Where Are We With Cosmeceuticals?

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Cosmeceuticals: Definition

- Cosmeceutical: “a topical preparation that is sold as a cosmetic but has performance characteristics that suggest pharmaceutical action” - Dr. Kligman (1984; Vitamin A)

Cosmeceuticals: Importance

- Patient Interest & Clinical Benefit -> Drives Importance
- Patients have a desire to achieve skin wellness and youth
Cosmeceuticals and the FDA

- Currently, limited FDA role in oversight
- No “claims” related to prevention or treatment of disease: “improve appearance of”

Hot Topic: Increased FDA Oversight?


Personal Care Products Safety Act

Key Points of potential FDA oversight with PCPSA:
- manufacturing standards consistent with existing national and international standards
- inspect a company’s cosmetic safety records
- recall likely causes of serious adverse health consequences
- encourage cosmetic safety testing that minimizes animal use

Cosmeceutical Clinical Benefits That Motivate Our Patients

- Anti-Aging
- Rhytid Reduction
- Sun Protection
- Scars
- Dark Spots and Skin Lightening
- Post-Procedure to Improve Wound Healing
- Hair and Scalp Care
- Dry Skin and Atopic Derm

Extrinsic Skin Aging

- Manifests as:
  - Increased skin wrinkles (rhytids)
  - Poor Tone (blemishes/lentigines)
  - Poor Texture and elasticity (roughness/elastosis)
- Extrinsic Aging: Classically thought of as UV Radiation Photoaging
- Extrinsic skin aging easier to modulate than intrinsic aging

UVR Skin Damage

- Chronic and Acute UVR: Damage to DNA, Lipids and Proteins and Depletes Skin Anti-Oxidants

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Hot Topic: Pollution Aging

- New evidence is highlighting the importance of Environmental Pollution and other factors (including: cell phone use, computer screens, visible and IR light, microwave use, indoor lamps)

Hot Topic: Ozone-Based Skin Damage

- Typical levels of Tropospheric O₃ recorded in urban environments can range from 0.2 to 1.2 ppm
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  - MRK + 1% L-ascorbic acid (Vit C) + 1% Alpha-tocopherol (Vit E) + 0.5% Ferulic Acid
  - MRK + 1% L-ascorbic acid (Vit C) + 2% Phloretin (apple tree leaf derivative) + 0.5% Ferulic Acid

- O₃-induced an increase in IL-8 gene expression in human keratinocytes while CEF and Phloretin CF (both by SkinCeuticals) pre-treatment prevented IL-8 induction by O₃

Hot Topic: Ozone-Based Skin Damage

- Anti-oxidants PREVENT Ozone-damage to Human Skin Equivalents
Hot Topic: Dermal Augmentation

- New Cosmeceuticals: rejuvenate and augment the dermis
- Alternative to or complementary to lasers and injectables
- Key non-cellular structural components of the dermis: Collagen, Elastin and Glycosaminoglycans (GAGs)
- The GAGs family: hyaluronic acid, dermatan sulfate, chondroitin sulfate, heparan sulfate, and heparin.
- GAGs= 0.2% skin, however, account for most of the volume of the dermis because they retain water in amounts up to 1,000 times their own volume.
- Challenge: Delivery of exogenous GAGs to the dermis (even nano-sized) as most topically applied GAGs only moisturize the epidermis. Alternative is to stimulate HA production.

Topical for Skin Augmentation

- Breakthrough Combination of Purple Rice Extract + HA + Pro-Xylane (SkinCeuticals)
- Stimulates HA synthesis (Xylane), Prevents HA breakdown (Purple Rice), deliver HA to epidermis.

Peri-Ocular Improvement

Peri-Oral Improvement

**THE EYES ARE THE KEY TO THE FACE**: Crow’s Feet and Trough

"THE EYES ARE THE KEY TO THE FACE": Crow’s Feet and Trough

Peri-oral improvement

Exceptional Agers: How and Why?

- look 10+ years younger

Gene Profile of Exceptional Agers

- Certain genes increased in expression in older appearing as compared to younger looking skin.
- However the majority of genes were decreased in expression in older looking skin as compared to younger.
- Average appearing skin had intermediate levels of gene expression.
**Database Screen: Carob Seed Extract**

- **Vehicle Control**
- **Carob Seed Extract**

**Clinical Improvement**

- Olay Regenerist Microsculpting Cream (P&G)

**Peptides:**

- **New + Classic: Pal-KT + Pal-KTTKS**

**Heparan Sulfate**

- Highly Active GAG – water retention
- Exogenous HS = Limited Skin Penetration: High MW (HS is long polysaccharide), Hydrophilic (HS is highly polar)
- Innovation: Short Chain Heparan Sulfate Analog (HAS) (by Dr. Richard Gallo & Sente Labs)

**Heparan Sulfate Analog: Dermal Repair**

- In a clinical trial, improved appearance of brown spots and wrinkles at 4 weeks with continued improvement at 8 weeks
- Measured improvement in hydration and TEWL by week 2, maintained to week 8
- Measured improvement in firmness and elasticity at week 8
HSA Clinical Improvement of Dyschromia and Rhytids

- New Cosmeceutical Blends to enhance barrier repair and minimize hand dermatitis, tid use for 1 week (Hand Repair Cream, Skinfix)
- Steroid-free, Comprehensive ingredient list of natural agents:
  - Oatmeal, allantoin, aloe barbadensis leaf juice, avena sativa kernel oil, beeswax, butyrospermum parkii (shea) butter, calendula officinalis extract, caprylyl/capril glycol, caprylyl/caprate/caprate, chamomilla recutita (matrix) flower extract, citric acid, ethylene glycol, glycerin, glycerol, jojoba oil, helianthus annuus (sunflower) seed oil, oryza sativa (rice) bran extract, petrolatum, phenoxyethanol, poloxamer, propanediol, propylene glycol, water (aqua), xanthan gum.

Winter Clinical 2017 Poster featuring Clinical Trial Results: 100% patients with improvement

Hot Topic: Barrier Repair & Eczema

- Natural Product Oral Supplement for Hair Care (Nutrafol)
- Novel blend of menthol-based hydrocarbons to improve patient compliance and use of selenium-based dandruff shampoo resulting in improved patient dandruff outcomes (Head and Shoulders, P&G)
- UVO anti-oxidant drink
- Polypodium leucotomos (Heliocare, Ferndale)

Summary

- Cosmeceuticals are topical and oral products that provide skin benefits that fill a niche – ease of a cosmetic with functional properties approaching a pharmaceutical
- Limited current regulation, possible FDA increased oversight
- Some products yield incredible clinical benefit for our patients and are easily available and cost effective compared to prescription products

Q&A