VOLUME 14 • NUMBER 1 • SPRING 2020

JDPA

Journal of Dermatology for Physician Assistants

CLINICAL DERMATOLOGY

From The Patient's Perspective 18

Grand Rounds 20

SURGICAL DERMATOLOGY

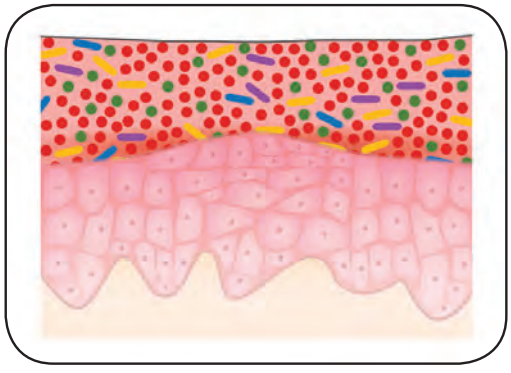
Ibuprofen is a Safe and Effective Alternative to Opioid Analgesics in Dermatologic Surgery 28

PROFESSIONAL DEVELOPMENT

Interview with James A. Van Rhee, MS, PA-C 24

DERMATOLOGY PA NEWS & NOTES

Listening to Patients 32



» **Earn CME credit with this issue**

CME

The Microbiome: The Role of Bacteria in Cutaneous Disease 12

Official Journal of the Society of Dermatology Physician Assistants

Most commercially insured patients pay as little as $20*

An experience worth noticing.

With clinical efficacy and safety profile in a once-daily spray foam, choose the Enstilar® Foam experience for your patients with plaque psoriasis.[1]

In adults, patients achieved "Clear" or "Almost Clear" skin as measured by IGA[1,2†]:

- **53.3% vs 4.8% for vehicle at Week 4 (*P*<0.001)**
- **26.4% vs 1.9% for vehicle at Week 2**

*Valid for up to 12 prescription fills per calendar year. Patients are not eligible if they are enrolled in or eligible for any state or federally funded health care program (eg, Medicare, Medicaid). Additional restrictions and limitations apply; see www.leopharmaconnect.com.

†A randomized clinical trial with 426 patients, ≥18 years of age, that investigated the effectiveness of Enstilar® or the vehicle alone for the treatment of psoriasis vulgaris on the trunk and/or limbs. Efficacy was assessed using a 5-point IGA at Week 4, with treatment success defined as the percentage of patients who achieved at least a 2-step improvement to reach "Clear" or "Almost Clear" disease severity. Patients with "Mild" disease were required to be "Clear" to be considered a treatment success.[1,2]

IGA=Investigator's Global Assessment.

Not an actual patient. Image is a representation of plaque psoriasis. Individual results may vary.

References: 1. Enstilar® [prescribing information]. LEO Pharma Inc. **2.** Leonardi C, Bagel J, Yamauchi P, et al. Efficacy and safety of calcipotriene plus betamethasone dipropionate aerosol foam in patients with psoriasis vulgaris — a randomized phase III study (PSO-FAST). *J Drugs Dermatol*. 2015;14(12):1468-1477.

INDICATION AND USAGE

Enstilar® (calcipotriene and betamethasone dipropionate) Foam is indicated for the topical treatment of plaque psoriasis in patients 12 years and older. Apply Enstilar Foam to affected areas once daily for up to 4 weeks. Discontinue use when control is achieved. Instruct patients not to use more than 60 grams every 4 days.

IMPORTANT SAFETY INFORMATION

For topical use only. Enstilar Foam is not for oral, ophthalmic or intravaginal use and should not be applied on the face, groin or axillae or if skin atrophy is present at the treatment site. Do not use with occlusive dressings. Patients should wash hands after application.

Please see Brief Summary of Prescribing Information on following page.

L E O

Enstilar®
(calcipotriene and betamethasone dipropionate) Foam 0.005%/0.064%

ENSTILAR® (calcipotriene and betamethasone dipropionate) foam, for topical use
Rx Only

BRIEF SUMMARY OF PRESCRIBING INFORMATION.

INDICATIONS AND USAGE

Enstilar® (calcipotriene and betamethasone dipropionate) Foam is indicated for the topical treatment of plaque psoriasis in patients 12 years and older.

DOSAGE AND ADMINISTRATION

Instruct patients to shake can prior to using Enstilar Foam and to wash their hands after applying the product. Apply Enstilar Foam to affected areas once daily for up to 4 weeks. Rub in Enstilar Foam gently. Discontinue Enstilar Foam when control is achieved.

Patients should not use more than 60 grams every 4 days.

Enstilar Foam should **not** be:

- Used with occlusive dressings unless directed by a healthcare provider.
- Used on the face, groin, or axillae, or if skin atrophy is present at the treatment site.

Enstilar Foam is not for oral, ophthalmic, or intravaginal use.

DOSAGE FORMS AND STRENGTHS

Enstilar Foam: 0.005%/0.064% - each gram contains 50 mcg calcipotriene and 0.643 mg of betamethasone dipropionate in a white to off-white opalescent liquid in a pressurized aluminum spray can with a continuous valve and actuator. At administration the product is a white to off-white foam after evaporation of the propellants.

CONTRAINDICATIONS

None.

WARNINGS AND PRECAUTIONS

Flammability

The propellants in Enstilar Foam are flammable. Instruct the patient to avoid fire, flame, and smoking during and immediately following application.

Hypercalcemia and Hypercalciuria

Hypercalcemia and hypercalciuria have been observed with use of Enstilar Foam. If hypercalcemia or hypercalciuria develop, discontinue treatment until parameters of calcium metabolism have normalized. The incidence of hypercalcemia and hypercalciuria following Enstilar Foam treatment of more than 4 weeks has not been evaluated.

Effects on Endocrine System

Hypothalamic-Pituitary-Adrenal Axis Suppression

Systemic absorption of topical corticosteroids can cause reversible hypothalamic-pituitary-adrenal (HPA) axis suppression with the potential for clinical glucocorticosteroid insufficiency. This may occur during treatment or upon withdrawal of treatment. Factors that predispose a patient to HPA axis suppression include the use of high-potency steroids, large treatment surface areas, prolonged use, use of occlusive dressings, altered skin barrier, liver failure, and young age.

Evaluation for HPA axis suppression may be done by using the adrenocorticotropic hormone (ACTH) stimulation test. If HPA axis suppression is documented, gradually withdraw Enstilar Foam, reduce the frequency of application, or substitute with a less potent corticosteroid.

The following trials evaluated the effects of Enstilar Foam on HPA axis suppression:

- In a trial evaluating the effects of Enstilar Foam on the HPA axis, 35 adult subjects applied Enstilar Foam on the body and scalp. Adrenal suppression was not observed in any subjects after 4 weeks of treatment. In another trial, 33 pediatric subjects age 12 to 17 years applied Enstilar Foam on the body and scalp. Adrenal suppression occurred in 3 (9%) of the subjects.

Cushing's Syndrome and Hyperglycemia

Systemic effects of topical corticosteroids may also include Cushing's syndrome, hyperglycemia, and glucosuria.

Additional Considerations for Endocrine Adverse Reactions

Pediatric patients may be more susceptible to systemic toxicity due to their larger skin surface to body mass ratios.

Use of more than one corticosteroid-containing product at the same time may increase the total systemic corticosteroid exposure.

Allergic Contact Dermatitis

Allergic contact dermatitis has been observed with topical calcipotriene and topical corticosteroids. Allergic contact dermatitis to a topical corticosteroid is usually diagnosed by observing a failure to heal rather than a clinical exacerbation. Corroborate such an observation with appropriate diagnostic patch testing.

Ophthalmic Adverse Reactions

Use of topical corticosteroids, including Enstilar® Foam, may increase the risk of posterior subcapsular cataracts and glaucoma. Cataracts and glaucoma have been reported with the postmarketing use of topical corticosteroid products. Avoid contact with Enstilar Foam with eyes. Enstilar Foam may cause eye irritation. Advise patients to report any visual symptoms and consider referral to an ophthalmologist for evaluation.

ADVERSE REACTIONS

Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

Clinical Trials Conducted in Subjects 18 years and older with Psoriasis

The rates of adverse reactions described below were from three randomized, multicenter, vehicle and/or active-controlled clinical trials in adult subjects with plaque psoriasis. Subjects applied study product once daily for 4 weeks, and the median weekly dose of Enstilar Foam was 25 grams. Adverse reactions reported in <1% of adult subjects treated with Enstilar Foam included: application site irritation, application site pruritus, folliculitis, skin hypopigmentation, hypercalcemia, urticaria, and exacerbation of psoriasis.

Clinical Trials Conducted in Subjects 12 to 17 years with Psoriasis

In one uncontrolled clinical trial, 106 subjects aged 12 to 17 years with plaque psoriasis of the scalp and body applied Enstilar Foam once daily for up to 4 weeks. The median weekly dose was 40 grams. Adverse reactions reported in <1% of pediatric subjects treated were acne, erythema, application site pain, and skin reactions.

Postmarketing Experience

Because adverse reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Postmarketing reports for local adverse reactions to topical corticosteroids included atrophy, striae, telangiectasia, dryness, perioral dermatitis, secondary infection, and miliaria.

Ophthalmic adverse reactions of cataracts, glaucoma, increased intraocular pressure, and central serous chorioretinopathy have been reported with the use of topical corticosteroids, including topical betamethasone products.

USE IN SPECIFIC POPULATIONS

Pregnancy

Risk Summary

Available data with Enstilar Foam are not sufficient to evaluate a drug-associated risk for major birth defects, miscarriages, or adverse maternal or fetal outcomes. Although there are no available data on use of the calcipotriene component in pregnant women, systemic exposure to calcipotriene after topical administration of Enstilar Foam is likely to be low.

Observational studies suggest an increased risk of having low birth weight infants with the maternal use of potent or super potent topical corticosteroids. Advise pregnant women that Enstilar Foam may increase the potential risk of having a low birth weight infant and to use Enstilar Foam on the smallest area of skin and for the shortest duration possible.

In animal reproduction studies, oral administration of calcipotriene to pregnant rats during the period of organogenesis resulted in an increased incidence of minor skeletal abnormalities, including enlarged fontanelles and extra ribs. Oral administration of calcipotriene to pregnant rabbits during the period of organogenesis had no apparent effects on embryo-fetal development. Subcutaneous administration of betamethasone dipropionate to pregnant rats and rabbits during the period of organogenesis resulted in fetal toxicity, including fetal deaths, reduced fetal weight, and fetal malformations (cleft palate and crooked or short tail). The available data do not allow the calculation of relevant comparisons between the systemic exposures of calcipotriene and betamethasone dipropionate observed in animal studies to the systemic exposures that would be expected in humans after topical use of Enstilar® Foam.

The estimated background risk of major birth defects and miscarriage of the indicated population is unknown. All pregnancies have a background risk of birth defect, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively.

Data

Human Data

Available observational studies in pregnant women did not identify a drug-associated risk of major birth defects, preterm delivery, or fetal mortality with the use of topical corticosteroids of any potency. However, when the dispensed amount of potent or super potent topical corticosteroids exceeded 300 grams during the entire pregnancy, maternal use was associated with an increased risk of low birth weight in infants.

Animal Data

Embryo-fetal development studies with calcipotriene were performed by the oral route in rats and rabbits. Pregnant rats received dosages of 0, 6, 18, or 54 mcg/kg/day (0, 36, 108, and 324 mcg/m^2/day, respectively) on days 6-15 of gestation (the period of organogenesis). There were no apparent effects on maternal survival, behavior, or body weight gain, no effects on litter parameters, and no effects on the incidence of major malformations in fetuses. Fetuses from dams dosed at 54 mcg/kg/day exhibited a significantly increased incidence of minor skeletal abnormalities, including enlarged fontanelles and extra ribs.

Pregnant rabbits were dosed daily with calcipotriene at exposures of 0, 4, 12, or 36 mcg/kg/day (0, 48, 144, and 432 mcg/m^2/day, respectively) on days 6-18 of gestation (the period of organogenesis). Mean maternal body weight gain was reduced in animals dosed at 12 or 36 mcg/kg/day. The incidence of fetal deaths was increased in the group dosed at 36 mcg/kg/day; reduced fetal weight was also observed in this group. The incidence of major malformations among fetuses was not affected. An increase in the incidence of minor skeletal abnormalities, including incomplete ossification of sternebrae, pubic bones, and forelimb phalanges, was observed in the group dosed at 36 mcg/kg/day.

Embryo-fetal development studies with betamethasone dipropionate were performed via subcutaneous injection in mice and rabbits. Pregnant mice were administered doses of 0, 156, 625, or 2500 mcg/kg/day (0, 468, 1875, and 7500 mcg/m^2/day, respectively) on days 7 through 13 of gestation (the period of organogenesis). Betamethasone dipropionate induced fetal toxicity, including fetal deaths, reduced fetal weight, malformations (increased incidence of the cleft palate and crooked or short tail), and minor skeletal abnormalities (delayed ossification of vertebra and sternebrae). Fetal toxicity was observed at the lowest exposure that was evaluated (156 mcg/kg/day).

Pregnant rabbits were injected subcutaneously at dosages of 0, 0.625, 2.5, and 10 mcg/kg/day (0, 7.5, 30, and 120 mcg/m^2/day, respectively) on days 6 through 18 of gestation (the period of organogenesis). Betamethasone dipropionate induced fetal toxicity, including fetal deaths, reduced fetal weight, external malformations (including malformed ears, cleft palate, umbilical hernia, kinked tail, club foot, and club hand), and skeletal malformations (including absence of phalanges of the first digit and cranial dysplasia) at dosages of 2.5 mcg/kg/day and above.

Calcipotriene was evaluated for effects on peri- and post-natal development when orally administered to pregnant rats at dosages of 0, 6, 18 or 54 mcg/kg/day (0, 36, 108, and 324 mcg/m^2/day, respectively) from gestation day 15 through day 20 postpartum. No remarkable effects were observed on any parameter, including survival, behavior, body weight, litter parameters, or the ability to nurse or rear pups.

Betamethasone dipropionate was evaluated for effects on peri- and post-natal development when orally administered to pregnant rats at dosages of 0, 100, 300, and 1000 mcg/kg/day (0, 600, 1800, and 6000 mcg/m^2/day, respectively) from gestation day 6 through day 20 postpartum. Mean maternal body weight was significantly reduced on gestation day 20 in animals dosed at 300 and 1000 mcg/kg/day. The mean duration of gestation was slightly, but statistically significantly, increased at 100, 300, and 1000 mcg/kg/day. The mean percentage of pups that survived to day 4 was reduced in relation to dosage. On lactation day 5, the percentage of pups with a reflex to right themselves when placed on their back was significantly reduced at 1000 mcg/kg/day. No effects on the ability of pups to learn were observed, and the ability of the offspring of treated rats to reproduce was not affected.

Lactation

Risk Summary

There is no information regarding the presence of topically administered calcipotriene and betamethasone dipropionate in human milk, the effects on the breastfed infant, or the effects on milk production. Concentrations of calcipotriene in plasma are low after topical administration, and therefore, concentrations in human milk are likely to be low. It is not known whether topical administration of large amounts of betamethasone dipropionate could result in sufficient systemic absorption to produce detectable quantities in human milk. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for Enstilar® Foam and any potential adverse effects on the breastfed child from Enstilar Foam or from the underlying maternal condition.

Clinical Considerations

To minimize potential exposure to the breastfed infant via breast milk, use Enstilar Foam on the smallest area of skin and for the shortest duration possible while breastfeeding. Advise breastfeeding women not to apply Enstilar Foam directly to the nipple and areola to avoid direct infant exposure.

Pediatric Use

The safety and effectiveness of Enstilar Foam for the treatment of mild to severe plaque psoriasis have been established in pediatric patients age 12 to 17 years. The use of Enstilar Foam for this indication is supported by evidence from adequate and well-controlled trials in adults and from one uncontrolled trial in 106 adolescents age 12 to 17 years with psoriasis of the body and scalp. Calcium metabolism was evaluated in all pediatric subjects and no cases of hypercalcemia or clinically relevant changes in urinary calcium were reported. Hypothalamic pituitary adrenal (HPA) axis suppression was evaluated in a subset of 33 pediatric subjects with moderate plaque psoriasis of the body and scalp (mean body surface area involvement of 16% and mean scalp area involvement of 56%). After 4 weeks of once daily treatment with a mean weekly dose of 47 grams, HPA axis suppression was observed in 3 of 33 subjects (9%).

Because of a higher ratio of skin surface area to body mass, children under the age of 12 years are at particular risk of systemic adverse effects when they are treated with topical corticosteroids. Pediatric patients are, therefore, also at greater risk of HPA axis suppression and adrenal insufficiency with the use of topical corticosteroids including Enstilar Foam.

Cushing's syndrome, linear growth retardation, delayed weight gain, and intracranial hypertension have been reported in pediatric patients treated with topical corticosteroids.

Local adverse reactions including striae have been reported with use of topical corticosteroids in pediatric patients.

The safety and effectiveness of Enstilar Foam in pediatric patients less than 12 years of age have not been established.

Geriatric Use

Of the total number of subjects in the controlled clinical studies of Enstilar Foam, 97 subjects were 65 years and over, and 21 were 75 and over.

No overall differences in safety or effectiveness of Enstilar Foam were observed between these subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

NONCLINICAL TOXICOLOGY

Carcinogenesis, Mutagenesis, Impairment of Fertility

When calcipotriene was applied topically to mice for up to 24 months at dosages of 3, 10, and 30 mcg/kg/day (9, 30, and 90 mcg/m^2/day, respectively), no significant changes in tumor incidence were observed when compared to control.

A 104-week oral carcinogenicity study was conducted with calcipotriene in male and female rats at doses of 1, 5, and 15 mcg/kg/day (6, 30, and 90 mcg/m^2/day, respectively). Beginning week 71, the dosage for high-dose animals of both genders was reduced to 10 mcg/kg/day (60 mcg/m^2/day). A treatment-related increase in benign C-cell adenomas was observed in the thyroid of females that received 15 mcg/kg/day. A treatment-related increase in benign pheochromocytomas was observed in the adrenal glands of males that received 15 mcg/kg/day. No other statistically significant differences in tumor incidence were observed when compared to control. The relevance of these findings to patients is unknown.

