholesterol") in his or her blood.

Lisinopril

Lisinopril, sold under the brand names Qbrelis, Zestril, and Prinivil, is an ACE inhibitor. It is prescribed to patients suffering from high blood pressure and congestive heart failure to reduce blood pressure by relaxing the patient's blood vessels.

Levothyroxine

Levothyroxine is commonly sold under the brand name Synthroid. As its name implies, it is used to treat hypothyroidism, the condition that occurs when the thyroid gland does not produce enough thyroid hormones and disrupts processes like metabolism and heart rate.

Amlodipine Besylate

Amlodipine Besylate is a blood pressure medication sold under the brand name Norvasc. Amlodipine Besylate is a calcium channel blocker, a type of drug that makes blood flow easier by slowing the heartbeat and decreasing each beat's strength.

Omeprazole

Omeprazole, often sold under the names Prilosec OTC, Zegerid, and Zegerid OTC, is a proton-pump inhibitor used to treat heartburn, stomach ulcers, esophageal damage, and gastroesophageal reflux disease (GERD).

Azithromycin

Azithromycin is used to treat bacterial infections. Brand names for azithromycin include AzaSite, Zmax, and Zithromax. It is commonly used to treat pneumonia, bronchitis, ear infections, and sinusitis.

Metformin

Metformin is a diabetes medication often sold under the names Glumetza, Fortamet, and Glucophage. It does not cure diabetes but helps patients manage their condition in conjunction with dietary changes.

Hydrochlorothiazide

Hydrochlorothiazide is a blood pressure medication often sold under the brand name Microzide. It is a diuretic, a type of drug often known as a "water pill," that works by stimulating urine production to flush water and salt from the body.[9][10][11]

PROBLEMS DUE TO OTC DRUGS IN GERIATRICS

Drug-condition interactions happen when a medical condition you already have makes certain drugs potentially harmful. For example, if you have high blood pressure or asthma, you could have an unwanted reaction if you take a nasal decongestant.

Drug-food interactions result from drugs reacting with foods or drinks. In some cases, food in the digestive track can affect how a drug is absorbed. Some medicines also may affect the way nutrients are absorbed or used in the body.

Drug-alcohol interactions can happen when the medicine you take reacts with an alcoholic drink. For instance, mixing alcohol with some medicines may cause you to feel tired and slow your reactions.[12]
It is important to know that many medicines do not mix well with alcohol. As you grow older, your body may react differently to alcohol, as well as to the mix of alcohol and medicines. Keep in mind that some problems you might think are medicine-related, such as loss of coordination, memory loss, or irritability, could be the result of a mix between your medicine and alcohol.[13][14]

Complications of Using NSAIDs

Nonsteroidal anti-inflammatory drugs (NSAIDs) is the blanket name for such OTC medications as aspirin, ibuprofen (Advil, Motrin), and naproxen sodium (Aleve). When your arthritis flares, it may be tempting to reach for an NSAID to curb the joint pain and inflammation and get back in the bridge or golf game. But there are some things you should know first.

NSAIDs also interfere with warfarin (Coumadin), a commonly prescribed blood thinner. In fact, there is a laundry list of medications and herbal supplements that can weaken or strengthen the effects of Coumadin. [15]

Acetaminophen: When to Use Caution

When taken as directed, acetaminophen (Tylenol) is generally considered safe unless you drink three or more alcoholic drinks a day, or take too much (overdose). If you are taking the blood-thinner warfarin (Coumadin), talk to your doctor or pharmacist before taking acetaminophen, because it can increase your risk of bleeding.[16]

Beware of Antihistamines and Sleep Aids

Diphenhydramine hydrochloride -- the active ingredient in many antihistamines and OTC sleep aids -- can be risky for elderly people, Schwab stresses. It has a prolonged half-life, which means it stays in the body for a long time, and can cause confusion and falls. In men, it may also increase risk of urinary retention.

High Blood Pressure and Drug Safety

Cold medicine ingredients may increase blood pressure levels or interfere with how well blood pressure medications work. Most of the things that are not safe for high blood pressure will state this clearly on the box

General Tips for OTC Pain Relievers

Some medications need to be taken with food to improve absorption or prevent potential side effects, while others are best taken on an empty stomach. This can be a problem for seniors who may have trouble fixing food for themselves or who may eat little. Talk to your doctor about what you can do to make sure that you are using a medication effectively. For example, drinking a glass of milk before taking an NSAID may help stave off stomach problems.

Memory problems can also be an issue with medication for seniors, raising the risk of accidental overdose if you forget you've already taken as much as recommended. Talk to your doctor before taking any OTC medications on a daily basis.[17][18]

TOP OTC DRUGS GERIATRICS SHOULD AVOID

STOMACH AND INTESTINAL MEDICATIONS

Cimetidine (Tagamet) Used to treat heartburn, indigestion or ulcers. Typical doses of cimetidine may have side effects, especially confusion. Mineral oil Used to treat constipation. There is potential for aspiration and adverse effects. Safer alternatives are available.

