“Natural” Remedies for Eczema: Evidence for the Alternative?

Limited data suggest the possibility that some natural agents may be particularly useful in the treatment of atopic dermatitis.

BY PETER A. LIO, MD

“Alternative medicine” can serve as a blanket term for everything from Kirlian photography to chicken soup; from beautiful, complex systems (e.g. Traditional Chinese Medicine) to oversimplified “supplements.” Perhaps the most functional definition of alternative medicine would be treatments that are not based on evidence, in stark contrast to our ever-constant goal of evidence-based medicine. In controlled settings, many treatments have been tested and found not to work as claimed or hoped; we can safely and rightfully cross these off the list. However, a much larger number of therapies do not yet have sufficient evidence upon which to pass judgment. In some cases, tantalizing data suggest that the “alternative” designation is merely temporary, and that some of these agents have a future of evidence-based healing. This article will focus on several of these therapies, as well as the existing studies that—at the very least—warrant further investigation.

As a note of caution, almost by definition, alternative medicines remain controversial. For the steadfast empiricist, such treatments are off-limits until sufficient data are available and vetted. For others, the words of Celsus ring true: *Satius est enim aniceps auxilium experiri quam nullum* – 'It is better to try a doubtful remedy than to try none.' In reality, the utility of alternative medicines in the treatment of various conditions depends on several factors. When Western medicines work (and do so safely), there is less drive for alternatives. For example, the belief that diet is the “root” of atopic dermatitis is an idea that some atopic dermatitis (AD) patients cling to very fiercely. A clever study by Dr. Jon Hanifin demonstrated that once the skin of patients with atopic dermatitis was under better control, patients significantly de-emphasized food allergies and diet as possible explanations, compared to when the skin was flaring initially.2

However, when diseases are not curable, when our explanations are unsatisfying, or when our treatments are felt to be unsafe or only “symptomatic,” patients may turn to alternative approaches. Thus, a huge number of patients seek alternative treatments. In one study, 51 percent of patients with eczema reported use of one or more forms of alternative medicine, with homeopathy, health foods, and herbal remedies being the most common.3 A similar questionnaire-based study of 70 patients with AD gave almost identical results, with 50 percent reporting use of one or more forms of alternative medicine for their skin disease.4 Dissatisfaction with treatment and frustration with the chronic nature of the disease were reported as reasons. Thus, whether we recommend these therapies or not, clinicians are wise to learn about them.

Of the many types of alternative medicine, one area that has generated some interest lately in the realm of AD treatment is the category of “natural” agents. Ahead, I will examine some of these remedies and the associated data for each.

**NATURAL REMEDIES FOR ATOPIC DERMATITIS**

**Essential Fatty Acids.** An older hypothesis holds that AD is caused by a deficiency of essential fatty acids (EFA), which has been known to mimic AD. Patients with AD have a possible deficiency of the delta-6 desaturase enzyme, which blocks conversion of linoleic acid to gamma-linolenic acid (GLA).5 Thus, the idea of using EFAs to supplement GLA is suggested.

“In some cases, tantalizing data suggest that the “alternative” designation is merely temporary, and that some of these agents have a future of evidence-based healing.”

Essential fatty acid (EFA) deficiencies can be treated by topical application of sunflower oil, which is rich in EFAs and readily absorbed transcutaneously. Topical application of sunflower oleodistillate has been shown to increase synthesis of ceramides (thus improving barrier function) and to have anti-inflammatory effects—two highly-desirable properties in an AD therapy. Linoleic acid is the major lipid that converts to arachidonic acid, which leads to prostaglandin E2, an inflammatory modulator, possibly via peroxisome proliferative-activated receptor-a (PPAR-a) activation.

As evidence for skin barrier repair, a study of 497 pre-term infants deemed high-risk for sepsis were given thrice-daily application of sunflower seed oil vs. Aquaphor vs. no treatment to see if skin barrier support would prevent systemic infection. Indeed, sunflower seed oil reduced sepsis by 41 percent, with a 26 percent reduction in mortality, significantly better than no treatment and similar to the effect of Aquaphor, but at a fraction of the cost.