When betamethasone dipropionate was applied topically to CD-1 mice for up to 24 months at dosages approximating 1.3, 4.2, and 8.5 mcg/kg/day in females, and 1.3, 4.2, and 12.9 mcg/kg/day in males (up to 26 mcg/m^2/day and 39 mcg/m^2/day, in females and males, respectively), no significant changes in tumor incidence were observed when compared to control.

When betamethasone dipropionate was administered via oral gavage to male and female Sprague Dawley rats for up to 24 months at dosages of 20, 60, and 200 mcg/kg/day (120, 360, and 1200 mcg/m^2/day, respectively), no significant changes in tumor incidence were observed when compared to control.

Calcipotriene did not elicit any genotoxic effects in the Ames mutagenicity assay, the mouse lymphoma TK locus assay, the human lymphocyte chromosome aberration test, or the mouse micronucleus test. Betamethasone dipropionate did not elicit any genotoxic effects in the Ames mutagenicity assay, the mouse lymphoma TK locus assay, or in the rat micronucleus test.

Studies in rats with oral doses of up to 54 mcg/kg/day (324 mcg/m^2/day) of calcipotriene indicated no impairment of fertility or general reproductive performance. Studies in male rats at oral doses of up to 200 mcg/kg/day (1200 mcg/m^2/day), and in female rats at oral doses of up to 1000 mcg/kg/day (6000 mcg/m^2/day), of betamethasone dipropionate indicated no impairment of fertility.

PATIENT COUNSELING INFORMATION

Flammability

Instruct patients that Enstilar Foam is flammable; avoid heat, flame, or smoking when applying this medication.

Administration Instructions

- Shake before use and spray the foam by holding the can in any orientation except horizontally.
- Do not use more than 60 grams every 4 days.
- Discontinue therapy when control is achieved unless directed otherwise by the healthcare provider.
- Avoid use of Enstilar Foam on the face, underarms, groin or eyes. If this medicine gets on face or in mouth or eyes, wash area right away.
- Do not occlude the treatment area with a bandage or other covering unless directed by the healthcare provider. Instruct the patients not to use other products containing calcipotriene or a corticosteroid with Enstilar Foam without first talking to the healthcare provider.
- Wash hands after application.

Local Reactions and Skin Atrophy

Advise patients that local reactions and skin atrophy are more likely to occur with occlusive use, prolonged use or use of higher potency corticosteroids.

Hypercalcemia and Hypercalciuria

Advise patients that hypercalcemia and hypercalciuria have been observed with the use of Enstilar Foam.

HPA Axis Suppression, Cushing's Syndrome, and Hyperglycemia

Advise patients that Enstilar Foam can cause HPA axis suppression, Cushing's syndrome, and/or hyperglycemia.

Ophthalmic Adverse Reactions

Advise patients to avoid contact of Enstilar Foam with eyes and to report any visual symptoms.

Pregnancy and Lactation

- Advise pregnant women that Enstilar® Foam may increase the potential risk of having a low birth weight infant and to use Enstilar Foam on the smallest area of skin and for the shortest duration possible.
- Advise breastfeeding women not to apply Enstilar Foam directly to the nipple and areola to avoid direct infant exposure.

Manufactured by: LEO Laboratories Ltd., 285 Cashel Road, Dublin 12, Ireland

or

Colep Laupheim GmbH & Co. KG, Fockestraße 12, 88471 Laupheim, Germany (DE)

Distributed by: LEO Pharma Inc., Madison, NJ 07940, USA

EDITORIAL & JOURNAL STAFF

JDPA
Journal of Dermatology for Physician Assistants

The official journal of the Society of Dermatology Physician Assistants

CALL FOR CONTRIBUTORS!
We are currently renewing the journal's Departments and Editorial Advisory Board. **See page 9** for more details and application instructions.

EDITORIAL MISSION: The *Journal of Dermatology for Physician Assistants (JDPA)* is the official clinical journal of the Society of Dermatology Physician Assistants. The mission of the *JDPA* is to improve dermatological patient care by publishing the most innovative, timely, practice-proven educational information available for the physician assistant profession.

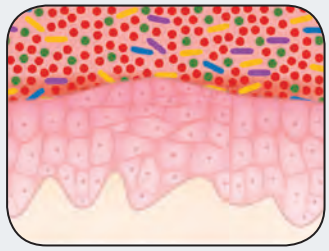
PUBLISHED CONTENT IN THE *JDPA*: Statements and opinions expressed in the articles and communications here in are those of the authors and not necessarily those of the Society of Dermatology Physician Assistants (SDPA). The SDPA disclaims any responsibility or liability for such material, including but not limited to any losses or other damages incurred by readers in reliance on such content. The SDPA does not verify any claims or other information appearing in any of the advertisements contained in the publication and cannot take responsibility for any losses or other damages incurred by readers in reliance or thereon. The SDPA does not guarantee, warrant, or endorse any product or service advertised in this publication, nor does it guarantee any claim made by the manufacturer of such product or service.

GOING GREEN: Since its inception, the *JDPA* has utilized eco-friendly printing practices. The *JDPA* is printed on paper obtained from sustainable forests that meet strict environmental standards. Soy-based inks that have a low environmental impact are used during printing of the journal and the journal is printed using 100% renewable energy. SDPA members may join us in our efforts and opt to receive the *JDPA* in digital format.

JDPA/Journal of Dermatology for Physician Assistants (ISSN 1938-9574) is published quarterly (4 issues per volume, one volume per year) by the Society of Dermatology Physician Assistants (SDPA), 300 N. Washington Street, Suite 407, Alexandria, VA 22314. Volume 14, Number 1, Spring 2020. One-year subscription rates: $40 in the United States and Possessions. Single copies (prepaid only): $10 in the United States (Include $6.50 per order plus $2 per additional copy for US postage and handling). Periodicals postage rate paid at New York, NY 10001 and additional mailing offices.

POSTMASTER: Send address changes to Society of Dermatology Physician Assistants, Inc., 300 N. Washington Street, Suite 407, Alexandria, VA 22314
844-DERM-PAS; e-mail: jdpa@dermpa.org, www.dermpa.org

TABLE OF **CONTENTS**



12

The Microbiome: The Role of Bacteria in Cutaneous Disease

By John V. Notabartolo, DMSc, PA-C, DFAAPA

» CME

8 EDITORIAL MESSAGE

- Derm PAs in Unique Position to Share Knowledge, Lend Skills, and Adapt to Changes in Healthcare Together

Mark Hyde, PhD, PA-C

10 SDPA COMMUNICATIONS: FROM THE PRESIDENT'S DESK

- **Healthcare Providers Leading Pandemic Response:** Fight against COVID-19 Requires Global Unity, Teamwork, and Flexibility

Gina Mangin, MPAS, PA-C

12 CLINICAL DERMATOLOGY

- CME Article: The Microbiome: The Role of Bacteria in Cutaneous Disease

John V. Notabartolo, DMSc, PA-C, DFAAPA

18 FROM THE PATIENT'S PERSPECTIVE

- **Discovering Destiny:** Researcher with Ichthyosis Dedicates Career to Investigating Disorder

Janan Mohamad

20 *JDPA* GRAND ROUNDS

- Practical Tips for Turning Clinical Encounters into Case Reports

Cynthia Faires Griffith, MPAS, PA-C

24 PROFESSIONAL DEVELOPMENT

- Navigating Shifts in PA Education during the COVID-19 Pandemic: A Best Practice Model from Yale University

An interview with James A. Van Rhee, MS, PA-C

- Notes from Your Office Manager

Managing Negative Online Reviews

28 SURGICAL DERMATOLOGY

- Ibuprofen is a Safe and Effective Alternative to Opioid Analgesics in Dermatologic Surgery

Brittny Call Ahrendes, DMSc, MMS, PA-C

Also in this issue:

30 CERTIFICATION REVIEW

James A. Van Rhee, MS, PA-C

32 LISTENING TO PATIENTS

Alan Rockoff, MD

34 DERMATOLOGY MARKET WATCH

38 FOCUS ON MENTAL HEALTH DURING THE CORONAVIRUS (COVID-19) PANDEMIC: Applying Learnings from the Past Outbreaks

SDPA thanks our Industry Partners for their continued support!

THANK YOU

3Gen, Inc.
AbbVie, Inc.
Almirall
Amgen / Celgene
Biofrontera, Inc.
Bio Oil / KAO USA
Clarion Brands
Cynova Laboratories
Encore Dermatology
EPI Health, Inc.
Ferndale Healthcare, Inc.
Foamix Pharmaceuticals Ltd
Galderma
Heine USA LTD
Hidrex USA, LLC
ISDIN
Janssen
Leo Pharma
Mayne Pharma
Novartis
Ortho Dermatologics
Person and Covey Inc.
Pfizer, Inc.
PharmaDerm/Sandoz
PruGen
Sanofi Regeneron
SmartPractice Dermatology
Sun Pharmaceutical Industries, Inc.
UCB
Verrica Pharmaceuticals

Society of Dermatology
Physician Assistants (SDPA)
300 N Washington Street, Suite 407
Alexandria VA 22314
dermpa.org

Derm PAs in Unique Position to Share Knowledge, Lend Skills, and Adapt to Changes in Healthcare Together

As a long-time contributor of the Journal of *Dermatology for Physician Assistants (JDPA)*, I am excited to step into the role of editor-in-chief and embrace this new opportunity to serve the Derm PA readership. I have the highest respect for the individuals who dedicated their time and talents during *JDPA's* early days, namely Founding Editor and Editor-in-Chief Emeritus Travis Hayden, MPAS, PA-C, who started the journal, and I intend to build upon its legacy.

One main goal I would like to work toward during my term is submitting the *JPDA* for indexing consideration (and hopefully acceptance) in a reputable database like PubMed, which is maintained by the United States National Library of Medicine at the National Institute of Health. I believe indexing is an important goal that, if achieved, will increase the impact of *JDPA's* high-quality clinical content.

Much of my career has been spent researching and writing on the topic of dermatologic conditions, mainly skin cancer, treating patients, and exploring the training and utilization of Derm PAs in Mohs Micrographic Surgery (MMS). I have connected with many Derm PAs through the years and have always been impressed with their vast knowledge and skills. I feel that every Derm PA has a unique opportunity and responsibility to share their knowledge and abilities through publication and participation. It is my hope that we can continue the excellent tradition of the *JDPA* being the platform for covering the latest research and topics not only related to the Derm PA community, but also developments in other disciplines affecting healthcare as a whole.

As I write this, the face of healthcare is rapidly changing. With healthcare systems around the world scrambling in response to the 2019 novel coronavirus (COVID-19) pandemic, the drastic need for all of us to adapt and lend our skills has never been more evident. Derm PAs can play a central role in this new reality. We have a unique skill set and are a niche profession that places us in a good position to bridge the gaps between specialty and primary care. For instance, in addition to my clinical role in a skin cancer clinic, my academic background includes a doctorate in Public Health. I hope to use this training to both encourage knowledge sharing and add insight from a population-based perspective.

The *JDPA* can serve as a repository of knowledge that can help us better manage our patients and hone our skill sets, thus achieving our goal of providing the best possible care.

Developing avenues for PAs across disciplines and with all levels of writing skills to contribute to the journal will enrichen our community and increase the impact of the *JDPA* on the dermatology profession. I welcome your suggestions (e-mail jdpa@dermpa.org) and formally invite you to submit a manuscript, case report, letter to the editor, or other contribution for publication consideration. See our Information for Authors for more details and instructions.

Our combined knowledge and voice will prove to be the most powerful resource in the future of our profession. I look forward to this journey.

Respectfully,

Mark Hyde, PhD, PA-C
JDPA Editor in Chief
jdpa@dermpa.org

ANNOUNCEMENTS...

Call for Contributors!

INTERESTED IN GETTING MORE INVOLVED IN THE PEER-REVIEW PROCESS?

JDPA is currently seeking applications for Department Editors and Editorial Advisors! Review responsibilities below and apply today!

Send your application to jdpa@dermpa.org

DEPARTMENT EDITORS

Department Editors possess a high degree of expertise in their specialty and are appointed to ensure the journal is providing its readers with accurate coverage of their specialty. Department Editors may be called upon to solicit content on suitable topics for their respective departments, recommend reviewers, and complete formal peer-review on any submissions that fit under their department.

Primary Responsibilities.....

- ✓ Provide insight for department, suggesting specialty topics and potential authors.
- ✓ Peer-review all article submissions that fit within their department/area of expertise.
- ✓ Guide the Editor-in-Chief and Managing Editor in categorizing accepted content pieces into the journal's dedicated departments and/or article types.
- ✓ Act as an ambassador for the journal, continuously seeking new ways to enhance communication about the Derm PA profession to the readership and larger medical community.
- ✓ Generate ideas to further improve the volume and quality of submissions.
- ✓ Commission content and field submission enquiries as appropriate
- ✓ Write one special correspondence, "Message from the Department Editor," explaining the current state of the specialty, to be published in the journal.

Term Length.....2 Years

How to Apply: Send 1) a brief vision statement detailing how you hope to contribute in the desired position, 2) your areas of expertise ordered by preference; and 3) your current curriculum vitae

EDITORIAL ADVISORS

Relied upon to be JDPA's content referees, Editorial Advisors, also called "peer reviewers," play a key role in contributing to the quality, the value, and even the reputation of science published in the journal. Editorial Advisors are invited to join the Editorial Advisory Board by the Senior Editors and, upon acceptance, commit in advance to provide peer reviews for submissions that fall within their designated area of expertise.

Primary Responsibilities.....

- ✓ Peer review article submissions that fit within their area of expertise as assigned by the Managing Editor
- ✓ Assist the Senior Editors in decision making over issues such as plagiarism claims and incongruous reviews to reach final decisions.
- ✓ Act as an ambassador for the journal, continuously seeking new ways to enhance communication about the Derm PA profession to the readership and larger medical community.
- ✓ Generate ideas to further improve the volume and quality of submissions.
- ✓ Commission content and field submission enquiries as appropriate
- ✓ Identify topics for special issues and supplements, which they may guest edit.
- ✓ Submit one article for publication consideration during their term.

Term Length.....2 Years

How to Apply: Send 1) a brief vision statement detailing how you hope to contribute in the desired position, 2) your areas of expertise ordered by preference; and 3) your current curriculum vitae

Note: Department Editor and Editorial Advisor positions are volunteer; individuals will not be compensated monetarily.

CALENDAR OF EVENTS

2020

ALERT: Due to the coronavirus (COVID-19) pandemic, many medical organizations have made the difficult decision to cancel or postpone planned live events. Please refer to meeting host websites for more information.

APRIL
AAPA Annual Meeting--CANCELLED
April 16-20, 2020
Nashville, TN

MAY
SDPA Annual Summer Dermatology Conference--CANCELLED
May 13 - 17, 2020
Denver, CO

JULY
SCALE 2020
July 22-25, 2020
Nashville, TN

AUGUST
AAD Innovation Academy 2020
August 13-16, 2020
Seattle, Washington

SEPTEMBER
Skin of Color Update 2020
September 12-13, 2020
New York, NY

OCTOBER
SDPA Annual Fall Dermatology Conference
October 29 – November 1, 2020
Miami, Florida

Empower. Educate. Advance.
The Future of Dermatology

FROM THE PRESIDENT'S DESK:

Healthcare Providers Leading Pandemic Response: Fight against COVID-19 Requires Global Unity, Teamwork, and Flexibility

I must admit, this is not the first version of my message to you. Ten days ago, which now seems like a lifetime, my writing had an enthusiastic, cheery tone that was reflective of life before the 2019 novel coronavirus (COVID-19) pandemic gripped the world. Just 10 days ago, life was "normal"—kids were in school, businesses and health facilities were open, and everyone could travel without a debilitating fear of contracting illness, save for maybe picking up the common cold.

I had just returned from the American Academy of Physician Assistants (AAPA) Leadership and Advocacy Summit (LAS) in Washington, DC, my third such trip and my first on Capitol Hill as the President of the Society of Dermatology Physician Assistants (SDPA). I wrote then that one of the greatest honors of being a leader of an association is the opportunity to represent my profession and colleagues at important events such as the AAPA's LAS. I encouraged everyone to participate and work toward moving our profession forward.

While I still believe representing my profession and colleagues is an honor and essential part of progress, I acknowledge that, in light of the COVID-19 pandemic, we are now being forced into rethinking the ways in which we "participate" and interact with each other. This virus has changed everything literally overnight and changes are occurring every minute of every hour it seems.

Participation in Events. Just 10 days ago I wrote, "This event [AAPA's LAS] draws more than 200 of our PA colleagues from all 50 states and across all medical specialties. Some in attendance are considered leaders in their specialty, but many who participate are students, administrators, association members, and individuals involved in education." Re-reading this section now, one can't help but only look at the numbers, consider all those people from different geographical regions, and think of the opportunity for COVID-19 "community spread," a term with which we are now all familiar. Just 10 days ago, there seemed to be no problem with gathering, in fact, collaboration was celebrated. The more the merrier!

Just 10 days ago, our schedules were full. Last week, we all watched in disbelief as COVID-19 disrupted order, causing the cancellation of nearly 50 major medical conferences and bringing sporting events, concerts, and festivals to a grinding halt.

Participation in Healthcare. As I write this, my office in Orlando, Florida, is now closed for routine visits and we are only seeing emergency cases. I am now preparing to train for telemedicine—something which staff balked at only two weeks earlier. Another sign of the times, virtual communication has quickly become synonymous with the Centers for Disease Control and Prevention (CDC) recommendation for all of us to practice "social distancing." As building and thus in-person interaction is shutting down all around us, we're seeing the rapid move to online, patient care included. The Centers for Medicare & Medicaid Services (CMS) just broadened access to Medicare telehealth services, issuing an 1135 waiver which will allow Medicare to pay for certain costs furnished via telehealth across the country.

