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Over-The-Counter **Drugs** **(OTC)**

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OTC-Drugs

- **Definition: OTC are non-prescription drugs dispensed to the public freely without any restriction.**

- **-Many drugs have the same ingredients but differ in a way or another. They are made different from one another by the addition of questionable ingredients e.g. same analgesic may be added to caffeine or antihistamines to give another name or a brand names chosen to suggest specific use or strength (“feminine pain”, extra”), or the difference is due to special dosage form (enteric-coated tablets, sustained release product).**

Why it is important for the clinician to be familiar with OTC?:

1-Treating common illness, therefore it may be important to help a patient with a minor illness to properly selecting a drug from this category.

2-Many of the active ingredients contained in OTC drugs may harmfully affect a pre-existing disease state or interact with a beneficially prescribed drug.

3-The misuse or abuse of OTC drugs may produce significant medical complications e.g. phenylpropanolamine which is present in many cold and weight control products may be abused instead of amphetamine or cocaine. Failure to follow the proper dosage of these drugs may produce dangerous outcome e.g. severe hypertensive crisis or intracranial hemorrhage.

Examples of some OTC drugs and their indications:

A-Systemically acting drugs:

-Acyclovir

Antiviral.

-Brompheniramine

Antihistamine.

-Chlophendianol HCl

Antitussive.

-Chlopheniramine

Antihistamine.

-Cholestyramine

Cholesterol-lowering drug.

-Cimetidine

Gastric acid reducer.

Clemastine fumarate

Colestipol

Dexbrompheniramine maleate

Diflunisal

Diphenhydramine HCl

Doxylamine succinate

Dyclonine HCl

Antihistamine.

**Cholesterol-
lowering drug**

Antihistamine.

**Analgesic
antipyretic**

**Antihistamine,
antitussive,
sleep aid.**

Sleep aid.

**Oral local
anesthetic,
analgesic.**

Famotidine

**Gastric ulcer
reducer.**

Fluoride salts

**Dental caries
prophylaxis.**

Ibuprofen

**Analgesic
antipyretic.**

Ketoprofen

**Analgesic
antipyretic.**

Lopramide

Antidiarrheal.

Methocarbimol

Muscle relaxant.

Methoxypheniramine HCl

Antihistamine.

Naproxen

**Analgesic
antipyretic.**

Nicotine

Nizatidine

Phenylpropanolamine HCl

Pseudoephedrine HCl

Ranitidine

Triprolidine HCl

Smoking cessation.

**Heartburn
prevention.**

**Nasal decon-
gestant.**

**Nasal decon-
gestant.**

**Gastric acid
reducer.**

Antihistamine.

B-Topically acting drugs:

Butoconazol nitrate

Anticandidal.

Clotrimazole

Antifungal.

Cromolyn

**Allergic
rhinitis.**

Ephedrine sulphate

**Hemorrhoidal
vasoconstrictor.**

■ **Epinephrine HCl**

**Hemorrhoidal
vasoconstrictor.**

Haloprogin

Antifungal.

Ketoconazol

Dandruff.

Miconazole nitrate 2%

Antifungal.

Miconazole nitrate Supp.

**Vaginal yeast
infection.**

Minoxidil

Hair grower.

Nystatin

Anticandidal.

Oxymetazoline HCl

Nasal decongestant.

Permethrin

Pediculicide.

Phenylephrine HCl

Hemorrhoidal vasoconstrictor.

Tioconazole

Antifungal.

Xylometazoline HCl

Nasal decongestant.

Over-the-counter drugs, ingredients, and dosage:

- **The comments given with this list are based upon the efficacy of the ingredients of the products together with the following principles:**

1-Select the product that is simplest in formulation with regard to ingredients and dosage form. In general, single-ingredient products are preferred. Some combination products contain effective doses of all ingredients, others contain therapeutic doses of some ingredients and subtherapeutic doses of others. There may be differing durations of action among the ingredients.

