

AMERICAN ACADEMY OF PEDIATRICS

**Committee on Environmental Hazards
Committee on Fetus and Newborn
Committee on Accident and Poison Prevention**

Hyperthermia From Malfunctioning Radiant Heaters

The use of infant radiant warmers poses a hazard of neonatal hyperthermia. Serious overheating can result from mechanical failure of the controls, from dislodgment of the sensor probe, or from manual operation without careful monitoring. Deaths have been associated with hyperthermia induced by radiant warmers (reports will be published).

Therefore, when a warmer is purchased,

adequacy of the safety mechanisms to prevent overheating should be given prime consideration. Radiant warmers should be used with caution and awareness of this lethal potential.

**COMMITTEE ON ENVIRONMENTAL HAZARDS
COMMITTEE ON FETUS AND NEWBORN
COMMITTEE ON ACCIDENT AND POISON
PREVENTION**

Committee on Drugs

Topical Antibiotics

The Committee on Drugs has reviewed available data on the efficacy and safety of topical antibiotics other than otic and ophthalmologic preparations. These agents, usually in combination, are widely used for first aid of minor cuts, burns, and abrasions; for this purpose they are both prescribed by physicians and purchased over the counter for self-administration. Products sold without prescription carry the legend "To help prevent infection in minor cuts, burns, and abrasions," and also the warning "In case of deep or

puncture wounds or serious burns, consult a physician. If redness, irritation, swelling or pain persists or increases, or if infection occurs, discontinue use and consult a physician."

In addition to giving patient advice about the handling of minor wounds, the physician has the responsibility to decide what treatment is best for established infections of the skin.

COMPOSITION

Because of the propensity of agents used on the

skin to induce sensitization, the antibiotics preferred in topical preparations are those that are less likely to be used for systemic administration. These include bacitracin, gramicidin, neomycin, and polymyxin B. The antimicrobial spectrum of these agents varies; thus, combinations are used in an attempt to "cover" the majority of common skin pathogens.

SAFETY

Absorption

After lavish application of these products to normal skin, antibiotics have not been detectable in blood or urine. However, applications to large areas denuded by serious burns results in significant absorption, and systemic toxicity has been reported. This is probably also to be expected when topical antibiotics are used on large areas denuded for other reasons.

Sensitization

In practice, the question of sensitization is specifically directed at neomycin. Both the European and North American Contact Dermatitis Research Groups, each surveying several thousand patients, report an incidence of sensitization to neomycin of between 3.7% and 6%. These patients all had chronic dermatoses, and neomycin-containing topical preparations had been used for many of them, often for prolonged periods. The criterion for determining neomycin sensitivity in these studies was a positive reaction to a patch test using 20% neomycin in petrolatum. This has been considered by some authorities to be an excessive concentration of the drug for such testing.

In studies on the efficacy of neomycin in a wide range of topical infections, involving large numbers of patients, many investigators reported no sensitization to topically administered neomycin, although they had been alerted to such a possibility.

Several studies indicate by patch testing that a proportion of persons who are sensitive to neomycin may also react to other aminoglycosides (gentamicin, kanamycin, paromomycin, and streptomycin). Therefore, in a patient who is known to be sensitive to neomycin, it is probably advisable to consider the possible risk versus benefit from the use of any of the systemic aminoglycoside antibiotics.

EFFICACY

In a number of reports concerning the use of topical antibiotics in a variety of dosage forms for conditions in animals and humans—including

chronic dermatoses, clean and contaminated wounds, minor cuts, abrasions, and burns—most reported significant benefit (mainly a reduction in the incidence of infection) and a few reported some benefit. Topical placebo did not prove superior in any study. The difficulties of standardizing conditions for studying the efficacy of topical antibiotics in controlling infection in minor cuts, scratches, abrasions, and burns are obvious and may account for the varying results reported. However, in most controlled studies, topical antibiotics were found to be no more effective than placebo in treating impetigo. In established pyoderma, systemic therapy is the treatment of choice.

CONCLUSIONS

1. In most instances, gentle, thorough cleansing of minor wounds and burns, and protection of the area until healing occurs is sufficient treatment. The literature⁹ available at the time this statement was prepared indicates that topical antibiotics may prevent infection after minor cuts, abrasions, and burns. Thus, their use in such conditions may be appropriate as an adjunct to cleansing.

2. Systemic antibiotics rather than topical antibiotics are recommended for the treatment of chronic pyodermas, such as impetigo.

3. Allergic reactions to topical antibiotics, including neomycin, are uncommon. However, when a patient is known to be sensitive to neomycin, the systemic use of any of the aminoglycoside antibiotics should be avoided if possible.

4. Topical aminoglycosides should not be used on large denuded skin surfaces (such as those that result from burns) because of possible absorption and systemic toxicity and because, when used topically, these agents encourage the growth of resistant organisms.

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⁹A bibliography on topical antibiotics can be obtained from the Department of Committees, American Academy of Pediatrics, P.O. Box 1034, Evanston, Illinois 60204.

Topical Antibiotics

Committee on Drugs, Sydney Segal, Sanford N. Cohen, John Freeman, Benjamin M. Kagan, Ralph E. Kauffman, Albert W. Pruitt and Lester F. Soyka
Pediatrics 1977;59;1041

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