As I reflect on this current situation, I wonder, "What does this mean and what messages can we extract from such a devastating time?" I always try to look at the positive side of things and determine how we can learn and grow from change and diversity. The following three "messages" are what I propose:

1. UNITY. First, I have learned that the reality is we are a GLOBAL nation, and we truly are all connected no matter our nationality. The COVID-19 virus does not discriminate and is affecting all humankind. What happens in other countries truly does matter and can affect each and every one of us and our loved ones.

2. TEAMWORK. Second, working together will help every individual. Teamwork involves all nations sharing their medical experience and resources. This includes communication on studies, vaccine development, and treatment successes. It is vital that the CDC, World Health Organization (WHO), and governments communicate with each other. We have continued to see the teamwork displayed among our fellow healthcare providers and staff. Physicians, nurses, nurse practitioners, and physician assistants all working tirelessly to care for the ill.

3. FLEXIBILITY. Third, we need to be flexible with every aspect of our lives. This includes family and work life. We will likely not be seeing patients in the office and will need to transfer to "seeing" them via telemedicine appointments. We also need to be flexible in changing old ways, for instance refilling a medication for a patient despite an in-office visit. We will need to move online with our continuing education, seeking out more virtual offerings to take the place of the large, in-person conferences that we are used to.

Socially, we will need to distance ourselves from elderly or grandparents in order to protect their health. We will need to not engage in large gatherings, visit restaurants, visit the movies, or other social events. Despite social distancing, we can spend more time with our families at home. We can play board games, play card games like Crazy Eights, take walks around the neighborhood, or spend a day watching classics such as Star Wars, Lord of the Rings, or, my kid's favorite, Myth Busters on the Discovery Channel. Cherish this "extra" time that has been given to us and treat it as a gift rather than a burden.

In summary, as healthcare providers, we are the leaders during a pandemic. We took an oath to "do no harm" to patients. We must stand by this oath, which now means changing our current ways and adopting new ones. My office lives by the following quote from Dr. William J. Mayo, the elder Mayo brother in the Mayo family who gave their name and values to Mayo Clinic.

> *"The best interest of the patient is the only interest to be considered, and in order that the sick may have the benefit of advancing knowledge, union of forces is necessary."*

With that said, the takeaways are clear; we need to come together as a global nation, employ teamwork, and be flexible in order to fight against the COVID-19 virus. With this approach, we have our best chance at mitigating and hopefully eradicating infection, an outcome that is truly in the best interest of not only our patients but all of humankind.

Be safe,

Gina Mangin, MPAS, PA-C
President SDPA
Diplomate SDPA

The Microbiome: The Role of Bacteria in Cutaneous Disease

John V. Notabartolo, DMSc, PA-C, DFAAPA

ABSTRACT

In 2013, 85 million Americans saw their physician for at least one skin disease as reported by the Journal of the American Academy of Dermatology.[1] Patients presented seeking treatment for a wide range of conditions, from the seemingly benign teenage acne cases to severe autoimmune diseases like atopic dermatitis or psoriasis. Increasingly, the impact of the skin and gut microbiome in dermatologic conditions, as well as their role in maintaining normal, healthy skin has been examined. Changes in bacterial load and composition have been associated with the clinical presentation of skin diseases ranging from atopic dermatitis and eczema, to allergic reactions and even psoriasis. Human skin plays host to a complex community of organisms that varies throughout the different regions of the body.[2] Through clinical research, we are gaining an understanding of how our normal flora, both skin and gut, relates to maintaining healthy skin and how changes in this microbial balance may exacerbate or alleviate these conditions. Recent increases in research interest, combined with improved methods of identification have made our perception of the microbiota's involvement in patients suffering from skin disease more robust. We are coming closer to developing treatment options that may include replacing or altering the resident microbes of both the skin and the gut. Appreciation of the link between the flora that we host and our susceptibility and response to skin disease is becoming clearer and is likely to usher in a host of novel treatment modalities.

KEYWORDS

skin microbiome, skin flora, cutaneous disease, acne, atopic dermatitis, psoriasis, dermatology

» CME

This program has been reviewed and is approved for a maximum of .5 hours of AAPA Category I CME credit by the Physician Assistant Review Panel.

Approval is valid for 1 year from the issue date of April 2020. Participants may submit the self-assessment exam at any time during that period.

This program was planned in accordance with AAPA's CME Standards for Enduring Material Programs and for Commercial Support of Enduring Material Programs.

SDPA members may access the post-test at https://www.dermpa.org/JDPA_Exams

Learning Objectives:

- *Increase the reader's awareness of the balance of a normal skin microbiome*
- *Demonstrate knowledge of how the balance of normal skin flora changes with active disease*
- *Recognize the connection between cutaneous and gut microbiomes in the disease process*
- *Help identify potential future treatment targets for those patients with acne, psoriasis, and atopic dermatitis*

THE HUMAN SKIN MICROBIOME: BALANCE AND COMPOSITION

Long have we acknowledged that the surface of human skin is teeming with microbes. Research over the last few years has begun to quantify and qualify the make-up of our microbiome. Further, current research is leading to us taking a closer look at how our microbiome interacts with skin diseases. It is estimated that over one million bacteria, comprised of hundreds of species, cover each square centimeter of human skin. We are realizing that they play a role not only in infection, but in noninfective skin disease.[3] Investigation of the skin portion of the microbiome is a relatively recent area of research with the majority of initial study being focused on the gut components.[4]

Examination of the flora that inhabits healthy skin of those typical sites where skin conditions are known to manifest permits us to then compare these findings

with those of skin affected by pathology. The results of these comparisons enable us to more selectively target known pathogens and study the effect. The balance and composition of our skin microbiome may be selectively altered through the use of antibiotics and topical preparations, as well as through our choice of hygiene habits and products.[5] Some species of normal skin bacteria have been found to be beneficial by inhibiting the growth of other, potentially harmful bacteria, thereby preventing infection.[4] This natural inhibition alludes to the supposition that it's not just outside pathogens, but also imbalances in our resident ecosystem that can result in pathology. The skin itself forms a physical barrier and acts as a first-line defense against these outside invaders. Its resident microbiota aids our immune system by activating and assisting innate immunity as well as influencing adaptive immunity. One study clearly illustrated this activity by demonstrating that germ-free mice without commensal skin microbes exhibited an abnormal T-cell population and cytokine production. When a pathogen was introduced into this sterile skin environment, it was unable to mount an appropriate immune response to a Leishmaniasis major infection. The inability to respond was able to be reversed once the skin was colonized with *Staphylococcus epidermidis*.[6]

As we are gaining more knowledge of the form and function of our skin's outer defense mechanism, we begin to apply that knowledge to specific disease states. Loss of diversity, as well as changes in the composition of the skin's natural microbial community has been implicated in chronic inflammatory skin diseases. Three skin diseases that have received some attention are acne, atopic dermatitis (AD), and psoriasis.[7] An examination of the research and potential for novel treatment follows.

THE ROLE OF BACTERIA IN CUTANEOUS DISEASE

ACNE. Acne vulgaris is, by far, the most common skin disease, affecting more than 50 million people in the United States each year.[8] It is a chronic inflammatory and obstructive disorder of sebaceous skin, primarily affecting the face, neck, chest, and back. Known factors involved in the pathogenesis of acne include increased sebum production, defective keratinization, and atypical microbial balance.[9]

Historically, most treatments have focused on the role of *Cutibacterium acnes* (formerly *Propionibacterium acnes*). *C. acnes* is a commensal skin bacterium thought to increase inflammation in acne-prone skin and is targeted through topical and oral antibiotics *(Figure 1).* We have known *C. acnes* involvement in the disease, but its exact role has not been well established. Thought to be a factor contributing to inflammation in the hair follicles found in patients with acne, the diffuse distribution of *C. acnes* in normal and pathologic skin contradicts this assumption. Found in healthy skin, *C. acnes* is a mutualistic microorganism that is necessary for normal skin function that aids in the prevention of pathogen invasion and colonization via hydrolysis of triglycerides in sebum and release of antimicrobial fatty acids that contribute to the acidic pH of the skin.[10] Application of *S. epidermidis*, another known commensal skin bacteria, has been shown to counteract infection of *Staphylococcus aureus*.[11] Use of this process, as well as the use of glycerol, a by-product of *S. epidermis* growth, exhibited positive effects, creating *C. acnes*-free zones *in vitro*,[12] potentially paving the way for novel treatment of acne with topical probiotic preparations. Bacteria are not the only component of the skin microbiome that have a role in the formation of acne comedones and the chronicity of inflammation. Research has also indicated that both *Malassezia* and *Candida* strains of yeast are involved[13,14] in acne pathogenesis and may present yet another target of future research and treatment.

The role of diet and acne has long been debated. Parents will typically discourage their children with acne from consuming chocolate and fatty or fried foods because they "cause acne." Dermatology professionals typically debunk these myths during appointments, but recent research has suggested that a Western Diet, one rich in dairy and processed foods, may lead to a lack of microbial diversity in the gut. The microbial composition of the gut found in patients with acne has been linked to dysfunction of the interstitial epithelial barrier and subsequent changes to anti-inflammatory mechanisms we have observed in other disease states.[15,16] These changes, indicative of an increase in immune system activity, may lead to treatment of the gut imbalance as well as the localized inflammatory skin reaction.

ATOPIC DERMATITIS. Atopic dermatitis (AD) is a chronic inflammatory condition clinically characterized by pruritic, dry skin that occurs during periodic flares. It stems from a genetic predisposition in individuals who have a mutation in the filaggrin

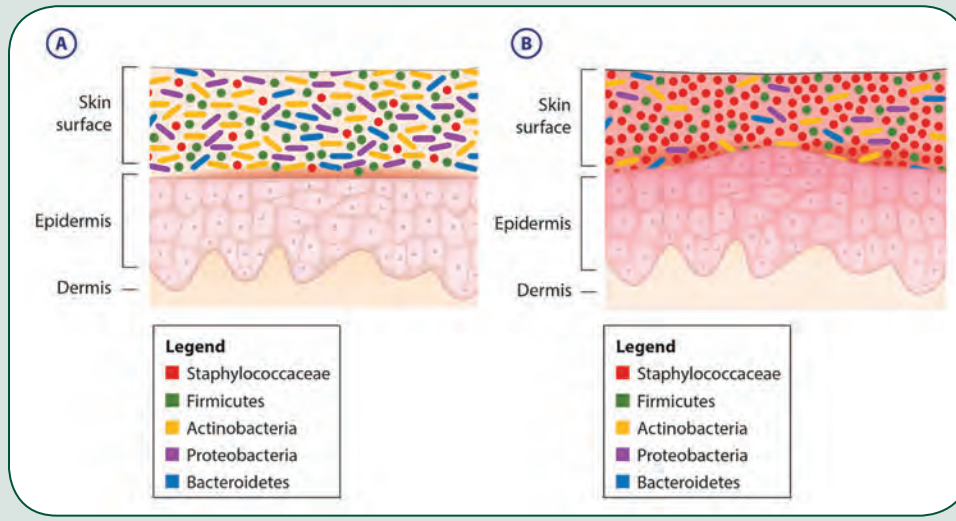


Figure 1. Relative *P. acnes* strain abundance in the nose pilosebaceous unit is different between acne patients and healthy individuals. A) Normal relative abundance of dominant *P. acnes* strains in healthy individuals. B) Acne-induced dysbiosis is characterized by a decrease in the relative abundance of P. *acnes* strains RT3 and RT6, and an increase in the relative abundance of strains RT4, RT5, RT7, RT8, RT9, and RT10.53. C) The persistent nature of acne vulgaris and its ability to be only partially ameliorated through antibiotics can be due to pockets of biofilm-forming P. *acnes* strains located on various skin appendages, including on the skin surface, the sebaceous gland, the hair follicle, and the pore itself.

Adapted with permission from Brandwein M, Steinberg D, Meshner S. Microbial biofilms and the human skin microbiome. npj Biofilms and Microbiomes. 2016;2:3.

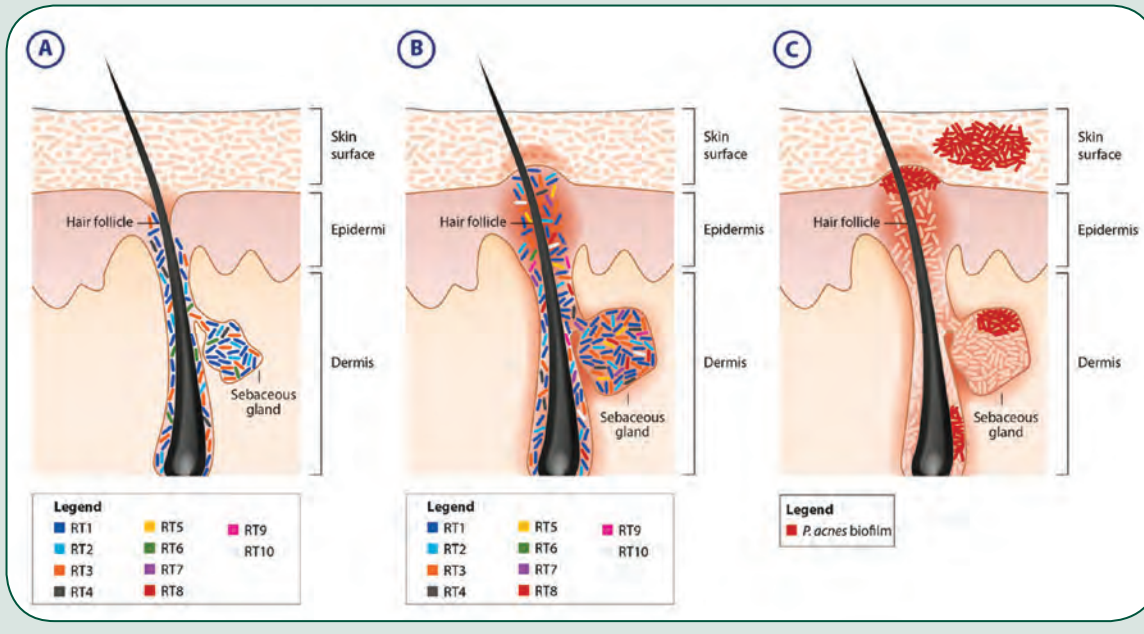


Figure 2. Atopic dermatitis (AD) flares are characterized by shifts in relative abundances of several bacterial species. A) Abundance of the dominant skin bacterial phyla *(Firmicutes, Actinobacteria, Proteobacteria, and Bacteroidetes)* and the family *Staphylococcaceae* (a *Firmicute*) associated with healthy skin. B) AD induces dysbiosis characterized by a decrease in bacterial diversity and the dramatic increase in the proportion of *Staphylococcaceae*.

Adapted with permission from Brandwein M, Steinberg D, Meshner S. Microbial biofilms and the human skin microbiome. npj Biofilms and Microbiomes. 2016;2:3

gene (FLG) that encodes a key skin barrier component called flaggrin.[17] It is estimated to affect 20 percent of people in developed countries[18] and is increasing in prevalence in developing nations, leading many to believe that it may be a repercussion of over-cleansing and a sterilized environment. The "Hygiene Hypothesis" postulates that in developed nations the decrease in infections coinciding with an increase in immune disease is due to a failure of being exposed to benign pathogens during childbirth and early life.[19] Exposure to microbial diversity independent of other factors has been indicated as a factor for reduced rates of childhood asthma. This indicates that the microbial commensals that inhabit our respiratory tract, gut, and skin play a large role in the development of our ability to resist pathogens and fight disease.[20]

AD is sometimes described as an inside-outside disease due to its external, skin manifestation combined with an immune system abnormality that result in an amplified T-cell response to external antigen exposure.[21] AD patients' condition is further complicated by being prone to frequent skin infections due to the compromised skin barrier that is typical to the disease. The effect of an AD flare on the skin microbiome has been well studied. Researchers have concluded that *S. aureus* is the most prevalent organism on inflamed skin with 30 to 100 percent coverage. It is not known why the rates are so high in patients with FLG mutation but is has been attributed to filaggrin's property of aiding in the maintenance of the acidic pH balance of the skin, thereby promoting the defense against pathogen proliferation.[22] *Figure 2* shows the comparison between the bacterial diversity in healthy skin and skin affected by AD-induced dysbiosis.

No discussion of AD research would be complete without looking at the balance of gut bacteria in this disease. Due to the known immunological changes in active AD, the role of gut flora has been of particular interest. One study of the composition of stool samples of patients with active disease were observed to have significant decrease in the gut concentration of *Bifidobacteria*, the degree of which correlated inversely with the severity of the patient's AD.[23] Similar decreases in the number of *Lactobaccillus* have been seen in studies, followed by early colonization by *Clostridium difficile* in infants that exhibited early manifestations of AD.[24]

One may surmise that rebalancing the gut microbiota to a pre-disease state would offer a mechanism to treat AD flares, yet attempts made to treat active AD with probiotics have been largely unsuccessful.[25] This leads to the possible conclusion that it is the state of the active disease that affects the gut flora and not the other way around. Looking to substantiate this theory, one study by Kim et al[26] focused on the extracellular vesicles (EVs) produced by bacteria during the AD inflammatory process. Prior to treatment, there was a definite difference in the bacterial EVs noted in blood and urine samples between the active AD patients and those in the control group, similar to those noted in previous studies. The control contained much higher numbers of lactic acid bacteria than the active subjects. Those with active AD were then treated in a traditional manner, with wet dressings, topical corticosteroids, calcineurin inhibitors, and oral corticosteroids for 14 days. The particular treatment regimen chosen was appropriate for the body location and severity of their disease. Prior to treatment, the urine of the AD patients expressed EVs of *Alicyclobacillus* and *Comamonadaceae* while in the post treatment period *Acinetobacter* and *Oxalobacteraceae* were the most frequently found bacteria. These results are meaningful because they indicate a strong relationship between disease and gut bacteria, dependent upon whether the disease is flaring.[26]

When we consider our earlier discussion regarding the Hygiene Hypothesis and early exposure to diffuse microbiota proffering resistance to developing conditions caused by immune system dysfunction, we have had some significant results. Studies of infants with either a genetic predisposition to atopic disease or an early manifestation of AD were shown to have these same bacterial colony changes in their stool samples and it was notable that they actually precede the development of active disease.[27] Another related study demonstrated that pretreatment of mothers with a strong predisposition toward AD with *Lactobacillus* reduced the infants' risk of developing the condition by half[28] and another study demonstrated the advantage of early introduction of formula containing probiotics. This intervention reduced the severity of infants' AD at two months.[29]

PSORIASIS. Psoriasis is a chronic disease that affects the skin, nails, and joints. It has been considered another example of an inside-outside disease, where a genetic expression of an inherited trait causes a response of the innate immune system to mount an

attack on the affected areas. Recent studies regarding the microbiome in active psoriasis are challenging this supposition. *Malassezia furfur* is a skin commensal that can cause pathology if overgrown (seen in tinea versicolor). In its role as part of our normal flora, it is involved with cell proliferation and migration. Baroni et al[30] considered the role of *M. furfur* in psoriasis. Their work revealed that introduction of cell fragments onto the skin of patients with psoriasis can cause the formation of new plaques, suggesting that *M. furfur's* beneficial effect of aiding in the migration and proliferation of cells can also induce the overproduction of skin in existing psoriasis sufferers.