Evening Primrose Oil. Another commonly discussed “natural” remedy is evening primrose oil (EPO), which has high levels of gamma-linolenic acid and omega-6 fatty acids. In one study, oral EPO was associated with an improvement by 96 percent in patients with AD, versus only 32 percent in the placebo group. While these results are encouraging, the major issue in this study is that it used very high doses of EPO—up to 6,000mg per day—given as 12 capsules, which may make adherence to such a regimen difficult. In aggregate, studies have been mixed and conflicting, perhaps due to a lack of consistency in methodology and dosage.

Borage Oil. Borage oil is derived from the seeds of *borago officinalis*, rich with omega-6 essential fatty acids and with two to three times more gamma-linolenic acid than EPO. A review of 12 clinical trials of borage oil in AD (11 for treatment, one for prevention) yielded highly variable results. To wit, five of the studies reviewed indicated significant improvements for patients who used borage oil, while five others showed insignificant improvement, and two additional studies mixed results. Also worth noting is that borage oil had no effect in prevention when given to neonates although it was well-tolerated in the short term.

Coconut oil. Coconut oil can decrease *staphylococcus aureus* colonization by 95 percent in patients with AD when applied topically twice daily for four weeks vs. 50 percent decrease in an olive oil control. There is also strong evidence for broad-spectrum antibacterial activity. Taken in the context of current thinking about superantigens from *staphylococcal* colonization in AD, these findings make coconut oil a very interesting natural product for further study.

Probiotics. Treatment with probiotics presents the compelling notion of “re-balancing” bacteria on and in the body. One study demonstrated that giving neonates *Lactobacillus GG* cut the development of AD in half vs. the control group. Another study demonstrated an equally impressive finding: that twice-daily probiotics to children with moderate to severe AD demonstrated significant improvement over placebo. However, additional studies have failed to reproduce benefit or prevention, calling these findings into question. Optimal dosing, timing, strain of probiotic, and patient selection all remain open questions as well.

Vitamin D. In one study examining the benefits of vitamin D, 11 children (mean age of seven years) with AD that worsened in the winter were randomly given 1,000 IU of D$_2$ or placebo daily for one month. Results showed that 80 percent of patients who received the vitamin D saw significant improvement in their AD, as compared to just 17 percent in the placebo group. A corroborating study evaluated 37 children with AD aged eight to 12 months. Serum 25(OH)D levels correlated significantly (and inversely) with disease severity, such that higher vitamin D levels correlated with less severity.

Vitamin B12. Cobalmin, or Vitamin B$_{12}$, is an inhibitor of NO synthase and has been hypothesized to prevent flares in AD patients. In a Phase III RCT of topical B$_{12}$ applied twice daily for eight weeks, patients treated with B$_{12}$ saw significant improvement vs. placebo. Another study in children aged six months to 18 years found significant improvement in as early as two weeks of use. It is puzzling that such an impressive result has not been followed up with further study.

THE JURY IS STILL OUT

The studies reviewed here offer some suggestive evidence that agents such as sunflower seed oil, coconut oil, oral vitamin D supplementation, and topical vitamin B$_{12}$ may be useful adjuncts in treating AD. Evening primrose oil and borage oil may hold some promise in certain subgroups, but these, as well as probiotics, will require more research before being considered potentially viable options. Even in the case of some of the more promising agents, further investigation will be needed to better understand the mechanisms and
"While conventional medicine still holds most of the answers, it may not have them all. Our patients are aware of this and are searching in the ‘alternative’ realm."

Based on highlights from the “What’s Boiling Over in Atopic Dermatitis” symposium at the 2012 Summer Meeting of the American Academy of Dermatology Meeting in Boston, MA.

Peter A. Lio, MD is a Clinical Assistant Professor in the Department of Dermatology & Pediatrics at Northwestern University, Feinberg School of Medicine.