

- DRUG INTERACTIONS
- Prepared By
- Dr Shaheen
- Delivered By
- Dr Naser
- **Drug interactions- objectives**
- Discuss Pharmacokinetic interactions
- List Pharmacodynamic interactions

- Comment on common Drug- Food interactions

- **Drug interactions**

- It is the modification of the effect of one drug (the object drug) by the prior or concomitant administration of another (precipitant drug).
- **Drug interaction – risk factor**
- Poly pharmacy
- Multiple prescribers

- Multiple pharmacies
- Genetic make up
- Specific population like .
elderly, obese, critically ill
patient
- Specific illness E.g. Hepatic
disease,
Renal
dysfunction,
- Narrow therapeutic index
drugs
Digoxin, Insulin, Lithium
, Antidepressant, Warfarin
- **Consequences of drug
interactions**
- **Loss of therapeutic effect**

- **Toxicity**
- **Unexpected increase in pharmacological activity**
- **Beneficial effects e.g additive & potentiation (intended) or antagonism (unintended).**

5) Chemical or physical interaction

e.g I.V incompatibility in fluid or syringes mixture

- Pharmacodynamic interaction
- **Drug-Food interactions**
- Grapefruit juice and Terfenadine
- Grapefruit juice and cyclosporin
- Grapefruit juice and felodipine
- Grapefruit contains : furanocoumarin compounds that can selectively inhibit CYP_{3A4}

- Changes in diet may alter drug action
- Theophylline: a high protein, low CHO diet can enhance clearance of this and other drugs
- MAO inhibitors
- Warfarin (anticoagulant)
- Alcohol with CNS-suppressant drugs may produce excessive drowsiness
- Phenytoin increases metabolism of vitamin D, vitamin K, and folic acid.
- Carbamazepine may affect metabolism of vitamin D, and

folic acid, leading to possible depletion

- Management of an adverse interaction
 - ❑ Dose related events may be managed by changing the dose of the affected drug.
- Eg., when miconazole oral gel causes an increase in bleeding time of warfarin then reducing the warfarin dose will bring the bleeding time back into range and reduce the risk of haemorrhage
- It is important to retitrate the dose of warfarin when the course of miconazole is complete.
 - ❑ The potential severity of some interaction require immediate

Cessation of the combination.

- Eg.,the combination of erythromycin and terfenadine can produce high terfenadine level with the risk of developing Torsades de Pointes.
- Dose spacing is appropriate for interaction involving the inhibition of absorption in the GI tract .
- Eg.,avoiding the binding of ciprofloxacin by ferrous salts