The two current prevailing theories regarding psoriasis interpret the pathologic data differently. The one that is currently favored maintains that psoriasis is an autoimmune disease, while the contrasting theory suggests it is a response triggered by a microbial event on the skin. A link between Group A β-hemolytic Streptococcus infections and guttate psoriasis due to activation of T cells in the skin by streptococcal superantigens (Sags), such as staphylococcal and streptococcal exotoxins and streptococcal M proteins, and pyogenic exotoxins has been robustly suggested[31]; yet a review of the available data regarding the recommended therapy of treating acute guttate psoriasis with antibiotics yielded no consistent benefit from this method of treatment.[32] This lack of response demonstrates that there is something more complex at work than simply an immune system reaction to an antigen.

Examining the relation of the microbiome pre- and post-treatment with ustekinumab for chronic plaque psoriasis revealed an increase in the diversity of the microflora residing in lesioned skin. There were major changes detected in the 11 most common microbes in at least one body site tested.[33] These results are similar to those noted in the previously cited AD study, where conventional treatment of the skin disease led to changes in the microbiome diversity.

The question remains, is psoriatic disease due to an autoimmune reaction or initiated by (an) outside antigen(s)? One theory suggests the importance of early exposure to microbial diversity as stressed in the Hygiene Hypothesis. Lack of commensal bacteria exposure to an immature immune system may cause the mature immune reaction to trigger psoriatic flares when benign components of the microbiome are viewed as antigens.[34]

CONCLUSION

The Human Microbiome Project, launched in 2007, originated from the presumption that we are human superorganisms made up of both human and microbial components.[35] This multinational project is endeavoring to map and classify the hundreds of thousands of organisms that live on and in our bodies. Mounting evidence suggests that the skin and gut microbiomes interact in ways vital to maintaining our health. The synergy of these systems is proven, but we have yet to understand how this overall microbiome picture relates to human disease. More research on "big picture" interactions between skin and gut flora are poised to increase our appreciation of how the two interact. Also, further research into how diverse microbial exposure in infants may be necessary to create a healthier adult immune system is essential to improved outcomes regarding autoimmune diseases.

This understanding will lay the foundation for more comprehensive treatment modalities to better combat these discussed diseases, as well as other skin conditions. New health indicators will be identified and possibly lead to treatments that not only utilize the microbes themselves, but the beneficial compounds they have evolved to produce.

REFERENCES:

1. Lim HW, Collins SAB, Resneck JS, et al. The burden of skin disease in the United States. J Am Acad Dermatol. 2017;76(5):972.e2.
2. Grice EA, Segre JA. The skin microbiome. Nature Reviews Microbiology. 2011;9(4):244.
3. Grice EA, Kong HH, Renaud G, et al. A diversity profile of the human skin microbiota. Genome Res. 2008;18(7):1043.
4. Weyrich LS, Dixit S, Farrer AG, Cooper AJ. The skin microbiome: Associations between altered microbial communities and disease. Australas J Dermatol. 2015;56(4):268-274.
5. Grice EA, Kong HH, Conlan S, et al. Topographical and temporal diversity of the human skin microbiome. Science (New York, N.Y.). 2009;324(5931):1190.
6. Naik S, Bouladoux N, Wilhelm C, et al. Compartmentalized control of skin immunity by resident commensals. *Science.* 2009;324(5931):1190–1192.
7. Dreno B, Martin R, Moyal D, Henley JB, Khammari A, Seité S. Skin microbiome and acne vulgaris: Staphylococcus, a new actor in acne. Exp Dermatol. 2017;26(9):798-803.
8. Bickers DR, Lim HW, Margolis D, et al. The burden of skin diseases: 2004: A joint project of the American Academy Of Dermatology Association and the Society For Investigative Dermatology. J Am Acad Dermatol. 2006;55(3):490-500.
9. Kurokawa I, Danby FW, Ju Q, et al. New developments in our understanding of acne pathogenesis and treatment. Exp Dermatol. 2009;18(10):821-832.

10. Gallo R. Host-microbiome interactions and recent progress into understanding the biology of acne vulgaris. Microbiome. 2018;6(1).

11. Iwase T, Uehara Y, Shinji H, et al. Staphylococcus epidermidis esp inhibits staphylococcus aureus biofilm formation and nasal colonization. Nature. 2010;465(7296):346.

12. Wang Y, Kuo S, Shu M, et al. Staphylococcus epidermidis in the human skin microbiome mediates fermentation to inhibit the growth of propionibacterium acnes : Implications of probiotics in acne vulgaris. Appl Microbiol Biotechnol. 2014;98(1):411-424.

13. Song YC, Hahn HJ, Kim JY, et al. Epidemiologic study of malassezia yeasts in acne patients by analysis of 26S rDNA PCR-RFLP. Annals of Dermatology. 2011;23(3):321-328.

14. Omran A, Mansori A. Pathogenic yeasts recovered from acne vulgaris: Molecular characterization and antifungal susceptibility pattern. Indian J Dermatol. 2018;63(5):386-390.

15. Deng Y, Wang H, Zhou J, Mou Y, Wang G, Xiong X. Patients with acne vulgaris have a distinct gut microbiota in comparison with healthy controls. Acta Derm Venereol. 2018;98(8):783-790.

16. Yan H, Zhao H, Guo D, Zhu P, Zhang C, Jiang W. Gut microbiota alterations in moderate to severe acne vulgaris patients. J Dermatol. 2018;45(10):1166-1171.

17. Margolis DJ, Apter AJ, Gupta J, et al. The persistence of atopic dermatitis and filaggrin (FLG) mutations in a US longitudinal cohort. J Allergy Clin Immunol. 2012;130(4).

18. Flohr C, Mann J. New insights into the epidemiology of childhood atopic dermatitis. Allergy. 2014;69(1):3-16.

19. Ege M. The hygiene hypothesis in the age of the microbiome. Annals of the American Thoracic Society. 2017;14:S353.

20. Von Hertzen L, Hanski I, Haahtela T. Natural immunity. biodiversity loss and inflammatory diseases are two global megatrends that might be related. EMBO Rep. 2011;12(11):1089-93.

21. Beck LA, Thaçi D, Hamilton JD, et al. Dupilumab treatment in adults with moderate-to-severe atopic dermatitis. N Engl J Med. 2014;371(2):130-139.

22. Geoghegan JA, Irvine AD, Foster TJ. Staphylococcus aureus and atopic dermatitis: A complex and evolving relationship. Trends Microbiol. 2018;26(6):484-497.

23. Watanabe S, Narisawa Y, Arase S, et al. Differences in fecal microflora between patients with atopic dermatitis and healthy control subjects. J Allergy Clin Immunol. 2003;111(3):587-591.

24. Penders J, Thijs C, van Den Brandt P,A., et al. Gut microbiota composition and development of atopic manifestations in infancy: The KOALA birth cohort study. Gut. 2007;56(5):661.

25. Boyle RJ, Bath-Hextall FJ, Leonardi-Bee J, Murrell DF, Tang ML. Probiotics for the treatment of eczema: A systematic review. Clinical & Experimental Allergy. 2009;39(8):1117-1127.

26. Kim M, Choi SJ, Choi H, et al. Lactobacillus plantarum -derived extracellular vesicles protect atopic dermatitis induced by staphylococcus aureus -derived extracellular vesicles. Allergy, Asthma & Immunology Research. 2018;10(5):516-532.

27. Kalliomäki M, Kirjavainen P, Eerola E, Kero P, Salminen S, Isolauri E. Distinct patterns of neonatal gut microflora in infants in whom atopy was and was not developing. J Allergy Clin Immunol. 2001;107(1):129-134.

28. Kalliomäki M, Salminen S, Arvilommi H, Kero P, Koskinen P, Isolauri E. Probiotics in primary prevention of atopic disease: A randomised placebo-controlled trial. The Lancet. 2001;357(9262):1076-1079.

29. Isolauri E, Arvola T, Sütas Y, Moilanen E, Salminen S. Probiotics in the management of atopic eczema. Clinical & Experimental Allergy. 2000;30(11):1605-1610.

30. Baroni A, Paoletti I, Ruocco E, Agozzino M, Tufano MA, Donnarumma G. Possible role of malassezia furfur in psoriasis: Modulation of TGF-β1, integrin, and HSP70 expression in human keratinocytes and in the skin of psoriasis-affected patients. J Cutan Pathol. 2004;31(1):35-42.

31. Leung DY, Travers JB, Giorno R, et al. Evidence for a streptococcal superantigen-driven process in acute guttate psoriasis. J Clin Invest. 1995;96(5):2106.

32. Owen CM, Chalmers RJG, O' Sullivan T, Griffiths CEM. A systematic review of antistreptococcal interventions for guttate and chronic plaque psoriasis. Br J Dermatol. 2001;145(6):886-890.

33. Loesche MA, Farahi K, Capone K, et al. Longitudinal study of the psoriasis-associated skin microbiome during therapy with ustekinumab in a Randomized phase 3b clinical trial. J Invest Dermatol. 2018;138(9):1973.

34. Fry L, Baker BS, Powles AV, Engstrand L. Psoriasis is not an autoimmune disease? Exp Dermatol. 2015;24(4):241-244.

35. Turnbaugh PJ, Ley RE, Hamady M, Fraser CM, Knight R, Gordon JI. The human microbiome project. Nature. 2007;449(7164):804.

John V. Notabartolo *received his Doctor of Medical Science (DMSc) degree from University of Lynchburg in Lynchburg, Virginia, and is a recognized leader in his field with more than 20 years of dermatology experience, working clinically the last 20 years at Linda Woodson Dermatology in Las Vegas, Nevada. Specializing in psoriasis, skin cancer, acne, and eczema he has done clinical and laboratory research, written for several journals, and lectured on numerous topics. An active leader in the PA profession, he has served in various roles with the Society of Dermatology Physician Assistants (SDPA), including past president and vice president, and is currently a chairperson on the SDPA Ethical Affairs Committee. He is also past committee chair, member, and delegate to the House of Delegates of the American Academy of Physician Assistants and past president and treasurer of the Society of Air Force Physician Assistants. He is a veteran with 21 years of active duty service, a part-time actor and brewer, and admittedly has a difficult time sitting still. His joy for travel and experiencing new cultures has led him to ramble extensively throughout Europe and Northern Africa over the past two years with his wife of 32 years, LeAnne.*

He has indicated no relationships to disclose relating to the content of this article.

From The Patient's Perspective

Discovering Destiny: Researcher with Ichthyosis Dedicates Career to Investigating Disorder

By Janan M.

My name is Janan Mohamad. I'm a 26-year-old MD-PhD student in Tel Aviv University and Tel Aviv Sourasky Medical Center in Tel Aviv, Israel. I was born with a rare congenital disorder, known as congenital ichthyosiform erythroderma, which mainly affects the skin in the form of scales and erythema, but has affected every aspect of my life.

I would like to share with you my experience living with ichthyosis.

I was born to a warm, loving family. My parents always knew that I was different, that my skin was different, but they never treated me differently and in my early childhood, thanks to their support and to the acceptance of my close family, I lived a normal

life, unaware of my disorder. To this day, I feel truly blessed for having grown up surrounded by such wonderful people.

During my first years in elementary school, when I was about six- or seven-years old, I started noticing that other children were staring at me, some of them keeping a distance and many of them not wanting to become my friends. I began to understand that I was somehow different.

As I got older and became a teenager, I began to realize the full extent of my disease and its social impact. I wanted to be popular, to be "cool," but I couldn't hide my condition. My face was constantly red from erythema and I had to deal with stares, teasing, and repetitive questions regarding my look or my disease. These years were very difficult for me and I had to be very strong in order to get through and deal with my condition. I owe it to my family, especially my parents, that I found the strength to keep going.

When I was 16 years old, after a long and difficult journey living with my disorder, I felt that I was strong enough to alter the reality of my life. I decided to ignore the people who don't accept me because I am different and change the way I perceive myself. I

FIRST
Foundation for Ichthyosis & Related Skin Types™
Educate • Inspire • Connect

Foundation for Ichthyosis & Related Skin Types
2616 North Broad Street,
Colmar, Pennsylvania 18915
215.997.9400
info@firstskinfoundation.org

The Foundation for Ichthyosis & Related Skin Types, Inc, exists to improve lives and seek cures for those affected by ichthyosis and related skin types. Stay tuned, in the coming months we will relaunch our tele-ichthyosis site where medical professionals can submit cases and receive coordinated feedback from our expert physicians. It will be available on www.teleichthyosis.org coming soon!

Please visit www.firstskinfoundation.org to learn more.

said to myself, "This disease won't defeat you; you will defeat it!" and from that moment, I accepted myself for who I am and decided to discover the positive aspects of ichthyosis.

Unfortunately, social problems were not the only challenges I faced as an ichthyosis patient, and I had much more to deal with, most importantly, my health issues. The fact that there was no definitive treatment for my disease was difficult to accept. I felt that this was yet another obstacle to overcome and so, after three years as a dental student in the dental medical school in Tel Aviv University, I decided to join a PhD program in order to investigate my disorder and enlarge the knowledge regarding ichthyosis with hopes of paving the way for novel therapeutic approaches.

Today, I am in my first year in medical school in Tel Aviv University and in my final year of my PhD program continuing my research. I have been fortunate to benefit from the mentorship of two extraordinary researchers at Tel Aviv Sourasky Medical Center: Prof. Eli Sprecher, Chairman of the Department of Dermatology, and Dr. Ofer Sarig, Manager of the Laboratory of Molecular Dermatology. My study focuses on the genetic basis of ichthyosis and aims to delineate the cause of ichthyosis and the biological and genetic pathways, which are involved in the disease. Together with my teammates, I have successfully uncovered the genetic basis of many cases of ichthyosis and some molecular pathways involved in this disorder. Our hope is that these data help us to discover or develop medications to treat ichthyosis in the future.

As for the future, I hope to combine the clinical work, most probably as a dermatologist, with medical research on ichthyosis, which will continue to be my passion and a pivotal part of my life.

Finally, as a patient, my advice to anyone who suffers from ichthyosis or any other chronic and difficult disease, is to believe in yourself. To find the strength to cope with your disease and to change the course of your life. To understand that society can't choose your destiny – it is up to you. I believe that the change must come from within ourselves, and only when we accept ourselves for who we truly are, then will we be able to live a full and productive life.

Sincerely,
Janan

JDPA Grand Rounds

Practical Tips for Turning Clinical Encounters into Case Reports

By Cynthia Faires Griffith, MPAS, PA-C

When you see a patient in clinic, do you immediately think of the possibility of sharing the encounter with the larger dermatology community in the form of a case report? If the case is interesting, complex, or otherwise unique, perhaps you should.

Case reports are critical to the learning process. A good case might include descriptions of new diseases, features of diseases, and complications of treatment. Case descriptions along with follow-up discussion can increase readers' awareness of and ability to recognize the existence and etiology of new side effects, disease mechanisms, new therapies, and prognoses, all of which represent new information that can be applied in clinical practice.

Here are practical tips to turn a meaningful clinical encounter into an informative case report.

Grand Rounds: Identifying Meaningful Cases

In the late 19th century, the Johns Hopkins Medical School, specifically Sir William Osler, introduced bedside teaching as a new approach to clinical education. As participation grew, learning at the patient's bedside moved to presentation of patients and patient cases in large auditoriums and the term Grand Rounds was coined.[1]

Grand Rounds is particularly useful in dermatology where specific patient presentations help to teach the differences in similar diagnoses. Grand Rounds is interactive and takes a play from the Socratic Method. The patient case is presented including relevant history and family history, past treatment, clinical photographs and finally physical examination. In our written format the author will present the reader with questions that will help elicit knowledge about the diagnosis presented in the case, as well as any associated illnesses or relevant additional knowledge about the diagnoses or treatment.

The final part of Grand Rounds is additional discussion. This should be additional educational information about the diagnosis, additional information about the patient's course or treatment if available, any clinical pearls or practical tips gleaned from the case.

In addition to facilitating training, Grand Rounds is sometimes used by clinicians to bring complex medical cases to their colleagues to help with diagnoses or treatment. This does not lend itself to the journal format so at this time we prefer cases that have a diagnosis so there will be no cliffhangers!

Keywords

dermatology grand rounds, case report, education, guideline, publication, research, writing

Preparing Case Materials in Clinic:

1. Good clinical photographs.

Any publication in dermatology needs good clinical photographs. While the patient is in your office take good photos of the clinical findings prior to any biopsies. Use a dark background like blue or black poster board or a wall to decrease background input. Make certain that they are in focus.

2. A completed, signed, and dated photo release.

Some dermatology practices have everyone sign a photo release. If your office does not have everyone sign a photo release, while the patient is in your office for the visit have them complete, sign, and date a photo release.

Tip: If your office does not have an official photo release form on file, you can create a simple template using the following wording commonly seen in patient consent documents:

> "I [[[Patient Name]]] authorize [[[Name of Your Facility]]] to take photographs or digital images of me. I understand that

[[[Name of Your Facility]]] may use or release my images to the general public for the following purposes: 1) education lectures and presentations for health care professionals 2) scientific publications such as journals or books.

