Wet Wrap Therapy in Moderate to Severe Atopic Dermatitis

Noreen Heer Nicol, PhD, RN, FNP[a,*], Mark Boguniewicz, MD[b]

KEYWORDS

• Wet wrap therapy • Wet wrap • Wet dressings • Occlusive dressings
• Occlusion therapy • Atopic dermatitis • Atopic eczema

KEY POINTS

- Atopic dermatitis (AD) remains a complex, common, chronic, and relapsing skin disorder, and a global public health problem.
- National and international guidelines address AD care in a stepwise fashion. Wet wrap therapy (WWT) is a therapeutic intervention for moderate to severe AD.
- WWT plays an important role as an acute therapeutic intervention for management of moderate to severe AD used with undiluted topical corticosteroids of appropriate potency.
- WWT should not be used for mild AD or as a chronic or maintenance therapy.
- WWT should be considered as a treatment option ahead of the systemic therapies for patients failing conventional topical therapy.

INTRODUCTION

Atopic dermatitis (AD) remains a complex, common, chronic, and relapsing skin disorder of infants and children but can affect patients of any age. In the United States, prevalence in school-aged children has been found to be up to 18%.[1] In addition, recent data from the National Health Interview Survey show that up to 10% of adults in the United States report having eczema and the prevalence is higher in those with concomitant allergies or asthma.[2] In other industrialized countries, prevalence greater than 20% has been reported.[3] Of note, in a large cohort of subjects with mild to moderate AD, it was not until age 20 that 50% had at least 1 lifetime 6-month period free of symptoms and treatment.[4] More than half of these patients will develop asthma and allergies suggesting an atopic march in a significant number of patients with AD.[5]

[a] College of Nursing, University of Colorado, 13120 East 19th Avenue, Mail Stop C288-18, Aurora, CO 80045, USA; [b] Department of Pediatrics, National Jewish Health, University of Colorado School of Medicine, Denver, CO 80206, USA
* Corresponding author.
E-mail address: Noreen.nicol@ucdenver.edu

Immunol Allergy Clin N Am 37 (2017) 123–139
http://dx.doi.org/10.1016/j.iac.2016.08.003
immunology.theclinics.com

AD occurs in genetically predisposed individuals with a defective skin barrier and abnormal immune responses to irritants, allergens, and microbial organisms.[6] AD is characterized by abnormal skin barrier function associated with abnormalities in cornified envelope genes, reduced ceramide levels, increased levels of endogenous proteolytic enzymes, and enhanced transepidermal water loss (TEWL).[7] Skin barrier may also be damaged by exposure to exogenous proteases from *Staphylococcus aureus*.[8] Skin barrier abnormalities contribute to increased allergen absorption and microbial colonization. Exposing the immune system of the skin to allergen compared with systemic or airway sensitization results in a higher allergic antibody response and could predispose susceptible children to developing asthma and allergic rhinitis later in life.[9] Patients with AD typically have severe pruritus and disrupted sleep that affects their quality of life, as well as that of family members.[10] When AD remains in poor control, patients and caregivers can experience multiple medical and psychosocial issues. Associated with this, AD imposes a significant economic burden on the patient, family, and society.[11]

ROLE OF MULTIDISCIPLINARY CARE

A multidisciplinary care model that incorporates a stepwise approach to the management of moderate to severe AD has been used by the authors for almost 3 decades.[12,13] In this approach, the importance of teaching patients or caregivers skills to self-monitor and manage disease with the help of an individualized plan is a key component.[14] In the authors' center, the multidisciplinary team is composed of pediatric allergist-immunologists with extensive experience in basic and clinical research in AD, pediatric nurse specialists, behavioral clinicians, fellows-in-training, physician assistants, nurse educators, child-life specialists, art therapists, social workers, dietitians, and rehabilitation therapists. Dermatologists are available for consultation if the diagnosis of AD is in question or alternative therapies, such as phototherapy, are being considered. The philosophy of care is based on a personalized approach with comprehensive evaluation and treatment tailored to the needs and goals of the patient and caregiver.

In this treatment model, all members of the multidisciplinary team teach the same key concepts and reinforce the messages being delivered to the patients and caregivers regardless of which educational strategy is incorporated. Educational strategies include one-on-one communication, direct demonstration with reinforcement, group discussions, classroom teaching, written materials, and AD Home Care Plan or AD Action Plan. AD Home Care Plans or AD Action Plans are integral to the management of the AD patient[15–17] (**Box 1**). Development of a skin care regimen that is agreed on by the clinician, patient, and caregivers requires open communication. Patients or caregivers, especially given the degree of sleep disruption associated with AD,[18] may forget or confuse skin care recommendations given to them without a written plan. This plan should be reviewed and modified at follow-up visits.

STEPWISE MANAGEMENT OF ATOPIC DERMATITIS

National and international AD guidelines outline basic treatment of AD to establish the foundation of AD management.[9,19,20] These guidelines recommend 3 basic components of optimal skin care. First and foremost, the regular use of moisturizers[21] or emollients in conjunction with skin hydration is essential to address the skin barrier defect. Second, identification and avoidance of specific and nonspecific triggers is critical in reducing symptoms. Third, depending on the severity of AD, topical therapeutic agents may be initiated in a stepwise fashion. Topical corticosteroids are often the standard of care to which other treatments are compared.