


Pharmacotherapeutics

- 
- * **Pharmacotherapeutics** The treatment of pathologic conditions through the use of drugs.

Acute Therapy

- * **Acute therapy often involves more intensive drug treatment and is implemented in the acutely ill (those with rapid onset of illness) or the critically ill.**
- * It is often needed to sustain life or treat disease.
- * **Examples:**
 - * The administration of vasopressors to maintain blood pressure and cardiac output after open heart surgery,
 - * the use of volume expanders for a patient who is in shock, and
 - * intensive chemotherapy for a patient with newly diagnosed cancer.

Maintenance Therapy

- * Maintenance therapy does not eradicate problems the patient may already have but will prevent progression of a disease or condition.
- * Examples:
- * Treatment of chronic illnesses such as hypertension.
- * Use of oral contraceptives for birth control.

Supplemental Therapy

- * Supplemental (or replacement) therapy supplies the body with a substance needed to maintain normal function.
- * Examples:
- * administration of insulin to diabetic patients.
- * Iron to patients with iron-deficiency anemia.

Palliative Therapy

- * Palliative therapy focuses on providing patients with relief from the symptoms, pain, and stress of a serious illness.
- * The goal is to improve quality of life for both the patient and the family.
- * **Examples:**
- * use of high-dose opioid analgesics to relieve pain in the final stages of cancer.

Supportive therapy

- * Supportive therapy maintains the integrity of body functions while the patient is recovering from illness or trauma.
- * **Examples**
- * Provision of fluids and electrolytes to prevent dehydration in a patient with influenza who is vomiting and has diarrhea.
- * Administration of fluids, volume expanders, or blood products to a patient who has lost blood during surgery.

Prophylactic Therapy and Empiric Therapy

- * **Prophylactic therapy** is drug therapy provided to *prevent* illness or other undesirable outcome during *planned* events.
- * **Example:** use of preoperative antibiotic therapy for surgical procedures.
- * **Empiric therapy** involves drug administration when a certain pathologic condition has an uncertain but high likelihood of occurrence based on the patient's initial presenting symptoms.
- * **Example :** use of antibiotics active against the organism most commonly associated with a specific infection before the results of the culture and sensitivity reports are available.

Monitoring

- * Evaluation of clinical response of patient to the treatment.
- * Evaluating the clinical response requires knowledge with both the drug's intended therapeutic action (beneficial effects) and its unintended possible **adverse effects** (predictable adverse drug reactions).
- * **Examples:**
- * Observing for the therapeutic effect of reduced blood pressure following administration of antihypertensive drugs.

Drug interaction

- * Alteration in the pharmacologic or pharmacokinetic activity of a given drug caused by the presence of one or more additional drugs.

Additive effects

- * **Additive effects** Drug interactions in which the effect of a combination of two or more drugs with similar actions is equivalent to the **sum** of the individual effects of the same drugs given alone.

$$1 + 1 = 2$$

Synergistic effects

- * Drug interactions in which the effect of a combination of two or more drugs with similar actions is greater than the sum of the individual effects of the same drugs given alone.

$1 + 1 = \text{greater than } 2$

Antagonistic effects

- * Drug interactions in which the effect of a combination of two or more drugs is less than the sum of the individual effects of the same drugs given alone.

$1 + 1 = \text{less than } 2$

Incompatibility

- * The characteristic that causes two parenteral drugs or solutions to undergo a reaction when mixed or given together that results in the chemical deterioration of at least one of the drugs.

Allergic reaction

- * An immunologic hypersensitivity reaction resulting from the unusual sensitivity of a patient to a particular medication; a type of adverse drug event.

PHARMACOGNOSY

- * The study of drugs that are obtained from natural plant and animal sources.

Toxicology

- * **Toxicology** The study of poisons, including toxic drug effects, and applicable treatments.

COMMON POISONS AND THEIR ANTIDOTES

SUBSTANCE	ANTIDOTE
Acetaminophen	Acetylcysteine
Organophosphates (e.g., insecticides)	Atropine
Tricyclic antidepressants, quinidine	Sodium bicarbonate
Calcium channel blockers	Intravenous calcium
Iron salts	Deferoxamine
Digoxin and other cardiac glycosides	Digoxin antibodies
Ethylene glycol (e.g., automotive antifreeze solution), methanol	Ethanol (same as alcohol used for drinking), given intravenously
Benzodiazepines	Flumazenil
Beta blockers	Glucagon
Opiates, opioid drugs	Naloxone
Carbon monoxide (by inhalation)	Oxygen (at high concentration), known as bariatric therapy