I hereby release [[[Name of Your Facility]]] from any and all liability connected with the capture, use, and release of my images."

[[[Patient Signature]]]
[[[Date]]]

3. Complete medical history.

Medical history is essential information to include in a case report. Obtain the patient's medical history and history of present illness. This may need to be edited for clarity and readability. For example, change bulleted statements to full sentences and clarify any abbreviations by spelling them out at first instance.

Putting It All Together

Once you have gathered everything needed to describe the patient, the next step is to conduct additional research on the diagnosis to flesh out the discussion section. The discussion should provide background and context, summarizing what is currently known about the diagnosis from previously published studies and case reports. If you aren't able to find evidence that matches your case presentation and diagnosis, then you might have stumbled upon the first reported case in the literature.

Sample Case Report Outline:

ABSTRACT:

a 1-3 sentence summary of the case

Case presentation (in a paragraph)

-History of the present illness

-Time of onset, aggravators, relievers, treatments etc

-Relevant medical/family history

-Clinical photographs

Three multiple-choice questions

An example could be: what is the most likely diagnoses for the cutaneous lesions or clinical case described above? Or what are some other findings associated with this condition?

Discussion (several paragraphs)

-Expounding on the diagnosis, possible treatments, associated diseases/risks/other diagnoses

-Patient's course or treatment if available

-Clinical pearls or practical tips gleaned from the case.

Answers to the three multiple-choice questions.

References:

Author Bio:

Figures:

(Clinical photographs)

REFERENCES:

1. Beeson PB. One hundred years of American internal medicine. A view from the inside. Ann Intern Med. 1986;105(3):436–444.

Cynthia Griffith is a Dermatology Physician Assistant at UT Southwestern Medical Center in Dallas, Texas, and earned her Masters of Physician Assistant Studies from UT Southwestern Medical Center. Cynthia is the co-creator of a High Risk Skin Cancer Transplant clinic for patients who are immunosuppressed after solid organ or bone marrow transplant. She also practices general adult medical dermatology. Cynthia is the Grand Rounds Editor for the Journal of Dermatology Physician Assistants and is a guest lecturer in the UT Southwestern PA program and a lecturer at local, regional and national conferences. She is a member of the Texas Academy of Physician Assistants, the Society for Dermatology Physician Assistants, and the American Academy of Physician Assistants. Cynthia was awarded the UT Southwestern's PA of the year in 2017. When not practicing, Cynthia is an avid sailor, marathoner and long distance cyclist. She has no relevant disclosures.

INFORMATION FOR AUTHORS

JDPA
Journal of Dermatology for Physician Assistants

The official journal of the Society of Dermatology Physician Assistants

JOURNAL OVERVIEW

The *Journal of Dermatology for Physician Assistants* (*JDPA*) is a peer-reviewed publication that delivers innovative clinical, surgical, cosmetic, and professional content exclusively for dermatology PAs. Submissions to the *JDPA* are peer-reviewed by a panel of experienced dermatology PAs, educational PAs, and dermatologists before being accepted for publication. Manuscripts submitted for publication are reviewed with the understanding that they are original and have neither been submitted elsewhere nor are being considered by other journals. Electronic submissions are accepted and should be sent to jdpa@dermpa.org.

JDPA follows the recommendations of the International Committee of Medical Journal Editors (ICMJE), the World Association of Medical Editors (WAME), and the Committee on Publication Ethics (COPE) for guidance on policies and procedures related to publication ethics. The policies submission requirements listed in *JDPA*'s Author Guidelines have been adopted from those three advisory bodies and, where necessary, modified and tailored to meet the specific content, audiences, and aims of *JDPA*.

EDITORIAL MISSION

The *Journal of Dermatology for Physician Assistants* (*JDPA*) is the official clinical journal of the Society of Dermatology Physician Assistants. The mission of the *JDPA* is to improve dermatological patient care by publishing the most innovative, timely, practice-proven educational information available for the physician assistant profession.

Manuscripts that meet our editorial purpose include, but are not limited to, original research pertaining to the field of dermatology and/or physician assistant education and practice, review articles on dermatological conditions and their treatments, case reports and studies, clinical pearls related to surgical and/or cosmetic procedures, commentaries on published literature, opinion essays on current issues, and letters to the editor.

CONTENT FOCUS

The main departments featured in *JDPA* are as follows:

- Clinical Dermatology
- Cosmetic Dermatology
- Dermatology PA News & Notes
- Professional Development
- Surgical Dermatology

Dedicated departments may comprise features or regular columns that highlight content specific to their subject matter.

JOURNAL STYLE

All aspects of the manuscript, including the formatting of tables, illustrations, and references and grammar, punctuation, usage, and scientific writing style, should be prepared according to the most current *American Medical Association (AMA) Manual of Style* (http://www.amamanualofstyle.com)

Author Listing. All authors' names should be listed in their entirety and should include institutional/professional affiliations and degrees held.

Authoring Groups. If you choose to include an organization, committee, team, or any other group as part of your author list, you must include the names of the individuals as part of the Acknowledgments section of your manuscript. This section should appear after the main text prior to your References section. (If your Acknowledgments includes both group members and other persons/organizations who are not in that group, you should instead list the group members in a separate appendix to avoid confusion.) The terms "for" or "on behalf of" must also be used when referencing the authoring group in the by-line.

Proprietary Products. Authors should use nonproprietary names of drugs or devices unless mention of a trade name is pertinent to the discussion. If a proprietary product is cited, the name and location of the manufacturer must also be included.

References. Authors are responsible for the accuracy of references. Citations should be numbered in the order in which they appear in the text. Reference style should follow that of the *AMA Manual of Style*, current edition. Abbreviated journal names should reflect the style of Index Medicus. Visit: http://www.nlm.nih.gov/tsd/serials/lji.html

Reference Formatting Guide

Journal article with 1 author
Zweibel K. Engineering. The impact of tellurium supply on cadmium telluride photovoltaics. *Science*. 2010;328(5979):699-701.

Journal article with more than 5 authors
Lim HW, Collins SAB, Resneck JS Jr, et al. The burden of skin disease in the United States. *J Am Acad Dermatol*. 2017 May;76(5):958-972.e2. Epub 2017 Mar 1.

Authored book
Griskey RG. *Transport Phenomena and Unit Operations*. Hoboken, NJ: John Wiley & Sons, Inc.; 2005.

Edited book
Cleophas TJ. *SPSS for Starters and 2nd Levelers*. 2nd ed. 2016. (Zwinderman AH, ed.). Cham: Springer International Publishing; 2016.

Book chapter
Worbs T, Förster R. T Cell Migration Dynamics Within Lymph Nodes During Steady State: An Overview of Extracellular and Intracellular Factors Influencing the Basal Intranodal T Cell Motility. In: Dustin M, McGavern D, eds. *Visualizing Immunity. Current Topics in Microbiology and Immunology*. Berlin, Heidelberg: Springer; 2009:71-105.

Website
Davis J. Soccer Players May Be At Risk Of Dementia From Repeatedly Heading The Ball. IFLScience. https://www.iflscience.com/health-and-medicine/soccer-players-may-be-at-risk-of-dementia-from-repeatedly-heading-the-ball/. Published February 15, 2017. Accessed October 30, 2018.

JDPA/Journal of Dermatology Physician Assistants (ISSN 1938-9574)
300 N. Washington Street, Suite 407, Alexandria, VA 22314
CONTACT: (703) 848-1746 DIRECT; (703) 848-7590 Main Line

MANUSCRIPT CATERGORIES

CLINICAL DERMATOLOGY

- ***Continuing Education (CME).*** Content should be specific to the field of dermatology following any of the following formats: Original research (clinical or basic science), Professional issues or health policy papers, Scholarly review of a topic. **Recommended content length:** up to 5,000 words not including references. **Requirements:** Learning Objectives (4), Statement explaining how the article addresses practice gaps, and Self-assessment post-test questions (4).
- ***Dermatology Case Report.*** Discuss a case(s) that illustrates an important or interesting observation. Cases should stimulate research and the exchange of information and illustrate the signs and symptoms, diagnosis, and treatment of a dermatological condition. At least 15 current references are recommended. Illustrative material is preferred. Must include abstract. (1,000 to 3,000 words).
- ***Clinical Dermatology PA Perspectives.*** A review of published article summarizing the practical thoughts and clinical issues (250-1000 words).
- ***From the Patient's Perspective.*** Patients' stories published in their own words. JDPA staff can even assist patients with writing their stories (250-1000 words).
- ***Clinical Snapshots.*** A brief written description and clinical facts about an interesting cutaneous anomaly (250-500 words).
- ***Drugs in Dermatology.*** Write about the current information regarding a particular dermatological medication, drug interaction, or medication side effect/adverse reaction (250-1000 words).
- ***Dermatology Evidence-Based Medicine (derm EBM).*** A brief, evidence-based assessment of the one or two most relevant studies retrieved to answer a focused clinical question that may have arisen from a real-life situation. A derm EBM is not a comprehensive review of a subject or a synthesis of all the available knowledge (500–1500 words).

COSMETIC DERMATOLOGY

- ***Feature Articles***. A review about a new or innovative cosmetic procedure, device, and/or approach to patient care (500-1000 words).
- ***Cosmetic Pearls***. A brief article on a fact or pearl for the cosmetic setting (250-500 words).
- ***Cosmetic Dermatology Case Report.*** Write a report and discuss a case(s) that illustrate an important or interesting observation (500-1500 words).
- ***Cosmetic Dermatology PA Perspectives.*** Write a review of published article summarizing the practical thoughts and clinical issues (250-1000 words).

COSMETIC DERMATOLOGY

- ***Feature Articles***. A review about a new or innovative cosmetic procedure, device, and/or approach to patient care (500-1000 words).
- ***Cosmetic Pearls***. A brief article on a fact or pearl for the cosmetic setting (250-500 words).
- ***Cosmetic Dermatology Case Report.*** Write a report and discuss a case(s) that illustrate an important or interesting observation (500-1500 words).
- ***Cosmetic Dermatology PA Perspectives.*** Write a review of published article summarizing the practical thoughts and clinical issues (250-1000 words).

DERMATOLOGY PA NEWS AND NOTES

- ***Feature Articles***. A review of a new or innovative dermatological procedure, device, and/or approach to patient care (500-1000 words).
- ***From The Desk Of…***Write an opinion essay sharing your insight regarding a current "hot item" issue (e.g., specialty PA credentialing, dermatology access to care, supervising physician relationships, etc.) or any other topic regarding the field of dermatology (250-1000 words).

PROFESSIONAL DEVELOPMENT

- ***Feature Articles.*** An article that explores the professional issues dermatology PAs face, such as reimbursement, education, medical trends, contracts, office management, etc. (500-1500 words).
- ***Outside & Inside the 9 to 5***. Share your story of the good work that you do either outside or inside your practice of dermatology. (250-1000 words).
- ***Notes From Your Office Manager***. A brief article on a fact or pearl for the office setting (250-500 words).
- ***Judicial and Ethical Affairs.*** An article that explores the complex or multifaceted ethical or judicial professional issues that affect the practice of dermatology for PAs (250-1000 words).

SURGICAL DERMATOLOGY

- ***Feature Articles***. A review about a new or innovative surgical procedure, device, and/or approach to patient care (500-1000 words).
- ***Surgical Wisdom***. A brief article on a fact or pearl for the surgical setting (250-500 words).
- ***Surgical Dermatology Case Report.*** A report discussing a case(s) that illustrates an important or interesting observation (500-1500 words).
- ***Surgical Dermatology PA Perspectives.*** Write a review of published article summarizing the practical thoughts and clinical issues (250-1000 words).

SUBMISSION GUIDELINES & INSTRUCTIONS

All submissions must adhere to the following format:

- Main Submission Document prepared in Microsoft Word (no PDFs) or similar word processing program
- Font: Times New Roman font, size 12, black
- Formatting: Use double spacing throughout
- Do not include footnotes within the manuscript body
- All abbreviations and acronyms should be spelled out at first mention.

E-mail Your Manuscript to: jdpa@dermpa.org

Note: Hard copies are not accepted

JDPA MANUSCRIPT PREPARATION CHECKLIST

✓ **TITLE PAGE**

Author listing. Full names for all authors, including degrees, and institutional/professional affiliations.
Corresponding author. The name and contact information of the corresponding author should also be included. This is the individual designated to communicate with the editorial staff regarding the manuscript.
Word Count. List main body word count (Do not include references and supplementary material).
Abstract. Include a structured abstract with all articles, except letters to the editors. Abstracts should be limited to 250 words and summarize the manuscript's main points (e.g., a research article might contain the following abstract categories: objective, design, setting, participants, measurements, results, conclusion.
Keywords. Include any search terms relevant to the manuscript content.
Disclosures. Include a any relevant disclosures, such as financial support, industry relationships, or other conflicts of interest.

✓ **FIGURES, TABLES, & SUPPLEMENTAL MATERIAL**

Journal Policy. For any figure, table, or supplemental material reproduced or adapted from another source, authors are required to obtain permission from the copyright holder, and proof of permission must be uploaded at the time of submission. The legend must include a statement that the material was used or adapted with permission.

***Figures*.** Authors should number figures in the order in which they appear in the text. Figures include graphs, charts, photographs, and illustrations. Each figure MUST include a legend.

***Tables*.** Tables should be numbered in the order in which they are cited in the text and include appropriate headers. Table formatting should follow the current edition of the *AMA Manual of Style*. Tables should be constructed using a Microsoft Word program and inserted in numerical order at the end of the manuscript, either within the main Word document (following the references) or as separate files. Do not provide tables in scan/image format.

Supplemental Material. References to any online supplemental information must appear in the main article. Such supplemental information can include but are not limited to additional tables, figures, videos, audio files, slide shows, data sets (including qualitative data), and online appendices. If your study is based on a survey, consider submitting your survey instrument or the key questions as a data supplement. Authors are responsible for clearly labeling supplemental information and are accountable for its accuracy. Supplemental information will be peer reviewed, but not professionally copyedited.

Navigating Shifts in PA Education during the COVID-19 Pandemic: A Best Practice Model from Yale University

An Interview with PA Online Learning Expert: James A. Van Rhee, MS, PA-C

James A. Van Rhee, MS, PA-C, is the Program Director for the Yale School of Medicine Physician Assistant Online Program. Mr. Van Rhee has been involved in physician assistant education for over 20 years. He has served as project director and test item writer for the Physician Assistant Education Association's (PAEA) Physician Assistant Clinical Knowledge Rating Assessment Tool (PACKRAT). He is the author of the Physician Assistant: Certification and Re certification Review Book and Consulting Editor of Physician Assistant Clinics, both published by Elsevier. For the last fifteen years he has been course director and presenter of the Physician Assistant Board Review, produced live online by Kaplan Medical.

Introduction

By Travis Hayden, MPAS, PA-C

Travis Hayden is Founding Editor of the Journal of Dermatology for Physician Assistants. He currently serves as Professor of Practice and Assistant Academic Coordinator in the Department of Physician Assistant Studies at Le Moyne College in Syracuse, New York.

With the 2019 novel coronavirus (COVID-19) pandemic causing major changes to activities of daily life, it seems everyone is asking themselves the same question: How do I adapt? As people stay close to their home base, the obvious answer emerged quickly—move everything online. One major area impacted by this shift is education in all stages. Whether you were a proponent or skeptic of it pre-COVID-19, conducting nearly everything in the online setting is now our new reality, and many of us, myself included, are taking a crash course in delivering education online.

I recently interviewed James A. Van Rhee, MS, PA-C, a longtime contributor to the JDPA and colleague of mine in PA education. Jim has been the Program Director for the Yale School of Medicine Physician Assistant Online Program since its inception and has been a key opinion leader in regards to online learning long before COVID-19 swept the globe. Here, Jim explains some advantages of online learning, both for PA students and faculty, shares his experience creating a successful online PA program, and provides practical tips educators can apply as they continue to navigate the new normal in PA education.

Travis Hayden

TH: Jim, thank you for taking the time to share your knowledge and insights on virtual learning with our *JDPA* readers, many of whom are either teaching or attending online courses as we speak! Please start with a brief history of Yale's PA Online Program and how you became involved in it.

JVR: Six years ago, Yale School of Medicine (YSM) was looking at innovation in medical education. The head of curriculum there at that time knew that I had an interest in online education and asked if I could explore virtual learning opportunities. One day, I talked with one of the online education vendors, and I remember walking back to my office and saying to my operations manager, "you know what, I think this can be done." I always wanted to try online education in PA education; I just didn't think the technology was there. I have learned that the technology is in fact there; however, the key to successfully implementing it into education is realizing when to utilize it. We shouldn't use technology just for the sake of saying we use it. It should be used only when we can develop and deliver high-quality content.

TH: What would you say are the main differences between an online PA program and a traditional in-person education setting?

JVR: The main difference is in the delivery system. YSM's PA Program is like every other PA program in the country. It is designed to be completed in 28 months of full-time study. The didactic year, "year one," is 12-months long and comprises 57 credits. The clinical year, or "year two," is 16-months long and offers 61 credits. A total of 118 credits are delivered through four main components: online classes and synchronous and asynchronous coursework, the Clinical Experience in Early Didactic (CEED), clinical rotations, and on-campus immersions.

We are a blended curriculum. We deliver lectures just like everybody else does; we just deliver them online. To enhance the didactic curriculum, we do live small group sessions; we just happen to do them live online. We cover physical exam; one portion delivered online, one portion via video, and a portion of it when the students come attend on-campus immersions. We do our clinical year just like everybody else does. Our students go to clinical sites around the country and do their rotations close to their homes.

TH: Are there any offerings or teaching methods you have found that contribute to YSM's success in the online education setting?

JVR: In planning YSM's PA Online Program, we

have tried to take as many aspects of learning that could possibly be put online—and not only put them online but do it well. One of the things we offer that's unique in the clinical year is what I call FLICKs, which stands for Focused Lectures in Clinical Knowledge. FLICKs are short (15-20 minutes) lectures that the students can watch during their downtime on rotations. FLICKS help to standardize the experience students gets across their rotations, which is important because, as you know, experiences vary. Your internal medicine rotation might have been completely different than your classmate's internal medicine rotation, even if you were at the same site.