Stimulant laxatives: Bisacodyl (Dulcolax) Cascara sagrada Used to treat constipation. May be acceptable to use if patient also is taking opiate analgesics. Long-term use may cause bowel dysfunction.

ALLERGIES

Diphenhydramine (Benadryl) May cause confusion and sedation. Should not be used to aid sleep. Consider use of non-sedating antihistamines like loratadine as an alternative. If diphenhydramine is used to treat emergency allergic reactions, it should be used at the smallest dose possible.

INSOMNIA

Diphenhydramine (Compoz Nighttime Sleep Aid, Sominex Maximum Strength, Sominex Nighttime Sleep Aid, Unisom Sleepgels, Bayer PM, Excedrin PM, Tylenol PM); Aids containing diphenhydramine may cause

confusion, blurred vision, dry mouth, urinary retention or incontinence, and sedation. Consider melatonin containing products, wearing amber-colored glasses for two hours prior to bedtime, chamomile tea, soft music, and/or a warm bath before bedtime instead.

ANEMIA

Ferrous sulfate in doses greater than 325 mg Used to treat iron deficiency anemia. Doses greater than 325 mg per day do not dramatically increase the amount absorbed but greatly worsen constipation.

COLD MEDICATIONS

Combination Products: Aleve Cold and Sinus, Alka-Seltzer Plus Cold and Sinus, Dimetapp Cold and Fever, Robitussin Cold Severe Congestion, Sudafed Cold and Sinus, TheraFlu Severe Cold and Congestion; Most of these products contain antihistamines and decongestants, which may cause confusion, increased blood pressure, urinary incontinence or retention, and sedation. Recommend discussing with physician before using. Also, some products contain alcohol and sugar sweeteners, which may interact with prescription drugs.

Oral decongestants: Pseudoephedrine (Sudafed, Drixoral 12-Hour Non-Drowsy); Avoid with high blood pressure, dementia, diabetes, history of heart attack or stroke, or impaired kidney function.

VITAMINS

Vitamin A : Because vitamin A is stored in the body, high doses of it can lead to toxic syndrome. The incidence of vitamin A toxicity is increasing because of publicity regarding the potential benefits in cancer, skin disorders and wound healing. Monitor for headache, double vision, nausea, vertigo, fatigue or drowsiness. It is not recommended to take doses above the daily recommended intake from multivitamins and dietary supplements. Also, intake of beta-carotene (a vitamin A product) has been linked to increased risk for lung cancer in smokers.

Vitamin E: Vitamin E doses equal or greater than 400 units in older adults with chronic illnesses are associated with an increased risk of death.[19][20][21]

ABUSE AND MISUSE OF OTC DRUGS IN ELDERLY

There are multiple reasons why an elderly person may misuse prescription or OTC medications. Since increased drug exposure is one factor associated with adverse or unwanted medication effects, every clinician should evaluate the medications being taken by an elderly patient. Polypharmacy should be avoided. In situations where communication is lacking and the patient may receive medications from multiple prescribers for similar conditions, polypharmacy is particularly likely to occur. One method of avoiding this is to recommend, if feasible, that elderly patients receive the majority of their prescriptions from a single pharmacy. The pharmacist could then help identify inappropriate methods of polypharmacy.

Deficits in cognition, vision, hearing and strength, all of which commonly occur with the aging process, could increase the likelihood of medication misuse. For example, an elderly person who is forgetful may overuse or underuse medications. Similarly, an elderly individual who has difficulty with reading the instructions on the vial or has difficulty hearing verbal instructions may take medications in a manner that deviates from the original intention. Finally, an elderly person with diminished strength, or one who has painful arthritis, may overuse (to minimize the number of painful attempts to obtain medication) or underuse (avoid taking medications) because of difficulties with the medication vial.[22][23]

CONCLUSION

Older adults generally have more medical problems and use more medications, both

prescription and OTC, when compared to younger adults. Many older adult patients self-treat using OTC medications. With the introduction of the Beers Criteria, there has been a virtual explosion of literature regarding the inappropriate use of medications in older adults. Studies have shown that better communication between patients and health care providers predicts better self-management of medications. Over-the-counter medication use should be an informed process, and patients must be encouraged to obtain clear information regarding safe dosing and effective usage. New interventions
for educating patients in OTC use and interactions include interactive computer programs such as personal education programs (PEPs); these are designed for the learning styles and psychomotor skills of older adults.

There continues to be a perception that substance abuse and misuse in the elderly is not an important public health problem for society. Most of the emphasis has been placed on the study of younger populations without an appreciation of the unique problems presented by the elderly substance user. There is a need to develop a treatment infrastructure that is sensitive to problems of older substance users. This should include education of professionals as well as that of the public at large.[24][25]

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