

CAN PSORIASIS TREATMENT BE AIDED BY OMEGA-3 FATTY ACIDS?

Brittney Urban

Psoriasis

- Chronic skin disease
 - ▣ Cell life cycle – build up
 - ▣ Can be disabling

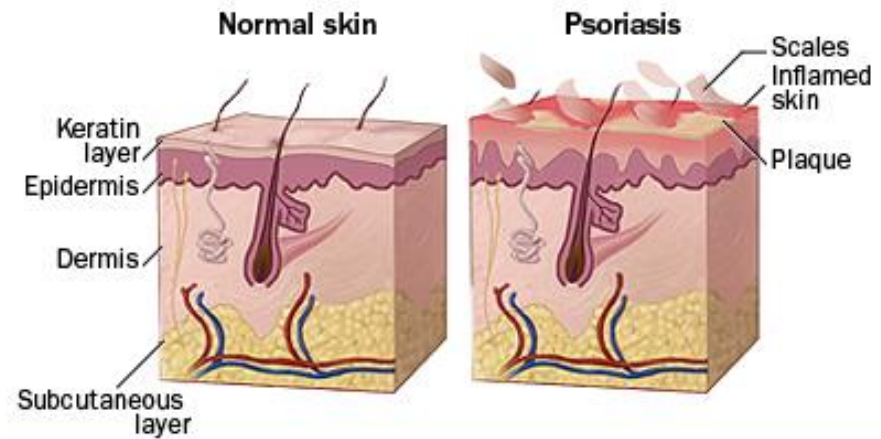
Symptoms:

- Red patches with silvery scales
- Dry, cracked skin that may bleed
- Itching, burning, soreness
- Thickened, pitted or ridged nails



Psoriasis - Causes

- Immune reaction
 - ▣ Overactive T-cells attack skin
 - Blood vessels dilate
 - Increase skin production
 - Unknown why
- Triggers:
 - ▣ Infections
 - ▣ Skin injury
 - ▣ Stress
 - ▣ Cold weather
 - ▣ Smoking
 - ▣ Alcohol
 - ▣ Medications (lithium)



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Psoriasis – Complications

- Thickened skin, infections
 - ▣ Scratching
 - Low self-esteem
 - Stress
 - Anxiety
 - Social isolation
-
- Correlated with metabolic syndrome, inflammatory bowel disease, cardiovascular disease, cancer

Psoriasis – Treatment

Types of Treatment

- **Topical**
 - ▣ Corticosteroids, vitamin D analogues, anthralin, retinoids, salicylic acid, coal tar moisturizers

- **Light Therapy**
 - ▣ Sun, UVB, photochemotherapy, lasers

- **Medication**
 - ▣ Retinoids, Methotrexate, Cyclosporine, Hydroxyurea, Thioguanine

Considerations

- Side effects can be severe with medications
 - ▣ Only short term use

- Disease and treatment effects are unpredictable

- Skin can become resistant to treatments

- Psoriasis has no known cure
 - ▣ Treat symptoms
 - Inflammation, cell growth

Psoriasis – Importance

- Most prevalent autoimmune disease in U.S.
 - ▣ 7.5 million Americans (2.2% of population)
 - ▣ 125 million worldwide
- 60% of patients reported it as a large problem
- 25% considered to have moderate to severe
 - ▣ At least 3% of body covered
- Costs: \$11.25 billion annually
 - ▣ Includes lost work
 - 60% of patients miss 26 days average per year
 - ▣ One year of treatment: \$1,197 to \$27,577 (Science Daily)

Statement of Significance

- Psoriasis is a common skin disorder with uncomfortable symptoms and complications.
- Treatment is expensive – for the individual and for the government.
- Individuals may become resistant to treatment and experience severe symptoms from harsher medications.
- Research into a new and less expensive alternative, or treatment enhancer, is crucial to improving the lives of these individuals.

Omega-3 Fatty Acids

- **Anti-inflammatory properties**
 - ▣ **Management of inflammatory and autoimmune diseases** (Simopoulos, 1991)
 - ▣ **Many fish oil clinical trials reveal benefit in chronic inflammatory diseases** (Burr 1989, Leaf 1988,1990, Simopoulos 1986, 1991, Von Schacky 1988)
- **Patients with autoimmune diseases usually respond to EPA and DHA supplementation by decreasing elevated cytokine levels** (Weber, 1991)

