Risks Of Polypharmacy

Amal AL-Anazi, BSc.(Pharm)
Medication Safety Officer In Eastern Region
What is Polypharmacy?

- *Polypharmacy* means “many drugs.”
- In practice, polypharmacy refers to the use of more medication than is clinically indicated or warranted.
- *Polypharmacy* can result in a gradual accumulation of side effects and severe adverse drug effects can result in serious life-threatening situations.
- **Polypharmacy** is most common in the elderly, but potentially affect anyone taking more than one medication.

- Nurses play a functional role in assisting patients to understand the **dangers of polypharmacy** through their knowledge and effort will make a difference in reduce and prevent serious drug consequences.
Children Are At Risk!

- Children are at risk with tags children.
- Children make up the growing number of people at risk for polypharmacy.
- It is the responsibility of adults to protect our children from dangers. We are in complete control over the medications given to our children, and it is our duty to be aware of the potential consequences, good and bad that may come to our children as a result of the medications we give them.
If our children are prescribed medications, we should ask:

- Is the drug approved by the Food and Drug Administration, and for what conditions is it approved?
- Is it approved for use by children?
- What are the short- and long-term benefits and risks of the drug?
- Are there any interactions this drug has with other medicines?
- How long will my child need to be on the drug?
- Are there any side effects I should be looking for to report back to the doctor?
Psychiatric Patients At Risk!

1. Disorders such as delirium, schizophrenia, paraphrenia, dementia.

   With

2. Thinking and behavior disturbances such as delusions, hallucinations, paranoia

   And

3. Severe enough to be of harm to the patient and/or others.
Why is Polypharmacy an Issue?

- The elderly use more drugs because illness is more common among the older population.
- For example, an older person may have all of the following conditions and have one or more medications prescribed to treat each condition:
  - Cardiovascular disease
  - Arthritis
  - Gastrointestinal disorder
  - Bladder dysfunction
  - Depression
- Increased medication administration errors.
- ADRs.
How Extensive is it?

- Problems associated with polypharmacy may be increased if older adults take:
  - Medication dosages that are too high.
  - Medications that are incorrectly prescribed or filled.
  - Medications that interact with or duplicate the actions of other medications.
  - Herbal supplements/remedies that interact with prescription medication.
Adverse Drug Reactions

- Any unexpected, unintended, undesired, or excessive response to a drug, with or without an “injury”.

- Over 100,000 deaths a year are attributed to adverse drug reactions, making ADRs the fourth leading cause of death in the U.S. (Lazarou, Pomeranz, & Corey, 1998).

- Other examples of ADRs include:
  - Peptic ulcers
  - Anemia
  - Deceased white blood cell production (which increases infection risk)
  - Liver damage
  - Kidney damage
  - Confusion/drowsiness (which can lead to falls and subsequent injuries)
 About 3 to 7% of all hospital admissions in the United States are for treatment of adverse drug reactions.

 Adverse drug reactions occur during 10 to 20% of hospital admissions, and about 10 to 20% of these reactions are severe.

 The most consistent risk factor for an adverse drug reactions is: 

   **The number of drugs being taken.**

 The risk increases exponentially as the number of drugs increases as illustrated in the following chart…
Adverse Drug Reactions

![Graph showing the relationship between the number of drugs taken and the percent of patients with ADR. The graph indicates an increasing trend as the number of drugs increases.]
Other risk factors for ADRs include:

- Having more than one chronic diseases.
- Taking more doses of medication (of any type) per day.
- Taking more medications.
- Having had a prior adverse drug reaction.
- Being older than 85 years (this is important because persons 85 and older are the fastest growing segment of the population).
- Having decreased kidney function.
Drugs most frequently associated with adverse reactions in the elderly:

- Psychotropic drugs, especially benzodiazepines (valium, ativan)
- Anti-hypertensive agents (blood pressure medications)
- Diuretics
- Digoxin (a heart medication)
- NSAIDS (Non-steroidal anti-inflammatory drugs, i.e. aspirin, Aleve, celebrex)
- Corticosteroids (i.e. prednisone - often used to treat arthritis)
- Warfarin (coumadin - a blood thinner for treating blood clots)
- Theophylline (theo-dur - for treating COPD, asthma)
Adverse Drug Reaction
Such irrational polypharmacy can arise from several factors:

- The prescriber hesitates to discontinue medications the patient has been taking a long time.
- The prescriber may add more drugs to the patient's regimen without removing any.
- The prescriber orders medication to alleviate adverse reactions to other medications.
Polypharmacy and Medication Non-adherence

- Sometimes being on multiple medications contributes to patients not taking those medications as the physician intended.
- It is important to recognize that medication non-adherence is a two-way street!
  - Physician factors play a role.
  - Patient factors play a role.
Polypharmacy and Medication Non-adherence

Example contributing factors:

- **Patients**
  - Underreporting symptoms
  - Use of multiple providers
  - Use of others’ medications

- **Physicians**
  - Limited time for discussion, diagnostics
  - Limited knowledge of geriatric pharmacology
  - The power of inertia
Polypharmacy and Medication Non-adherence

Additional contributing factors:

- Large number of medications
- Expensive medications
- Complex or frequently changing medication schedule
- Adverse reactions
- Confusion about brand name/trade name
- Difficult-to-open containers
- Rectal, vaginal, subcutaneous modes of administration
- Limited patient understanding of medication’s purpose
Polypharmacy and Medication Non-adherence

Like polypharmacy itself, the strongest predictor of medication non-adherence is the number of medications.

- Non-adherence rates are estimated at 25-50 percent of older adults.
- Non-adherence is intentional about 75% of the time:
  - Changes in medication regimen made by patients to:
    - Increase convenience
    - Reduce adverse effects
    - Decrease refill expense
Reducing Polypharmacy and Promoting Medication Adherence

Ask the right questions!

You can help protect older patients against polypharmacy by asking these questions:

- Are you currently taking five or more prescription medications?
- Do you ever borrow medications from other people?
- Do you use over-the-counter medications, including vitamins, dietary supplements, or herbal preparations?
- Do you request refills without seeing your health care provider?
- Do you have prescription medications from more than one health care provider?
- Do you have prescriptions filled at more than one pharmacy?
Reducing Polypharmacy and Promoting Medication Adherence

At least yearly, and more often if indicated, ask your older clients to bring in all medications they have at home

- Prescription medications
- Over-the-counter medications
- Vitamins supplements
- Herbal preparations
Use of vitamins and herbal remedies is highly prevalent among older adults!

Some serious drug interactions are possible with common herbal remedies, for example:

- Ginkgo biloba interactions include bleeding when combined with warfarin (coumadin), raised blood pressure when combined with a thiazide diuretics and coma when combined with trazodone (desyrel).
General Patient Education Information

Encourage your patients to:

- Use one pharmacist/pharmacy.
- Avoid seeing multiple physicians (except when necessary for second opinions).
- Do not use medications from others.
- All medicines, even over-the-counter vitamins and herbal, can have adverse effects.
- Make a list of all your medications including pill strength and dose, as well as herbal products, vitamins, supplements, and over-the-counter drugs & update it after every doctor visit.
- Carry your medications list everywhere. Bring it every doctor visit, along with the pill bottles.
- Avoid combination products such as cold formulas. Ask your pharmacist to help you find a product just for the symptoms you’re experiencing – not for every possible symptom.
- Report all symptoms.
- Never take a new drug without asking your pharmacist about its side effects and interactions with other drugs.
A structured approach to reducing polypharmacy: Key stages

1. Assess patient
2. Define overall treatment goals
3. Identify inappropriate drugs from accurate medicines list
4. Assess each drug for specific risks & benefits in the context of individual patient
5. Decide to stop or reduce dose
6. Communicate with GP
7. Monitor regularly & adjust

Lelly Oboh & Nina Barnett 2014
Adolf Hitler
Famous Faces of Polypharmacy...

- He was known to take many, many different medications.
- He has been rumored to have had syphilis, schizophrenia, GI issues, insomnia, Parkinson’s, and an expert in autism spectrum disorders reported that Hitler met all the criteria of Asperger Syndrome.
- Wikipedia states that by April 1945, Hitler was taking 28 different pills a day along with numerous injections (including many of glucose) every few hours and intravenous injections of methamphetamine at least one almost every day. That seems like it could really effect one’s decision making skills and rational thought… too bad he was trying to take over the world!
Thank you for listening