2-Select a product that contains a therapeutically effective dose.

3-Select a product that lists its ingredients and their amounts. The label of the product should always be read carefully.

4-Recommend a generic product if one is available.

5-Be wary of “gimmicks” or advertising claims of specific superiority over similar products.

6-For children, the dose, dosage form, and palatability of the product will be prime considerations.

Principles:

1-H2 receptor antagonists:

Examples:

-Cimitidine	200mg twice daily
-Famotidine	10-20mg daily
-Nizatidine	75mg twice daily.
-Ranitidine	75mg twice daily.

Comments: These drugs may be used in lower doses to relieve heartburn, acid indigestion and sour stomach. Should not be used for longer than 2 weeks. Not approved for children.

2-Acne preparations:

Examples:

-Benzoyl peroxide, 2.5, 5,10 %.

Comments: Apply sparingly once or twice daily. Decrease doses if excessive skin irritation occurs.

3-Allergy and cold preparations:

Examples:

- Chlorpheniramine 4mg/4-6 h; 12mg/12h.
- Brompheniramine 4mg/4-6h; 12mg/12h
- Clemastine fumarate 1.34mg/12h.
- Diphenhydramine 25-50mg/4-6h
- Chlorpheniramine (8-12mg) with phenylpropanolamine
- Clemastine fumarate (1.34mg) with phenylpropanolamine (75mg)/12 h.
- Triprolidine HCl (2.5mg) with pseudoephedrine (60mg).

- **Comments:** Antihistamines alone relieve most symptoms associated with allergic rhinitis or hay fever. Chlorpheniramine, brompheniramine, and clemastine cause **less drowsiness** than diphenylhydramine, methapyrilline, pyrilamine, doxylamine, and phentoloxamine. **Occasionally** symptoms unrelieved by the antihistamine respond to the addition of a sympathomimetics.

4-Analgesics and antipyretics:

Examples:

-Aspirin	300-600mg/4-6h.
-Acetaminophen	300-600mg/4-6h.
-Ibuprofen	200-400mg/4-6h.
-Naproxen	200mg/8-10h.
-Ketoprofen	12.5mg/4-6h.

- **Comments:** There are numerous product modifications, including the addition of antacid, caffeine, and methapyriline; enteric coated tablets; long-acting or extra-strength formulations; and various mixtures of analgesics. **None have any substantial advantage over a single-ingredient product.** Acetaminophen lacks any anti-inflammatory activity but is available as a liquid which is used for infants and children.

5-Antacids:

Examples:

-Magnesium hydroxide and aluminum hydroxide combinations.

Comments: This combination is less likely to cause constipation or diarrhea and offer high neutralizing capacity.

6-Anthelmintics:

Examples:

-Pyrantel pamoate 11mg/kg

Comments: Treat all members of the household. Disinfection of linens and environment is required to prevent reinfection.

7-Antidiarrheal agents:

Examples:

-Bismuth subsalicylate 600mg/4 times daily

Comments: Can turn tongue and stools black. Salicylates are absorbed and can cause tinnitus.

-Loperamide 4mg initially, then 2 mg after each loose stool, maximum 16 mg/day.

Comments: It is a synthetic opioid that does not penetrate the CNS. Avoid in febrile patients.

8-Antifungal topical preparations:

Examples:

-Clotrimazole 1% cream, or 100mg vaginal inserts.

-Tolnafate 1% solution, cream, or powder.

-Mizonazole nitrate 2% cream, or 100mg vaginal tablets.

- **Comments:** Fungicidal, effective for the treatment of tinea pedis, tinea cruris, and tinea corporis. Clotrimazole and miconazole are also effective against candida albicans. Insert one applicatorful or one insert at bed time for 7 days.

9-Anti-inflammatory topical preparations:

Examples:

- Hydrocortisone 0.5%.**
- Hydrocortisone 1% cream or spray.**

Comments: Used to temporarily relieve itching and inflammation associated with minor rashes due to contact or allergic dermatitis, insect bites and hemorrhoids. Apply small amounts and rub thoroughly into skin 3 or 4 times daily.