Preliminary Observational Studies

- Psoriasis can be a side-effect of lithium. Article presented two cases of lithium use for bi-polar disorder.
 - 4-6g of omega-3 cleared psoriasis, not depression (Akkerhuis, 2003)
- 13 adults with psoriasis
 - 8 week study
 - Diet low in Omega-6, add fish oil
- Decrease in:
 - scaling ($p < 0.001$)
 - redness ($p < 0.02$)
 - Thickness ($p < 0.004$)
 - 5 moderate, 3 minimal, 5 same (Ziboh, 1986)



Purpose

- Research suggests that psoriasis, essentially an inflammatory disorder, should benefit from an anti-inflammatory diet (Balbás, 2011)
- Purpose of this presentation is to:
 - ▣ Present a study suggesting omega-3 fatty acids can minimize symptoms of psoriasis
 - ▣ Explore the use of omega-3's as a way to treat inflammation and enhance current treatments

Balbás GM, Regaña MS, Millet PU. Clin Cosmet Investig Dermatol. 2011;4:73-7. Epub 2011 Jun 20.

**Study on the use of
omega-3 fatty acids as a
therapeutic supplement in
treatment of psoriasis.**

Design

- Prospective, open, single-center, controlled observational study with 2-month follow-up

- 8 week treatment
 - ▣ Data collected at baseline, 4, and 8 weeks

- Exclusion:
 - ▣ Receiving therapy, pregnant or breastfeeding women, liver disease or neuropathies

- **Group A:** Tacalcitol, 2 capsules Oravex
 - ▣ 280mg EPA, 40mg DHA
- **Group B:** Tacalcitol

Tacalcitol:

D3 analogue ointment. Inhibits proliferation, induces differentiation of keratinocytes. May temper inflammation (Peters, 1997)

Study Population

- 30 patients
 - ▣ 15 in each group
- Moderate or mild plaque psoriasis
- 63.3% men
- 18-70 years old
 - ▣ Mean 58.97 ± 15.1 years
- Mean BMI: 26.85 ± 3.3 kg/m²
- 30.0% healthy BMI
- 53.3% overweight
- 16.7% obese

Results

PASI

Psoriasis area and severity index

NAPSI

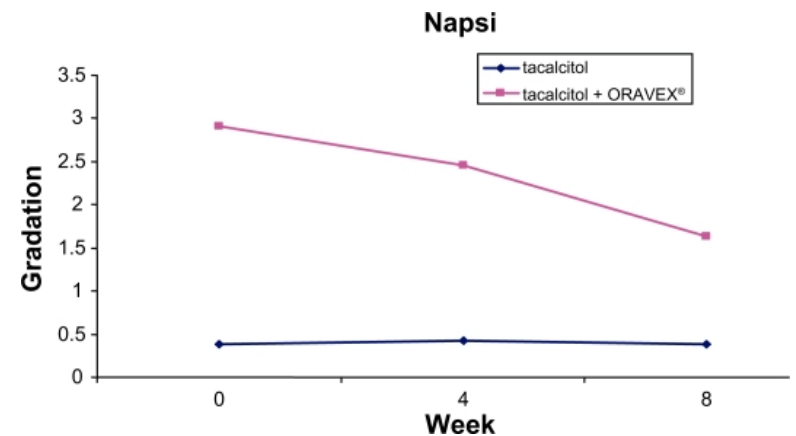
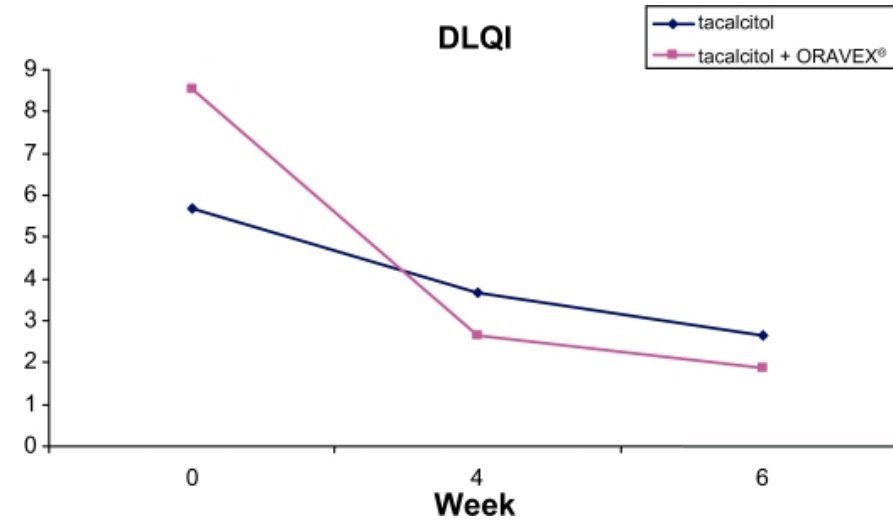
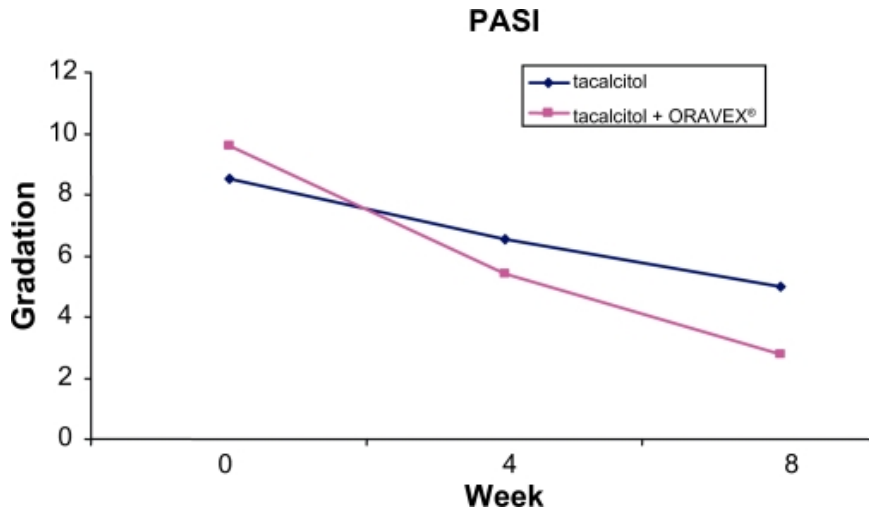
Nail psoriasis severity index

