Antibiotic Ointments

We all get minor scrapes and cuts from time to time. And based on long and pervasive advertising, I suspect most of us have an urge to put Neosporin® ointment on them.

Is this a good or bad thing to do?

A while ago, I looked into this.

First, I asked a dermatologist what he thought. He said that there is no good reason to put any antibiotic ointment on a wound, as Vaseline® does just as well.

Wasn’t sure this made sense, so looked it up. I found one study that addressed this specific issue:


The authors’ conclusion: "White petrolatum is a safe, effective wound care ointment for ambulatory surgery. In comparison with bacitracin, white petrolatum possesses an equally low infection rate and minimal risk for induction of allergy."

Hmmm. So what the dermatologist said has some evidence to back it up. But can we generalize this study to traumatic lacerations? Maybe not. So I delved a bit deeper and found a few more relevant articles. This first 2007 review article looked at the evidence up to then:


Their conclusion? "The use of topical triple-antibiotic ointments significantly decreases infection rates in minor contaminated wounds compared with a petrolatum control. Plain petrolatum ointment is equivalent to triple-antibiotic ointments for sterile wounds as a post-procedure wound dressing (strength of recommendation: A, based on randomized controlled trials [RCTs])."

And found another later article that comes to the same conclusion:


From these articles (I also looked at the studies they referenced, but I won’t bore you with them) it looks as though for traumatic wounds, antibiotic ointment reduces wound infection rates by about 13%.

So what’s the best antibiotic to use?

Well, if it’s a wound that is superficially infected, Bactroban (mupirocin) ointment, even in the era before MRSA (methicillin-resistant Staphylococcus aureus), is better than oral Keflex. Bactroban is prescription-only, and is the treatment of choice for bullous impetigo (that kids and wrestlers sometimes get) and for impetiginized wounds (that golden crusting). Impetigo is a symbiotic
combination of staph and strep bacteria, and Bactroban is clearly the best treatment for it, better than oral antibiotics and topical over-the-counter antibiotic ointment. I’ve also started treating lots of local infections, even with a bit of cellulitis, with Bactroban, and have yet to hear about a treatment failure. Good stuff.

But what about for non-infected wounds? Well, if you pay attention to the advertising, Neosporin® or the equivalent generic triple-antibiotic ointment is clearly the ointment of choice.

Hey, do you want to make a dermatologist fluff up his or her tail and hiss? Just mention Neosporin®. Why? Well, triple-antibiotic ointment consists of three antibiotics: bacitracin, polymyxin, and neomycin. Now bacitracin is a really good topical ointment for gram positive bacteria, the ones that cause most wound infections. And if used by itself, people never get allergic to it. Polymyxin is an OK antibiotic, and rarely causes allergy, but neomycin, an aminoglycoside that’s there to cover mostly gram negative bacteria (which rarely cause wound infections), is famous for causing blistering allergic reactions like poison ivy. Boo, hiss.

We already said antibiotic ointment causes an about 13 percent reduction in wound infections, but here’s another 13 percent for you: if you randomly test people, about 13 percent of people are allergic to neomycin. And if people keep using neomycin on their skin on a regular basis, maybe half will turn allergic to it. And I’ve seen some very impressive allergic reactions to Neosporin® ointment, also to Cortisporin® ear drops, which also have neomycin in them.


**Epstein E. Allergy to dermatologic agents. JAMA 1966;198:517-20.**

**Epstein E. Contact dermatitis to neomycin with false negative patch tests: allergy established by intradermal and usage tests. Contact Dermatitis 1980;6:219-20.**

There are a few other antibiotic ointments around, such as Polysporin® (which is bacitracin with polymyxin but no neomycin) but plain old bacitracin ointment is cheap, widely available, safe and effective, which is why that’s what we have in the ED instead of triple-antibiotic ointment that we used to have.

My advice: if you have Neosporin® or generic triple-antibiotic ointment at home, throw it away and get some generic bacitracin ointment instead.

Oh, yes, I forgot to mention. If you’re stranded on a desert island without your bacitracin but you packed some honey, it works pretty well too, at least for minor wound infections. But I don’t think the bacitracin attracts as many ants.

**Jull AB, Cullum N, Dumville JC, Westby MJ, Deshpande S, Walker N. Honey as a topical treatment for wounds. The Cochrane Library 2015.**