Soaking and Storage Solutions

Hard lenses are placed in a soaking solution once they are removed from the eye. Soaking solutions contain a sufficient concentration of disinfecting agent, usually 0.01% benzalkonium chloride and 0.01% edetate sodium, to kill surface bacteria. Overnight soaking is advantageous because it keeps the lenses wet and the prolonged contact time helps to loosen deposits that remain after routine cleaning.

Wetting Solutions

Wetting solutions contain surfactants to facilitate hydration of the hydrophobic lens surface and enable the tears to spread evenly across the lens by providing it with temporary hydrophilic qualities. These solutions also provide a cushion between the lens and the cornea and eyelid. Typical ingredients include a viscosity-increasing agent, such as hydroxyethyl cellulose; a wetting agent, such as polyvinyl alcohol; preservatives, such as benzalkonium chloride or edetate disodium; and buffering agents and salts to adjust the pH and maintain tonicity.

Combination Solutions

Combination solutions mix effects, such as cleaning and soaking, wetting and soaking, or cleaning, soaking, and wetting. While they are characterized by ease of use, combination products may lower the effectiveness of cleaning if the concentration of cleaning solution is too low to adequately remove debris from the lens. These combination solutions should be reserved for wearers who have a demonstrated need for simplification of lens care.

Products for RGP Contact Lenses

Care of RGP lenses requires the same general regimen as for hard contact lenses except that RGP-specific solutions must be used. One of two cleaning methods, either hand washing or mechanical washing, may be used. In the first method, the lens may be cleaned by holding the concave side up in the palm of the hand. The lens should not be held between the fingers because the flexibility of the lens may allow it to warp or turn inside out. Mechanical washing is advantageous because the possibility of the lens turning inside out or warping during cleaning is minimized.

After cleansing, the RGP lens should be thoroughly rinsed and soaked in a wetting or soaking solution overnight. After overnight soaking, the lens is rubbed with fresh wetting or soaking solution and inserted into the eye. To facilitate removal of stubborn protein deposits, weekly cleaning with enzymatic cleaners is recommended.

Clinical Considerations in the Use of Contact Lenses

Although most medicated eye drops may be used in conjunction with the wearing of contact lenses, some caution should be exercised and drug-specific information used, particularly with soft contact lenses, because this type of lens can absorb certain topical drugs and affect bioavailability (13,15).

Use of ophthalmic suspensions and ophthalmic ointments by contact lens wearers presents some difficulties. The drug particles in ophthalmic suspensions can build up between the cornea and the contact lens, causing discomfort and other undesired effects. Ophthalmic ointments not only cloud vision but may discolor the lens. Thus, an alternative dosage form, such as an ophthalmic solution, may be prescribed or lens wearing deferred until therapy is complete.

Some drugs administered by various routes of administration for systemic effects can find their way to the tears and produce drug–contact lens interactions. This may result in lens discoloration (e.g., orange staining by rifampin), lens clouding (ribavirin), ocular inflammation (salicylates), and refractive changes (acetazolamide) (13). In addition, drugs that cause ocular side effects have the potential to interfere with contact lens use. For example, drugs with anticholinergic effects (e.g., antihistamines, tricyclic antidepressants) decrease tear secretion and may cause lens intolerance and damage to the eye. Isotretinoin, prescribed for severe, recalcitrant acne, can induce marked dryness of the eye and may interfere with the use of