DLQI

Dermatology life quality index

Results of primary endpoints	Baseline visit week 0	Intermediate visit week 4	End visit week 8	Difference baseline–end	Significance baseline–end
PASI					
Tacalcitol	8.53	6.53	5	-3.53	P < 0.0001
Tacalcitol + Oravex	9.6	5.4	2.8	-6.8	
NAPSI					
Tacalcitol	0.38	0.43	0.38	0	P = 0.0480
Tacalcitol + Oravex	2.91	2.45	1.68	-1.23	
DLQI					
Tacalcitol	5.67	3.67	2.64	-3.03	P = 0.0056
Tacalcitol + Oravex	8.53	2.63	1.86	-6.67	

Results



- PASI: -3.5 and -6.8
 - P < 0.0001
- Napsi: 0 and -1.23
 - P < 0.048
- DLQI: -3.03 and -6.67
 - P < 0.0056

Results

Significant improvement observed in secondary endpoints

Results of secondary endpoints	Baseline visit week 0	Intermediate visit week 4	End visit week 8	Difference baseline–end	Significance baseline–end
Scalp lesion					
Tacalcitol	0.6	0.53	0.6	0	P = 0.0038
Tacalcitol + Oravex	0.87	0.8	0.27	-0.6	
Pruritus (itching)					
Tacalcitol	66.7%	40.0%	26.7%	-40%	
Tacalcitol + Oravex	80.0%	6.7%	0%	-80%	P < 0.0001
Lesion of target plaque Erythema (redness)					
Tacalcitol	2.20	1.80	1.47	-0.73	P = 0.0080
Tacalcitol + Oravex	2.93	1.80	1.13	-1.80	
Infiltration					
Tacalcitol	1.53	0.93	0.53	-1.0	P = 0.0011
Tacalcitol + Oravex	2.47	1.13	0.47	-2.0	
Scaling					
Tacalcitol	1.60	0.87	0.20	-1.40	P = 0.0291
Tacalcitol + Oravex	2.27	1.00	0.13	-2.14	

Results

Significant improvement in secondary endpoints with
Ovarex and Tacalcitol treatment



Discussion

- Improvement with omega-3 supplement after 8 weeks
- Despite low numbers, statistical difference between groups indicates improvement when Oravex added to tacalcitol
- According to this study, the addition of oral omega-3's to topical psoriasis treatments will contribute to reducing symptoms

Limitations

- Small study
 - ▣ 30 participants
- Not placebo controlled
- Baseline severities may not have been the same
- Both groups receive some type of treatment
- Ovarex contains additional ingredients
 - ▣ 50 mg of thyme extract, 50 mg of olive leaf extract, 20 mg of green tea extract, 7.5 mg of zinc, 27.5 µg of selenium per capsule

Future Studies

- Larger, placebo-controlled study with and without psoriasis treatment
- Study controlling diet
 - ▣ Omega-3's in food
- Look at long term effects
 - ▣ Do symptoms return?
- Study comparing different doses of omega-3's

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Questions?