Another unique offering of the program is CEED, which again stands for the Clinical Experience in Early Didactic. CEED exposes students to direct patient care in clinical settings and provides 120+ hours of hands-on experience. A preceptor is assigned to each student and acts as their guiding supervisor through the didactic year. CEED enables students to develop a practical understanding of PA skills and responsibilities prior to beginning the clinical year.

CEED is a great opportunity for students to learn how to think through problems and learn, practice, and improve their physical exam skills.

CEED is very structured. There are certain skills they need to accomplish under the guidance of the preceptor. During CEED or any in-person clinical experiences, we encourage students to not only spend time with their preceptor, but also other staff in the office like the billing department. It is about more than just getting a hands-on experience, it's about getting an interprofessional experience *per se* to see how the whole system works together.

TH: What are some concerns you have heard from others about moving education or personal interaction in general to the online setting?

JVR: One concern people always point out is how to achieve the live interaction that occurs in a traditional classroom setting, such as raising hands to ask and answer questions, when teaching online. Well, my students ask questions all the time and I even find them chit chatting before a lecture starts. The other question that came up early on when starting the online program was, "How do we get a sense of community when everyone is scattered all over the country?" I think that's what programs are struggling with right now as COVID-19 forces us to have a remote approach to almost all aspects of our lives. I think the answer lies in the simple observation that people interact remotely as they would in person. If you're a quiet reserved student who doesn't want to get involved, you are going to be a quiet reserved student whether you're in a classroom or not. The best advice is to let them be who they are.

In the early days of the PA Online Program, we worried about fostering a sense of community and grappled with whether we should change the structure in an effort to get the students to interact. One day, I said, "This is silly! Why are we forcing people to get together?" So, finally, we decided to change our whole mindset of "community." We discovered that the best approach was to make opportunities available to students and leave it up to them to participate. We gave them the tools and then we let them find a way to interact as a group.

TIPS FOR CREATING A SUCCESSFUL ONLINE LEARNING EXPERIENCE

1. **Keep it simple. Do what is possible. Don't overreach.**
2. **First things first, get content up online.**
   a. Take what you are already doing and put what you can online and what you have to do live, do it live online if possible. A lot is possible online.
   b. Keep lectures short (15-18 minutes). Take a 1-hour lecture and divide it into 2 to 3 sections.
      i. Use good lighting and, if possible, get your face on the screen as well. It's better to see the lecturer than just talking slides.
   c. Don't try to lecture live online if you can help it.
   d. Keep live sessions groups small (<15), if possible.
   e. Don't add content just for the sake of having content up for the students. If it doesn't meet your objectives, don't use it. Make sure your overall program objectives/graduate objectives are still being met.
3. **Assessments**
   a. It may be time to trust students again
   b. Using lots of assessments, formative or summative, keeps students engaged
4. **Physical exam (PE) skills**
   a. Lecture as above. Consider using videos to show PE skills.
      i. Use available video resources, such as Bates' Visual Guide to Physical Examination (https://batesvisualguide.com/).
      ii. Don't try making your own physical exam videos as they typically require special filming techniques .
   b. Have students practice and film PE skills on each other, friends, or family members.
   c. Make sure students practice with the camera before submitting for review so that all the PE skills can be observed.
   d. Have classmates and faculty watch students' videos and provide evaluative feedback—it works.
5. **Anatomy**
   a. Utilize lab videos and anatomy lectures that are available for free or for purchase online.
6. **Clinical year**
   a. If students are off rotation, help them keep their knowledge up to date by having them work online in small groups on cases related to rotations they have completed.
   b. Have "call-back days" online.
   c. Consider offering short, clinical lectures on various topics related to a specific rotation. It can be helpful to pull content from several sources, just make sure they meet your objectives.
7. **Procedure course**
   a. Ask yourself, "Do they really need to do them now?"
   b. If it can wait, consider hosting an immersion week where all the students are back on campus and you can cover all the skills/procedures that they need before starting clinical rotations.
8. **Remember a lot more is possible online than you think.**

NOTES from your Office Manager

Managing Negative Online Reviews

The Risk: Healthcare providers recognize that along with their practice websites, public websites such as Yelp, Healthgrades, and Rate MDs, and social media sites like Facebook and Twitter, can be used as marketing tools to inform the public of their services. The online community, however, is then afforded an opportunity to respond, rate, and, at times, complain about those services. These statements and reviews are readily accessible to anyone with an internet-ready device to open and read.

While there is a basic instinct to immediately respond to negative online reviews, healthcare providers must remember that privacy rules make a complete response via social media inappropriate, and responding directly to an online post puts the healthcare provider at risk of disclosing protected health information (PHI). Your response may not contain any identifying statements, but the mere recognition of a patient-provider relationship is a potential HIPAA violation.

The following tips will help you successfully and appropriately respond to negative online reviews:

Recommendations:

1. Critically review all social media posts for accuracy and authenticity. While some negative statements regarding the performance of you or your staff may be difficult to read, evaluate these reviews to determine if there is any opportunity for learning or process change.

2. Do not become engaged in online arguments or retaliation — especially if the comments made are particularly negative and potentially detrimental to the reputation of the facility or physician.

3. According to federal and state confidentiality and privacy laws, providers are precluded from identifying patients on social media. In order to protect patient privacy, all patient concerns and complaints should be resolved by the practice by contacting the patient directly and not through social media.

4. If you do choose to respond via social media, use a standard response that also serves as a marketing opportunity for your practice. Some examples include:

a. "[Insert name] Medical Group is proud to have been providing comprehensive and compassionate care in the community since [insert year] and takes our treatment of its patients and their privacy seriously. Because federal privacy laws govern patients' protected health information, it is not the policy of [insert name] Medical Group to substantively respond to negative reviews on "ratings" websites, even if they provide misleading, unfair, or inaccurate information. We welcome all our patients and their families to address any concerns/requests or information about their care with us directly, as we strive to continue to provide individualized care in our community."

b. "At our medical practice, we strive for patient satisfaction. However, we cannot discuss specific situations due to patient privacy regulations. We encourage those with questions or concerns to contact us directly at [insert phone number]."

5. If you feel the patient's complaint has disrupted the physician-patient relationship, consider discharging the patient from your practice. This action may be viewed as retaliatory by the patient and may set off a new series of negative posts. Consider contacting an attorney for further assistance.

6. Notify your local authorities if you feel at any time that your safety, the safety of your staff or your family is threatened or at risk.

JOIN SDPA TODAY

The Society of Dermatology Physician Assistants (SDPA) is a non-profit professional association **committed to empowering, educating and advancing PAs** currently working in the field of dermatology, as well as those interested in working in the field. The SDPA membership currently sits at 3700+, and we fully expect strong growth in the years to come as we continue to provide excellent service and benefits to our members. Turn the page and see what we have to offer...

Please visit us online at www.dermpa.org to learn more about our Society and the benefits of becoming a member.

Contact us at any time at 1-844-DERM-PAS (844-337-6727) or via email at membership@dermpa.org.

SOCIETY OF DERMATOLOGY PHYSICIAN ASSISTANTS

SDPA

• EST 1994 •

Ibuprofen is a Safe and Effective Alternative to Opioid Analgesics in Dermatologic Surgery

Brittny Call Ahrendes, DMSc, MMS, PA-C

ABSTRACT

Many dermatology clinicians avoid the use of and actively discourage their patients from taking ibuprofen for pain control in the perioperative period, often opting instead to prescribe an opioid analgesic or over-the-counter acetaminophen to manage pain following dermatologic surgery. This abstinence of use may be due to prior beliefs, habit, misinformation, or fear of bleeding. Concurrently, the United States has seen a dramatic increase in opioid misuse, overdose, hospital admission, and deaths over the last 20 years. For this reason, there is growing need to have oral analgesics that are safer and equally effective to opioids to control perioperative pain following dermatologic surgery. In light of this need, evidence and current dermatology guidelines support the use of ibuprofen or acetaminophen, together or independently, as first-line analgesia over opioids in dermatologic surgery patients. Given the high safety and tolerability profile, ibuprofen is beneficial and should be considered first-line in appropriate dermatological surgery patients.

KEYWORDS

surgical dermatology, dermatological surgery, postoperative pain, pain management, postoperative analgesic, ibuprofen, nonsteroidal anti-inflammatory drug (NSAID), opioid analgesic reduction

INTRODUCTION

Patients undergo dermatologic surgery for a variety of reasons. Cases may be minor excisions with simple repair or extensive Mohs micrographic surgery (MMS) requiring involved flap reconstruction. Many patients develop some level of postoperative pain (POP) requiring oral analgesia and traditional methods of pain control include oral acetaminophen (APAP) or an opioid such as APAP + codeine. Opioids are associated with unpleasant adverse events such as nausea, pruritus, constipation, altered mental status, and potential for addiction, thus requiring judicious use. Alternatively, ibuprofen (IBU), a nonsteroidal anti-inflammatory drug (NSAID), has a proven efficacy and tolerability profile, but its use is often discouraged by dermatologic clinicians for fear of increased bleeding during, and hematoma formation after, surgery. Evidence demonstrates, however, that there are no clinically significant increases in bleeding time, ecchymosis, or other postoperative adverse events when IBU is administered during the perioperative period.[1,2] Current dermatology guidelines recommend IBU as a first-line postoperative analgesic.[3,4] Despite these guidelines and current evidence, IBU is rarely recommended for pain control, or actively discouraged.[5] Given the need for prudent opiate use and effective pain control, IBU alone or in combination with APAP can offer superior analgesia, fewer adverse events, and greater patient satisfaction.[6]

Discussion

Dermatologic clinicians have lagged behind other surgical specialties in perioperative IBU analgesic use, and routinely counsel patients to stop NSAIDs, including IBU, up to one week before and after surgery. Fear of bleeding complications, such as prolonged intraoperative bleeding, increased ecchymosis, hematoma formation, and soft tissue or flap necrosis are reasons NSAIDs are held.[6] Such postoperative complications hold risks to soft tissue viability and can decrease aesthetic outcomes.[5] However, there are multiple reasons to consider IBU analgesic therapy as first-line pain control treatment following dermatologic surgery.

NSAIDs are indicated for use in anti-inflammatory, antipyretic, and mild-moderate pain control. They are in the class of nonselective platelet cyclooxygenase (COX) inhibitors that work by blocking the formation of thromboxane A2, thus impairing platelet aggregation. Platelet COX inhibition by NSAIDs can be either irreversible or reversible. Aspirin irreversibly inhibits platelet aggregation and the effects last the life of a platelet, 7 to 10 days. IBU is a reversible inhibitor of COX with effects lasting 12 to 24 hours, at which point platelet function normalizes.[7,8]

It is well documented that IBU does lead to temporary platelet dysfunction. However, this does not appear to translate into clinically significant increased bleeding time, as measured by activated partial thromboplastin

time (aPTT), until 16 times the recommended dose.[1] Clinically significant increased bleeding is not observed perioperatively or postoperatively at normal recommended doses.[1,2]

Traditional pharmaceutical practice in surgical dermatology has been to recommend APAP or an opioid analgesic as the primary medication for POP. Adherence to opioid analgesics is often inconsistent and may be associated with undesirable adverse effects, such as nausea, constipation, dizziness, pruritus, altered mental status, and potential for addiction.[9,10] Reduced compliance can lead to inadequate POP control.[6] In contrast to the opioid analgesic profile, IBU has a well-established patient tolerance, low-risk of abuse, low cost, and proven efficacy of pain and inflammation control. Current dermatology guidelines recommend opioids as second-line treatment only after an IBU or APAP trial following dermatologic surgery.[3,4]

Several studies in recent years have examined patient outcomes with IBU use alone, IBU + APAP, and APAP + Codeine (Co) in dermatologic reconstructions, including MMS flap reconstructions, and plastic surgery. IBU doses did not exceed the recommended daily maximum of 2400 mg. Aims of the studies included evaluation of efficacy and adverse event profiles of the regimens in management of POP.[5,6,9] Each of the studies evidenced similar findings. First, the effectiveness and superior pain control of IBU + APAP or IBU alone over APAP + Co.[5,6,9] Second, there is a significantly greater number of postoperative adverse events in the opiate group including bleeding, gastrointestinal problems, need for rescue medication, and dizziness.[5,6,9] Third, incidence of hematoma, ecchymosis, and postoperative bleeding were not increased in the patients receiving IBU.[6] Fourth, an overall high rate of patient satisfaction with IBU alone or IBU + APAP use.[11]

CONCLUSION

The United States has seen a dramatic increase in opioid misuse, overdose, hospital admission, and deaths over the last 20 years, and there is growing need to have safer and effective oral analgesic alternatives.[4] For many clinicians, IBU is a concern in dermatologic surgery for a variety of reasons. Potentially due to past beliefs, habit, misinformation, and fear of bleeding, it is routinely held prior to and after surgery. In light of evidence supporting its use, current dermatology guidelines outlining IBU or APAP use as first-line analgesia over opioids, and the high safety and tolerability profile, greater consideration for routine analgesic use should be given to IBU. For dermatological surgery patients, IBU is beneficial and current findings support its efficacy, safety, and recommend use.

REFERENCES:

1. Martini WZ, Deguzman R, Rodriguez CM, et al. Effect of Ibuprofen dose on platelet aggregation and coagulation in blood samples from pigs. Mil Med. 2015;180(3S):80-85. doi:10.7205/milmed-d-14-00395.
2. Gobble RM, Hoang HL, Kachniarz B, Orgill DB. Ketorolac does not increase perioperative bleeding: A meta-analysis of randomized controlled trials. Plast Reconstr Surg. 2014;133. doi:10.1097/01.prs.0000438459.60474.b5.
3. Glass JS, Hardy CL, Meeks NM, Carroll BT. Acute pain management in dermatology. JAAD. 2015;73(4):543-560. doi:10.1016/j.jaad.2015.04.050.
4. Cao S, Karmouta R, Li DG, Din RS, Mostaghimi A. Opioid prescribing patterns and complications in the dermatology Medicare population. JAMA Derm. 2018;154(3):317. doi:10.1001/jamadermatol.2017.5835.
5. Kelley BP, Bennett KG, Chung KC, Kozlow JH. Ibuprofen does not increase bleeding risk in plastic surgery: A systematic review and meta-analysis. Plast Reconst Surg. 2016;137(4):1309-1316. doi:10.1097/PRS.0000000000002027.
6. Sniezek PJ, Brodland DG, Zitelli JA. A randomized controlled trial comparing Acetaminophen, Acetaminophen and Ibuprofen, and Acetaminophen and Codeine for postoperative pain relief after Mohs surgery and cutaneous reconstruction. Dermatol Surg. 2011;37(7):1007-1013. doi:10.1111/j.1524-4725.2011.02022.x.
7. Goldenberg NA, Jacobson L, Manco-Johnson M. Brief communication: Duration of platelet dysfunction after a 7-day course of Ibuprofen. Ann Intern Med. 2005;142(7):506. doi:10.7326/0003-4819-142-7-200504050-00009.
8. Schafer AI. Effects of nonsteroidal antiinflammatory drugs on platelet function and systemic hemostasis. J Clin Pharmacol. 1995;35(3):209-219. doi:10.1002/j.1552-4604.1995.tb04050.x.
9. Chen T, Adamson PA. Comparison of Ibuprofen and Acetaminophen with codeine following cosmetic facial surgery. Otolaryngol Head Neck Surg. 2009;38(5):580. doi:10.2310/7070.2009.080265.
10. Mitchell A, Mccrea P, Inglis K, Porter G. A randomized, controlled trial comparing Acetaminophen plus Ibuprofen versus Acetaminophen plus Codeine plus caffeine (Tylenol 3) after outpatient breast surgery. Ann Surg Oncol. 2012;19(12):3792-3800. doi:10.1245/s10434-012-2447-7.
11. Mitchell A, Zanten SVV, Inglis K, Porter G. A randomized controlled trial comparing Acetaminophen plus Ibuprofen versus Acetaminophen plus Codeine plus caffeine after outpatient general surgery. J Am Coll Surg. 2008;206(3):472-479. doi:10.1016/j.jamcollsurg.2007.09.006.

Dr. Ahrendes *graduated from Emory University's Physician Assistant program in 2007, and completed her Doctor of Medical Science degree at the University of Lynchburg in 2018. Working extensively in surgical and dermatologic specialties, she spent five years in vascular surgery, and the past eight years practicing surgical, general, and cosmetic dermatology in Las Vegas, NV. The author indicates no relationships to disclose relating to the content of this article.*

Certification Review

All Those Things Inside the Skin You Might Have Forgotten

By James A. Van Rhee, MS, PA-C

Are you recertifying soon? Start your board review early. Each issue of the JDPA features one board question accompanied by a brief explanation of the answer along with any pertinent test taking tips. Best of luck!

QUESTION: A 27-year-old male presents to the emergency department after falling from a tree stand while hunting. He presents with low back pain, bilateral lower extremity weakness, and urinary incontinence that began after the fall. Physical examination is significant for bilateral lower extremity weakness and sensory deficits and decreased rectal sphincter tone. Which of the following is the most appropriate intervention?

A. Radiation therapy
B. Muscle relaxants
C. Oral opioids
D. Surgery

EXPLANATION: This patient presents with the classic findings of cauda equina syndrome. Symptoms include severe low back pain; sciatica, typically bilateral; saddle anesthesia; and bladder, bowel, or sexual dysfunction. Radiation therapy may be used in cases of low back pain due to metastatic disease. Muscle relaxants are not indicated in cauda equina syndrome but may be used in low back pain secondary to muscle strain. Oral opioids are not indicated in the treatment of low back pain. Cauda equina syndrome is best treated with surgical decompression within 48 hours of the onset of symptoms.

The correct answer is D.

James A. Van Rhee, MS, PA-C, *is the Program Director for the Yale University School of Medicine Physician Associate Program. Mr. Van Rhee has been involved in physician assistant education for over 20 years. He has served as project director and test item writer for the Physician Assistant Education Association's (PAEA) Physician Assistant Clinical Knowledge Rating Assessment Tool (PACKRAT). He is the author of the Physician Assistant: Certification and Re-certification Review Book and Consulting Editor of Physician Assistant Clinics, both published by Elsevier. For the last 15 years he has been course director and presenter of the Physician Assistant Board Review, produced live online by Kaplan Medical.*

From the Desk of...

