

PHARMACEUTICS-I (BP103T)

UNIT: 4 (Suppositories, Pharmaceutical incompatibilities)

CLASS: 8

TOPIC: Pharmaceutical incompatibility

Therapeutic incompatibility Therapeutic incompatibility may be as a result of prescribing certain drugs to a patient with the intention to produce a specific degree of pharmacological actions, but the nature or intensity of the action produced is different from that intended by the prescriber.

This occurs due to following reasons: -

1. Error in dosage
2. Wrong dose or dosage form
3. Contra-indicated drugs
4. Synergistic and antagonistic drugs
5. Drug interaction

1. Error in dosage Many therapeutic incompatibilities result from errors in writing or interpreting the prescription order. The most serious type of the dosage error in the dispensing is overdose of a medication. E.g., Atropine sulphate capsules

Rx

Atropine sulphate - 0.005g

Phenobarbitone - 0.015g

Aspirin - 0.300g

Causes: - In this prescription, the quantity of the atropine sulphate in each capsule is more than its recommended dose.

Remedy: - The prescription is referred back to the prescriber to correct the overdose of the atropine sulphate.

The recommended dose of atropine for a single capsule is 0.25 to 2mg.

2. Wrong dose or dosage form

There are certain drugs which have quite similar names and there is always a danger of dispensing the wrong drug. E.g., Prednisone and Prednisolone, Digoxin and Digitoxin. Sometimes many drugs are available in the different dosage forms and hence, if the dosage form is not clearly mentioned on the prescription, it becomes necessary to seek clarification from the prescriber. The responsibility of the pharmacist becomes to check the prescription intensively and if he finds these types of errors, he should immediately consult the prescriber for the clarification.

3. Contra-indicated drugs There are certain drugs which may be contra-indicated in a particular disease or a particular patient who is allergic to it. For Example, Corticosteroids are contra-indicated in the patients having peptic ulcers.

- The penicillin and sulpha drugs are contra-indicated in the patients who are allergic.
- Vasoconstrictors are contra-indicated in hypertensive patients.
- Barbiturates and morphine should not be given to the asthmatic patients. E.g., Sulphadiazine capsules

Causes: - Ammonium chloride is a urinary acidifier. It causes the deposition of the Sulphonamide crystals in the kidney.

Remedy: - Before prescribing such substances a doctor must be careful. If he does not, a pharmacist shows his caliber to point out such type of the doctor's error. Such must Immediately be referred back to the concerned doctor and get corrected.

4. Synergistic and antagonistic drugs

When two drugs are prescribed together, they tend to increase the activity of each other which is known as SYNERGISM. When two drugs are prescribed together, they tend to decrease the activity of each other which is known as ANTAGONISM.

For example,

- A combination of aspirin and paracetamol increases the analgesic activity.
- A combination of penicillin and streptomycin increases the antibacterial activity.
- Amphetamines show its antagonists effect with the barbiturates. E.g., Amphetamine sulphate syrup

Causes: - In this prescription, there is a combination of two sympathomimetic drugs thereby causing additive effect.

Remedy: - The prescription is referred back to the prescriber for necessary corrections

5. Drug interaction

The effect of one drug is altered by the prior or simultaneous administration of another drug. The drug interaction can usually be corrected by the proper adjustment of dosage if the suspected interaction is detected. E.g., Tetracycline capsule - 250mg capsules

- Direction: -Take one capsule every 6 hours with milk.

Causes: - Tetracycline is inactivated by calcium present in milk. So, it should not be taken with milk.

Remedy: - In this prescription, the therapeutic incompatibility is unintentional. So, the prescription is referred back to the prescriber to change the direction.

2 MARKS QUESTIONS

1. Define therapeutic incompatibility.

5 MARKS QUESTIONS

1. Explain about therapeutic incompatibility with examples.