10-Antiseborrheal agents:

Examples:

- Selenium sulfide 1-2%**
- Zinc pyrithion 1-2%**

Comments: Both are cytostatic agents that decrease epidermal turnover rates. Work into clean scalp for 5-10 minutes 2-3 times weekly. Selenium sulfide can be irritating to the eyes and skin.

11-Antitussives:

Examples:

- Codeine 10-20 mg/4-6 h. (with guaifenesin).
- Dextromethorphan 10-20 mg/4h or 30mg/6 h. (with guaifenesin).

Comments: Low addicting liability of codeine with this dose. Watch for hidden ingredients in these products.

12-Decongestants:

Examples:

- Oxymetazoline (topical).**
- Xylometazoline (topical).**
- Phenylephrine (topical).**
- Pseudoephedrine 60mg /4h (oral) or
120mg/12 h. (oral).**
- Phenylpropanolamine 25mg/4 h.
(oral).**

- **Comments:** Topical sympathomimetics are effective in acute management of rhinorrhea associated with common colds and allergies. **Long-acting agents are preferred.** Oral decongestants have a prolonged duration of action but may cause more systemic effects. Pseudoephedrine has the least CNS stimulatory effect. Phenylpropranolamine is also effective.

13-Expectorants:

Examples:

-Guaifenesin (20mg/ml). Age >12, 200-400 mg/4h.; age 6-13, 100-200 mg/4h.; age 2-6, 50-100 mg/4h.

Comment: It is the only expectorant that has a scientific evidence of safety and efficacy.

14-Laxatives:

Examples:

- Bulk formers.**
- Stool softeners: docusate sodium.**
- Saline laxatives.**

Comments: The safest laxatives for chronic use include the bulk formers and stool softeners. Saline laxatives may be used acutely but not chronically.

15-Pediculicides:

Examples:

-Permethrin 1%.

-Pyrethrums combined with piperonyl-butiride.

Comments: Apply to dry hair and scalp, wetting entire area, leave on for 10 minutes. Lather with water and rinse. Avoid contact with eyes. Repeat once if reinfestation occurs. Comb out nits.

16-Sleep aids:

Example:

-Diphenhydramine 25-50 mg at bed time.

Comments: It is an antihistaminic with well documented CNS depressant effects. It is also available as a sedative.

17-Smoking cessation aids:

Examples:

- Nicotine.
- Nicotine polacrilex.

Comments: Quit rates associated with these products at 6 weeks exceed placebo (50% vs. 27%). Quit rate after 1 year is about 25%. **Review directions for use carefully**, since self-titration and weaning are involved.

- Many of the more potent OTC ingredients are **“hidden”** in products. The lack of awareness of the ingredients present in OTC products and the belief by many physicians that OTC products are **“ineffective and harmless”** may cause diagnostic confusion and perhaps interfere with therapy.

- **Harmful interactions may occur. The overuse or misuse of OTC products may induce significant medical problems.**

Examples of these problems:

-Rebound congestion from the regular use of nasal sprays for more than 3 or 4 days.

-The improper and chronic use of some antacid (e.g. aluminum hydroxide) may cause constipation and even impaction in elderly people as well as hypophosphatemia.

-Laxative abuse (by elderly patients) can result in abdominal cramping and fluid and electrolyte disturbances.

-Insomnia, nervousness, and restlessness can result from the use of sympathomimetics or caffeine hidden in many OTC products.

-The chronic systemic use of some analgesics containing large amounts of caffeine may produce rebound headaches.

-The long-term use of analgesics, especially those containing phenacetin, has been associated with interstitial nephritis.

-Acute ingestion of large amounts of aspirin or acetaminophen by adults or children causes serious toxicity.

-Aspirin in certain viral infection in young children has been associated with serious hepatitis (Reye syndrome).

-Many drugs can produce allergic reactions.