The SDPA Board of Directors

The SDPA is pleased to announce our *most recent* Diplomate Fellow Members!

ARIZONA
Hilary Reznick, PA-C
Sean Lloyd, MHS, PA-C

CALIFORNIA
Natalie Matenaer, PA-C
Susa McKim, MPAS, PA-C
Nicole Smith, MPAS, PA-C
Bryson O'Neil, MPAS, PA-C
Sarah Baca, MMSC, PA-C

COLORADO
Landon Barton, PA-C
Kirsten Kuhn, MPAS, PA-C
Kathryn Harrison, PA-C
Bridget Barnhart, PA-C
Scott Lepage, MPAS, PA-C

DISTRICT OF COLUMBIA
Alexandra Stewart, MMSC, PA-C

FLORIDA
Andrea Duane, PA-C
Demi Soulet, MPAS, PA-C
Saadatu Olanrewaju, MPAS, PA-C
Nicole Schnell, MPAS, PA-C

IOWA
Paul Otteson, PA-C

IDAHO
Jessie Herzfeld, PA-C
Chelsea Faust, MMSC, PA-C
Kent Whitaker, PA-C

ILLINOIS
Kathryn Mitchell, PA-C
Heather Upchurch, A-C

INDIANA
Sarah Anderson, PA-C
Kathleen Glenn, MPAS, PA-C

LOUISIANA
Kassie Stafford, PA-C
Aaron Brasuell, MPAS, PA-C

MASSACHUSETTS
Ashley Hoffman, MPAS, PA-C
Linda Tambascio Gibbons, MHS, PA-C
Paul Dwyer, PA-C

MICHIGAN
Amber Corneillie, PA-C
Michael Render, PA-C
Heather Birmingham, PA-C

MINNESOTA
Heather Guertin, PA-C
Greta Corey, PA-C

MISSOURI
Erica Westbrooks, PA-C

NORTH CAROLINA
Lilly Dean, MS, PA-C
Clifford Amos, PA-C
Gina Noble, MPAS, PA-C
Katherine Caggiano, MPAS, PA-C

NEW JERSEY
Anna Ng, MS, PA-C

NEW MEXICO
Maria Abeyta, PA-C

NEVADA
Chloe Banning, MMS, PA-C
Melanie Buckley, PA-C

NEW YORK
Moises Acevedo, PA-C
Emily Wu, PA-C
Lauren Voss, PA-C
Allison Potolski, MPAS, PA-C
Anjali Varma, MS, PA-C
Jessy Ayala, MPAS, PA-C

OHIO
Maureen McCarthy, PA-C

OKLAHOMA
Michelle Lapidus, PA-C

OREGON
Alexandria Staub, MPAS, PA-C
Christina Oleson, PA-C

PENNSYLVANIA
Elyse Laneski, MPAS, PA-C
Dawn Sanzotti, PA-C
Gina Kuloszewski, PA-C
Adriana Distanislao, MPAS, PA-C
Erin Skaros, MPAS, PA-C
Molly McIntyre, PA-C

RHODE ISLAND
Nancy Staley, PA-C

TENNESSEE
Amanda Maples, PA-C
Leslie Heller, PA-C

TEXAS
Shanna Acord, MPAS, PA-C
Amy B.C. Rossiter, MS, PA-C

WASHINGTON
Coley Doolittle-Amieva, PA-C
Ryan Duarte, PA-C

WISCONSIN
Bridget Kilbride, MPAS, PA-C

Listening To Patients
A Soft Answer

By Alan Rockoff, MD

A soft answer turns away wrath. ***(Proverbs 15:1)***

Storming out of the examining room, he saw the nurse at her desk and shoved his wristwatch literally under her nose. "Does that say 1:15?" he demanded. Before she could figure out what the devil was going on, he answered his own question. "My watch does not say 1:15!" he proclaimed. "It says 1:30!"

She managed to shepherd him back into the exam room. "The doctor will be right with you," she said. A moment later I was. "Hello, I'm Doctor Rockoff," I said.

"My appointment was at 1:15," he retorted. "It is now after 1:30. Why is it that you doctors only care about your own time and not about the time of your patients?"

"I'm really sorry to have kept you waiting," I said, though I really wasn't all that sorry.

"I have a skin cancer that has to be taken off my back," he said.

"I see that my assistant performed a biopsy," I replied.

"And she was a lot more prompt than you are," he said.

"Well," I said, "I will try to improve."

"It's the whole medical profession," he continued. "They don't have the courtesy to care about the time of their patients, they only care about their own convenience."

"In that case," I said, "please accept my apologies on behalf of my entire profession." He seemed a bit mollified. In any case, he quieted down.

"You have a basal cell skin cancer on your back," I said. "It should just take a few moments to burn it off."

"My father had several of those," he said. "Now that I have one too, maybe my brother will finally have his skin checked out. He lives in Maryland."

While I prepared lidocaine, gauze, and curettes, he began to reminisce about past medical inconveniences.

"I was at an allergist's once," he said. "I sat there for 40 minutes. Not one patient was taken to the back. I got up and asked where the doctor was. 'He's been called away on an emergency,' the secretary said. 'Well,' I told her, 'were you going to tell anyone, or were you just going to let us sit here?' Can you believe that?"

I agreed that it was hard to believe. "What sort of emergency would an allergist be called away on?" I wondered.

"That's right," he said. "I could understand an orthopedist being called away for something urgent, but an allergist?"

"Maybe he had something going at the track," I mused, but got no response. I administered the lidocaine.

"Why does it have to hurt?" he asked. I gave no answer, having none.

"The allergist's secretary told me to sit down or else she would call the police," he said. "I said, 'You go right ahead and do that!'"

"Well," I said, picking up the curette, "I think that was unconscionable."

"Thank you for seeing my point of view," he said.

"You're welcome," I said.

A few minutes later I was done. "You're all set," I said. "See you back in six months."

"I'll make the appointment," he said.

"When you come back, we will try very hard to be prompt," I said.

"I certainly hope you will," he said, exiting. He glared at the nurse whose nose he had shoved his watch under, then grunted and headed for the front desk.

When I saw that he'd left the office, I pulled my tongue back out of my cheek. Then the whole staff and I shared a wink, a chuckle, and a sigh of relief.

Life brings challenges to confront and battles to fight. In the office there are insurers, government agencies, landlords, partners, and others who may have to be stood up to from time to time. But some challengers are not worth the effort. The older you get, the more battles, inside the office and out, don't seem worth fighting. Better to answer softly, deflect, and move on.

Promptly!

Alan Rockoff, MD, *practices dermatology in Boston, Massachusetts. He graduated with his medical degree in 1972 from the Albert Einstein College of Medicine in Bronx, New York and then completed a pediatric internship and residency at Bronx Municipal Hospital Center in Bronx, New York. Continuing his education, Dr. Rockoff completed a dermatology residency program at the combined program at Boston University and Tufts University in Boston, Massachusetts. Dr. Rockoff is a Clinical Assistant Professor of Dermatology at Tufts University School of Medicine. He has taught senior medical students and other trainees for more than 35 years.*

Dr. Rockoff has been named one of Boston's Top Doctors by Boston Magazine for five years. Dr. Rockoff is board certified by the American Board of Pediatrics and the American Board of Dermatology. Dr. Rockoff is a Fellow of the American Academy of Dermatology and a member of the Massachusetts Medical Society and the Massachusetts Academy of Dermatology.

Dr. Rockoff's publications have appeared in a number of journals. He writes a monthly column for his dermatologic colleagues in Dermatology News as well as a blog for the magazine Psychology Today. His first book, "Under My Skin: A Dermatologist Looks at His Profession and His Patients" is available on Amazon and is his second book, "Act Like a Doctor, Think Like a Patient: Teaching Patient-focused Medicine" is available on Amazon and at Barnes and Noble.

Dermatology Market Watch

Taltz® (Ixekizumab) Injection Approved for Pediatric Patients with Plaque Psoriasis

The U.S. Food and Drug Administration (FDA) has approved a supplemental Biologics License Application (sBLA) for Taltz® (ixekizumab) injection, 80 mg/mL for the treatment of pediatric patients (ages 6 to under 18) with moderate to severe plaque psoriasis who are candidates for systemic therapy or phototherapy.

The FDA approval of Taltz in pediatric patients with moderate to severe plaque psoriasis was based on a Phase 3, multicenter, randomized, double-blind, placebo-controlled study to evaluate safety, tolerability and efficacy of Taltz in patients from 6 to under 18 years of age. The co-primary endpoints of the study were the proportion of patients achieving a 75-percent improvement from baseline on their Psoriasis Area and Severity Index score (PASI 75) and a static Physician's Global Assessment of clear or almost clear skin (sPGA 0,1) at Week 12. Key secondary endpoints included the proportion of patients achieving PASI 90, sPGA 0 and PASI 100 at Week 12, and at least a four-point improvement in Itch numeric rating scale (Itch NRS ≥4) among patients with baseline Itch NRS ≥4 at Week 12, as well as PASI 75 and sPGA 0,1 at Week 4.

"Due to limited pediatric psoriasis treatment options available, treating children and adolescents with moderate to severe plaque psoriasis can be challenging," said Stacie Bell, chief scientific and medical officer, National Psoriasis Foundation.

"Having more FDA approved pediatric psoriasis treatment options available is a positive step forward in helping relieve the burden of psoriasis for pediatric patients, their families and the health care providers that treat these young patients," she said.

According to statistics available on the National Psoriasis Foundation website, psoriasis affects nearly eight million people in the United States.[1] Further, Joint guidelines of care for the management and treatment of psoriasis in pediatric patients issued by the American Academy of Dermatology (AAD) and National Psoriasis Foundation (NPF), many people living with psoriasis develop symptoms during childhood.[2]

For more details and full prescribing information and medication guide, visit the Taltz website (https://www.taltz.com/)

1.Statistics. National Psoriasis Foundation website. https://www.psoriasis.org/content/statistics. Accessed March, 2020.

2.Menter A, Cordoro K, Davis D et al. Joint American Academy of Dermatology National Psoriasis Foundation guidelines of care for the management and treatment of psoriasis in pediatric patients. J Am Acad Dermatol. 2020;82:161-201.

FDA Breakthrough Therapy Designation Announced for Baricitinib in the Treatment of Alopecia

Eli Lilly and Company and Incyte Corporation announced that the U.S. Food and Drug Administration (FDA) has granted Breakthrough Therapy designation to baricitinib for the treatment of alopecia areata (AA), an autoimmune disorder that can cause unpredictable hair loss on the scalp, face and other areas of the body. Baricitinib marketed as OLUMIANT®, is currently approved for the treatment of adults with moderately to severely active rheumatoid arthritis (RA). It is approved in more than 65 countries including the U.S., member states of the European Union, and Japan.

The Breakthrough Therapy designation aims to expedite the development and review of drugs that are intended to treat a serious condition when preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over already available therapies on a clinically significant endpoint(s).

The FDA Breakthrough Therapy designation is based on the positive Phase 2 results of Lilly's adaptive Phase 2/3 study BRAVE-AA1, which evaluated treatment with baricitinib versus placebo in adult patients with AA. In the Phase 2 portion of the BRAVE-AA1 study up to Week 36, there were no new safety signals with no serious adverse events reported. The reported treatment-emergent adverse events (TEAEs) were mild or moderate and the most common included upper respiratory tract infections, nasopharyngitis and acne.

Based on the interim results of the Phase 2 part of the study, the Phase 3 portion of BRAVE-AA1 and an additional Phase 3 double-blind study (BRAVE-AA2), are currently assessing the efficacy and safety of the 2-mg and 4-mg doses of baricitinib relative to placebo.

"There are millions of people around the world affected by and living with AA," said Dory Kranz, president and CEO of the National Alopecia Areata Foundation. "We're encouraged by baricitinib's potential to be one of the first FDA-approved medicines to treat AA."

For more details, visit the Olumiant website (https://www.olumiant.com)

Dupixent® (dupilumab) Phase 3 Data Show Significant Improvement in Severe Atopic Dermatitis for Children Aged 6 to 11 Years

Regeneron Pharmaceuticals, Inc. and Sanofi announced detailed positive results from a pivotal Phase 3 trial evaluating Dupixent® (dupilumab) for children aged 6 to 11 years with uncontrolled severe atopic dermatitis (AD). The results are available on the Revolutionizing Atopic Dermatitis (RAD) Virtual Conference website (https://revolutionizingad.com/).

The Phase 3, randomized, double-blind, placebo-controlled trial evaluated the efficacy and safety of Dupixent combined with TCS in 367 children with severe AD that covered on average 60% of their skin. More than 90% of children in the trial had a history of at least one atopic comorbidity, including asthma (nearly 50%).

Amy S. Paller, M.D, Walter J. Hamlin Professor and Chair of Dermatology and Professor of Pediatrics at Northwestern University Feinberg School of Medicine, and principal investigator of the trial said that data from the Phase 3 trial in children aged 6 to 11 adds to the established efficacy and safety data in adults and adolescents and provides hope to physicians and families for a potential new treatment option for children with this chronic disease.

"In my practice, I see children with severe atopic dermatitis struggling with intense, persistent itching and skin lesions covering much of their body, and caregivers who are desperate for additional treatment options that can help control this disease," Dr. Paller said.

Phase 3 trial highlights:

- Patients who added Dupixent to topical corticosteroids improved skin clearance; average overall disease improved by approximately 80% based on mean Eczema Area and Severity Index (EASI) score, which is calculated with the EASI scale commonly used to assess the severity and extent of atopic dermatitis (AD).
- At 16 weeks, nearly three times as many children achieved clear or almost clear skin when treated with Dupixent and TCS, and more than two-thirds experienced at least a 75% overall improvement of their disease compared to TCS alone.
- More than three times as many children experienced a significant reduction in itch (often

Dermatology Market Watch

described as the most burdensome symptom of atopic dermatitis) with Dupixent and TCS, compared to TCS alone. Itch reduction was observed in as little as two weeks after the first dose and continued throughout active treatment.

The results from the Phase 3 pediatric trial are currently being reviewed by regulatory authorities, including in the U.S., EU and Canada. In the U.S., the supplemental Biologics License Application for children aged 6 to 11 years is currently under Priority Review, with a target action date of May 26, 2020. There are currently no biologic medicines approved for children with severe atopic dermatitis.

For more details, please refer to RAD 2020 Abstracts and Poster—#215 - Dupilumab Significantly Improves Atopic Dermatitis in Children Aged ≥6 to <12 years: Results From Phase 3 Trial (LIBERTY AD PEDS)—available online at https://revolutionizingad.com/education-resources).

National Rosacea Society Expert Committee Updates Guideline on Standard Rosacea Management

The National Rosacea Society expert committee recently released a guideline update to their guideline on standard treatment options for rosacea, published online in the Journal of the American Academy of Dermatology. The update includes new recommendations for topical therapies, oral therapies, and light-based devices. This second version of the guidelines, an update from those published in 2017, reflect current insights into rosacea pathogenesis, pathophysiology, and management, and acknowledges that a "range of therapies has become available for rosacea, and their roles have been increasingly defined in clinical practice as the disorder has become more widely recognized." The update is intended to provide a comprehensive summary of management options, including expert evaluations, to serve as a guide for tailoring treatment and care on an individual basis to achieve optimal patient outcomes.

For more details, please visit the Articles in Press section on JAAD's website (https://www.jaad.org/inpress)

Dermcast.tv: The Official Online Media Resource of the SDPA.
dermcast.tv | dermpa.org | sdpaconferences.org | hireadermpa.org

SOCIETY OF DERMATOLOGY PHYSICIAN ASSISTANTS
SDPA
• EST 1994 •

Focus on Mental Health During the Coronavirus (COVID-19) Pandemic: *Applying Learnings from the Past Outbreaks*

Kaushal Shah, Dhwani Kamrai, Hema Mekala, Birinder Mann, Krishna Desai, Rikinkumar S. Patel

ABSTRACT

The 2019 novel coronavirus (COVID-19) has gained global attention after it originated from China at the end of 2019, and later turned into pandemic as it affected about 118,000 in 114 countries by March 11, 2020. By March 13, 2020, it was declared a national emergency in the United States as the number of COVID-19 cases, and the death toll rose exponentially. To contain the spread of the disease, the world scientist community came together. However, the unpreparedness of the nations, even with the advanced medical sciences and resources, has failed to address the mental health aspect amongst the public, as all efforts are focused on understanding the epidemiology, clinical features, transmission patterns, and management of COVID-19 pneumonia. Our efforts in this review are to evaluate and study similar outbreaks from the past to understand its adverse impact on mental health, implement adequate steps to tackle and provide a background to physicians and healthcare workers at the time of such outbreaks to apply psychological first aid.

KEYWORDS

Coronavirus, COVID-19, 2019-nCoV, pandemic, social and behavioral epidemiology, mental health services, behavioral services

INTRODUCTION & BACKGROUND

An outbreak of a global pandemic causes fear and concern among many and reportedly influence the cognitive well-being of every individual. The lives of infected individuals, family and friends, and the society are at stake due to the perpetuated potential effects of the 2019 novel coronavirus (COVID-19). The outbreak that started in China turned into pandemic as it infected more than 118,000 people in over 114 countries by March 11, 2020[1]. On March 17, 2020, the COVID-19 outbreak was declared a national emergency in the United States as the number of cases grew over 4,226 with a death toll of about 75[2]. Globally, there are 105,586 infection cases reported as of March 8, 2020 with 3,656 new infections while cases reported in China alone of COVID-2019 pneumonia are 80, 859[1]. The current death toll is at 3,584 globally of which 3,100 are in China as of March 8, 2020[1].

There is a neuropsychiatric linkage between the outbreak of acute respiratory infections and mental disorders which date back to the prevalence of influenza and severe acute respiratory syndrome (SARS) that took place years ago. The people who are in quarantine areas may experience boredom, anger, and loneliness; the symptoms of the viral infection such as cough and fever may also cause worsening cognitive distress and anxiety among people due to the fear of contracting the COVID-19[3]. During the early phase of the manifestation of SARS, several psychiatric comorbidities such as depression, panic attack, anxiety, psychomotor excitement, suicidality, delirium, and psychotic symptoms were reported[3].

