Retention Enemas

A number of solutions are administered rectally for local effects (e.g., hydrocortisone) or for systemic absorption (e.g., aminophylline). In the case of aminophylline, rectal administration minimizes the undesirable gastrointestinal reactions associated with oral therapy. Clinically effective blood levels of the agents are usually obtained within 30 minutes following rectal instillation. Corticosteroids are administered as retention enemas or continuous drip as adjunctive treatment of some patients with ulcerative colitis.

Evacuation Enemas

Rectal enemas are used to cleanse the bowel. Commercially, many enemas are available in disposable plastic squeeze bottles containing a premeasured amount of enema solution. The agents are solutions of sodium phosphate and sodium biphosphate, glycerin and docusate potassium, and light mineral oil.

Instruction from a pharmacist is advantageous to ensure that the patient correctly uses these products. The patient should be advised to gently insert the tip of the product with steady pressure and be told that it is not absolutely necessary to squeeze all of the contents out of the disposable plastic bottle. The patient should be told that the product will most probably work within 5 to 10 minutes.

TOPICAL TINCTURES

Examples of tinctures for topical application to the skin are presented in Table 13.10. Those of particular pharmaceutical interest are discussed briefly as follows.

Iodine Tincture

Iodine tincture is prepared by dissolving 2% iodine crystals and 2.4% sodium iodide in an amount of alcohol equal to half the volume of tincture to be prepared and diluting the solution to volume with sufficient purified water. The sodium iodide reacts with the iodine to form sodium triiodide:

$$I_2 + NaI \leftrightarrow NaI_3$$

This reaction prevents formation of ethyl iodide from the interaction between iodine and alcohol, which would result in the loss of the antibacterial activity of the tincture. An added benefit of the triiodide form of iodine is its water solubility, which is important should the tincture, which contains between 44% and 50% alcohol, be diluted with water during use.

The tincture is a popular local anti-infective agent applied to the skin in general household first aid. The reddish-brown color, which produces a stain on the skin, is useful in delineating the application over the affected skin area. The tincture should be stored in a tight container to prevent loss of alcohol.

Compound Benzoin Tincture

Compound benzoin tincture is prepared by maceration in alcohol of 10% benzoin and lesser amounts of aloe, storax, and Tolu balsam totaling about 24% of starting material. The drug mixture is best macerated in a wide-mouthed container because it is difficult to introduce storax, a sticky semiliquid material, into a narrow-mouthed container. Generally, it is advisable to weigh the storax in the container in which it will be macerated to avoid possible loss through a transfer of the material from one container to another.

The tincture is categorized as a protectant. It is used to protect and toughen skin in the treatment of bedsores, ulcers, cracked nipples, and fissures of the lips and anus. It is also commonly used as an inhalant in bronchitis and other respiratory conditions, 1 teaspoonful commonly being added to a pint of boiling water. The volatile components of the tincture travel with the steam vapor and are inhaled by the patient. Because of the incompatibility of the alcoholic tincture and water, the mixture produces a milky product with some separation of resinous material. Alcohol or acetone may be used as necessary to remove the residue from the vaporizer after use.