Ever since the COVID-19 outbreak, scientists, clinicians, and health authorities across the globe are trying to build consensus on the clinical presentation and symptoms of COVID-19. A study assessing the clinical characteristics of COVID-19 pneumonia reveals that the most common symptoms of the infection are fever and cough. Among the studied 1,099 patients with the confirmed case of the disease in 30 provinces and 552 hospitals, 43% and 67% of them had a fever and cough on admission respectively, while 88.7% of them were hospitalized[4]. About 54% of the patients showed ground-class opacity as the most common radiologic finding, whereas 82% of the patients showed lymphocytopenia on admission[4]. This virus is also known to be transmitted by mildly ill or pre-symptomatic infected persons, which pose a challenge to control compared to the middle east respiratory syndrome (MERS) and SARS pandemics[5].

Among the confirmed 72,314 reported cases as of February 11, 2020, the most affected age group is 30-79 years, which had 38,680 cases of the 44,672 confirmed cases[6]. The least affected age groups are persons below 20 years of which among the reported, were a total of 965 cases as of February 11, 2020[6]. The incubation period of the infection is between two and 27 days with a median of 14 days due to which the World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) recommend 14 quarantine days[1, 7]. The infection is believed to spread person to person primarily through droplets from the nose or mouth[1, 7].

While the scientific community and the WHO are still working on many unanswered aspects of this

outbreak, clinicians and the general public are responding to this uncertain situation based on the limited confirmed information. This dubious situation has already created a large scale of disturbances in the lives of people across the globe, which calls for the need for research to study its implication on the mental health based on the learning of past outbreak.

Literature searches were carried out on PubMed, EMBASE, and Google Scholar using the keyword "COVID-19", "coronavirus", "2019-nCoV", "pandemic," and cross-referencing it with "mental health", "behavioral problem", "emotional distress," and "psychological distress". Abstracts found through this indexed search were further reviewed and screened to identify relevant articles or studies for our literature review. Our review article focused on **1.** current issues and intervention to handle COVID-19 pandemic; **2.** to understand the mental health impact on patients and at-risk population and the healthcare professionals; and **3.** steps focusing on mental health and psychological first aid.

REVIEW

Current issues. The WHO and CDC, and other health authorities across the globe are currently focusing on containing the COVID-19 pneumonia pandemic by recommending measures such as social distancing and quarantine; however, it lacks the emphasis and intervention of its impact on mental health[1]. COVID-19 infection is a new disease; hence it is important to understand that its emergence and spread may lead to cognitive distress, anxiety, and fear in the public which then may lead to harmful stereotypes[1]. With rising public stigma can cause the affected individuals hiding their illness to avoid discrimination which may prevent them from seeking immediate healthcare intervention[1].

The implementation of home quarantine is the number one factor that increases the prevalence of medical practitioners developing brief/acute to post-traumatic stress disorder (PTSD) as they display increased sleep and numbness disorder[8]. The total number of infected health personnel as of February 11, 2020 was 1,716 (3.8%) of the total confirmed 44,672 cases with five reported deaths[6]. Notably, there are not enough services that are set up to provide psychological counseling and psychiatric screening services for anxiety, depression, and suicidality for medical practitioners dealing with infected patients[9].

The counteractive measures employed by the health authorities across the world towards managing the COVID-19 infection include: early identification and separation of suspected cases, tracing of contacts, biological and clinical data collection from patients national and regional criteria for diagnosis, the consensus of expert medical interventions, hospitals and units established for isolation and the prompt increase in the number of medical practitioners to the affected regions[10]. These intervention measures are focusing on combating the pandemic but have serious mental health effects on the medical teams and the population at large[11].

Synopsis of current interventions. The prominent health authorities across the world have provided recommendations for the benefit of public health. The WHO advised people to follow social distancing and avoid close contact with anyone, especially from the person showcasing any respiratory symptoms[12]. They also emphasized on maintaining better hygiene through washing hands consistently and use of appropriate protective gears while using dealing with wild and farm animals[12]. As the number of people visiting the hospitals and clinics is rising, they have advised the EDs and health centers to enhance the standards of infection prevention and control practices, and also directed to practice hygiene etiquette[12].

In addition to the above measures, the CDC recommended healthcare organizations to focus on the needs of medical care and assess the required resources. The objective is to ensure the preparedness of the healthcare system by outreaching professionals and clinical organizations. The readiness is measured in terms of the availability of resources to ensure a sufficient amount of emergency funds, the number of guidance documents for the public to educate about infection and control measures, medical supplies, personal protective equipment, and clinical management. With the collaborative approach, they are working closely with healthcare and nonhealthcare organizations, public health departments, pharmaceutical companies, and religious organizations of all the states to reduce the spread of the COVID-19 infection[13].

As the current focus of the health authorities is mainly on the prevention, management, and limiting the spread of the coronavirus infection, a little attention is on mental health. No specific interventions are provided and executed to protect the mental health in the community, including healthcare workers[14].

Mental health impact on patients and the general population. A study was done to assess the psychological and immediate stress outcomes on patients who were quarantined and put under hemodialysis and the medical practitioners who cared for the infected persons at the time of the MERS [15]. With the help of mini international neuropsychiatric interview technique and utilizing the hospital anxiety and depression scale, it was determined that the patients had higher impact events scale-revised scores (IES-R) during the initial phase of the outbreak[15]. Qualitatively, an assessment of the high-risk groups showed varied IES-R scores on sleep and numbness; this was dependent on the application of home quarantines[15]. The results are consistent with the study on the Ebola virus's impact on the affected individuals in Nigeria that aimed at examining the psychological distress of the survivors[16].

A study detailing the psychological trauma of

bereaved families and victims of MERS states that a family affected by the infection claimed that the general public avoided them, and were socially isolated even after being treated and declared free of the disease[17]. There are also perpetuations about incubation periods of the infection being considered longer than usual by the public due to mixed information from electronic sources; and with a higher level of uncertainty, rumors get exaggerated[17]. The case of COVID-2019 is not different compared with the MERS and SARS cases as there are similar claims on social media platforms about the severity of the infection which infiltrates fear and worries among the public with increased anxiety levels[18]. In a study done on the terminal psychiatric disorders among the survivors of SARS, it was revealed that 25% of the patients showed signs of PTSD while 15.6% of them had worsening depression[19]. This correlates to the high number of older adult suicide deaths witnessed in Hong Kong in 2003 and 2004 among the affected individuals during the SARS epidemic[20]. MERS survivors of the critical illness also reported a low quality of life than those indirectly affected[21].

Mental health impact on healthcare workers. Previous studies on SARS and Ebola reveal a severity in emotional distress during the outbreaks of such epidemics[15]. It is also worthwhile to presume that many medical practitioners face PTSD, depression, anxiety, and burnout after the cessation of the incidence of such infections[15]. Compared with the number of other healthcare professionals who participated in the study, the clinicians showed a higher intrusion sub-score than those that never took part[15]. The results are consistent with studies on the SARS outbreak which demonstrated that 18%-57% of medical providers experiencing emotional distress at the onset, during, and after the outbreak of the infection[22]. During the Ebola outbreak, many health workers without traditional patient care roles were mostly infected; in addition, the medical staff worked extra-hours and settings without personal protective equipment and driven mainly by compassion[23]. The situation with COVID-19 is not different and poses a more significant mental health effect on the medical practitioners, as witnessed in the case of one medical practitioner dying due to the infection as purported[24].

A study found that hardiness and stigma have both direct and mediated impacts through stress among nurses working in government hospitals during the outbreak of MERS due to deteriorated mental health[25]. Clinicians have profound psychological distress due to the SARS epidemic than the nurses; this brings in the line of opinion that different professional levels have a disparate mental health impact[26-27]. A different study reaffirms this assumption in that the Davidson trauma scale (Chinese version) helped reveal a significant difference in the severity of PTSD in the ED than the clinicians in the psychiatric wards[28].

Learning from the past outbreaks. According to the Institute of Medicine, during the SARS outbreak of 2002-2003, four ethical issues were raised: the roles and responsibility of the medical workers, the impact of the infection on the global economy, equitable care, and the challenge of balancing public welfare and individual rights[29]. The issues saw a new era of international public health[29]. The emergence of internationally spreading epidemics reduces economic activities; thus, governments have the challenge of preventing the spread of the infection while minimizing the economic effects of the pandemic on travel and trade restrictions[29]. The outbreak of pandemics has a potential impact on the existing illnesses, causes distress among caretakers, and affected persons and leads to an onset of mental symptoms among the young or old, which is possibly related to the interplay of mental disorders and immunity[30]. In order to avoid the mental health effects of the COVID-19 infection, people need to avoid excessive exposure to COVID-19 media coverages, maintain a healthy diet and positive lifestyle, and reach out to others for comfort and consolation that the situation will soon be contained. Everyone should maintain a sense of positive thinking and hope and take personal or group time to unwind and remind the self that the intense feelings of fear, panic, and anxiety will fade. Additionally, seek information from reputable government sources for information and avoid the spread of erroneous information on the internet.

The previous outbreaks of the influenza pandemic have led to the incorporation of a resilience training program for medical practitioners in the preparation of another pandemic[31]. The training was also seen as a way of protecting the capacity of the medical institutions in responding to epidemics or pandemics. This strategy, just as the current case of COVID-19 and other infectious disease outbreak requires the following themes of concern in learning from the past epidemics or pandemics[31]: **1.** balance of family and work; **2.** ensuring reliability, consistency, and time-bound information; **3.** education and preparation of the employees and the involved communities; **4.** ensuring fairness and addressing ethical concerns; **5.** front-end leaders' participation; **6.** validating and valuing the front-line staff's contribution; **7.** timely addressing of fears and worries among the medical team; and **8.** ardent information on medical staff's redeployment to high-risk areas.

Steps focusing on mental health. Psychiatric treatment team including nursing staff, psychiatrists, case managers, and psychologists and social worker should be established to deliver mental health support to the affected persons and medics[3]. This should be coupled with the creation of appropriate mental health services, facilities, and specialized psychiatric treatment for patients with comorbid cognitive disorders.

Clear and consistent information should be provided to the medical teams on the prevalence of the COVID-19, the charted plans for treatment, the progress, and the updates on the status of health should be provided to both the patients and families involved[3].

The government and health organizations should ensure secure electronic information-sharing platforms are used to provide and promote telepsychiatry and telemedicine psychological counseling, promote legal information, and eliminate cases of isolation[32]. There should be more enforcement on the awareness of online training in the management of COVID-19[33].

Time-bound behavioral therapy should be provided to persons exhibiting signs of mental disorders to reduce the cognitive effects of the pandemic[34]. The psychiatrists should also allow for personal adjustment to face the situation; this involves the behavioral and emotional responses, which, when coupled with the psychotherapeutic treatments based on the model of stress adaptation[3].

There should be more research and clinical trials to come up with effective antiviral prophylaxis treatment of the infectious disease, as seen in the previous pandemics of SARS, MERS, and Ebola[35].

Importance of psychological first aid. Psychological first aid (PFA) is a crucial early intervention that focuses on mental health of the affected survivors by providing psychosocial support during outbreaks like COVID-19. It is a tool designed to mitigate acute distress and assess the need for continued mental healthcare through compassionate and supportive presence[36]. Relative to the previous pandemics, the COVID-19 has an impact on mental health either directly or indirectly[37]. PFA is essential to bridge the collaborative services and coping information among COVID-19 affected individuals[37].

Several PFA frameworks and models are currently available for emergency management. The Johns Hopkin's PFA tool consists of the 'RAPID' model with five steps[38]: step one, rapport and reflective listening: used throughout the interaction with a person in crisis, and the goal is to make initial contact and establish rapport through active and reflective listening techniques such as paraphrasing with empathy; step two, assessment: focuses on the evaluation of psychological and basic physical needs; step three, prioritization: emphasizes the importance of triage principles by focusing on the severity of cases that needs emergent care; step four, intervention: aims to mitigate distress and try to functional capacity using cognitive and behavioral interventions, and also provide basic needs; and step five, disposition and follow-up: the final step is a continuous process until stabilization of the situation, through providing constant support, meeting their needs, and regular monitoring.

Fundamentally, all tools aim to calm and orient emotionally overwhelmed survivors, offer practical help, contact, and engage, provide safety and comfort, and gather information on the present concerns and needs[37]. Thus, the PFA is an essential tool for clinicians and the survivors in addressing stress-related reactions after traumatic events like the COVID-19 pandemic[37].

CONCLUSIONS

Substantial evidence from the past studies of the impact of SARS, MERS, influenza, and Ebola epidemics on the at-risk population, the suffering individuals and healthcare providers showed neuropsychiatric linkage. The results are relative to the current COVID-19 pandemic; they infiltrate fear, anxiety, emotional distress, and post-trauma stress symptoms as the affected individuals are viewed as minority and secluded from the rest of the population. The intervention measures that are employed by various health authorities and government bodies in combating the infection may help in eliminating the threat during the time of uncertainty; however, the multivariate studies done on the previous outbreaks show that they have long-term cognitive and mental health effects on the population. It is vital to emphasize the mental health well-being of the population and take proactive steps to minimize its detrimental effects during the COVID-19 pandemic.

REFERENCES:

1. Coronavirus disease (COVID-2019) situation reports. (2020). Accessed: March 17, 2020: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports.
2. Coronavirus disease 2019 (COVID-19). (2020). Accessed: March 17, 2020: https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html.
3. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, Ng CH: Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry. 2020, 7:228-229. 10.1016/S2215-0366(20)30046-8
4. Guan WJ, Ni ZY, Hu Y, et al.: Clinical characteristics of coronavirus disease 2019 in China. N Engl J. 2020, 10.1056/NEJMoa2002032
5. Gates B: Responding to covid-19 - a once-in-a-century pandemic?. N Engl J Med. 2020, 10.1056/NEJMp2003762
6. Wu Z, McGoogan JM: Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72314 cases from the Chinese center for disease control and prevention. JAMA. 2020, 10.1001/jama.2020.2648
7. Del Rio C, Malani PN: COVID-19 - new insights on a rapidly changing epidemic. JAMA. 2020, 10.1001/jama.2020.3072
8. Severance EG, Dickerson FB, Viscidi RP, et al.: Coronavirus immunoreactivity in individuals with a recent onset of psychotic symptoms. Schizophr Bull. 2011, 37:101-107. 10.1093/schbul/sbp052
9. Ford-Jones PC, Chaufan C: A critical analysis of debates around mental health calls in the prehospital setting. Inquiry. 2017, 54:46958017704608. 10.1177/0046958017704608
10. Report of the WHO-China joint mission on coronavirus disease 2019 (COVID-19). (2020). Accessed: March 15, 2020: https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf.
11. Rubin GJ, Wessely S: The psychological effects of quarantining a city. BMJ. 2020, 368:313. 10.1136/bmj.m313
12. Coronavirus disease (COVID-19) advice for the public. (2020). Accessed: March 15, 2020: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public.
13. Coronavirus (COVID-19). (2020). Accessed: March 15, 2020: https://www.cdc.gov/coronavirus/2019-ncov/prepare/index.html.

14. Onyeaka HK, Zahid S, Patel RS: The unaddressed behavioral health aspect during the coronavirus pandemic. Cureus. 2020, 12:e7351. 10.7759/cureus.7351
15. Lee SM, Kang WS, Cho AR, Kim T, Park JK: Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. Compr Psychiatry. 2018, 87:123-127. 10.1016/j.comppsych.2018.10.003
16. Mohammed A, Sheikh TL, Gidado S, et al.: An evaluation of psychological distress and social support of survivors and contacts of ebola virus disease infection and their relatives in Lagos, Nigeria: a cross sectional study -- 2014. BMC Public Health. 2015, 15:824. 10.1186/s12889-015-2167-6
17. Sim M: Psychological trauma of Middle East Respiratory Syndrome victims and bereaved families. Epidemiol Health. 2016, 38:2016054. 10.4178/epih.e2016054
18. Assessing China's management of the coronavirus crisis. (2020). Accessed: March 15, 2020: https://www.policyforum.net/spreading-coronavirus-spreading-fear/.
19. Mak IW, Chu CM, Pan PC, Yiu MG, Chan VL: Long-term psychiatric morbidities among SARS survivors. Gen Hosp Psychiatry. 2009, 31:318-326. 10.1016/j.genhosppsych.2009.03.001
20. Cheung YT, Chau PH, Yip PS: A revisit on older adults suicides and severe acute respiratory syndrome (SARS) epidemic in Hong Kong. Int J Geriatr Psychiatry. 2008, 23:1231-1238. 10.1002/gps.2056
21. Batawi S, Tarazan N, Al-Raddadi R, et al.: Quality of life reported by survivors after hospitalization for middle east respiratory syndrome (MERS). Health Qual Life Outcomes. 2019, 17:101. 10.1186/s12955-019-1165-2
22. Phua DH, Tang HK, Tham KY: Coping responses of emergency physicians and nurses to the 2003 severe acute respiratory syndrome outbreak. Acad Emerg Med. 2005, 12:322-328. 10.1197/j.aem.2004.11.015
23. Senga M, Pringle K, Ramsay A, et al.: Factors underlying ebola virus infection among health workers, Kenema, Sierra Leone, 2014-2015. Clin Infect Dis. 2016, 63:454-459. 10.1093/cid/ciw327
24. China to investigate after whistleblower doctor dies from coronavirus. (2020). Accessed: March 15, 2020: https://www.npr.org/sections/goatsandsoda/2020/02/07/803680463/china-to-investigate-after-whistleblower-doctor-dies-f....
25. Park JS, Lee EH, Park NR, Choi YH: Mental health of nurses working at a government-designated hospital during a MERS-CoV outbreak: a cross-sectional study. Arch Psychiatr Nurs. 2018, 32:2-6. 10.1016/j.apnu.2017.09.006
26. Lung FW, Lu YC, Chang YY, Shu BC: Mental symptoms in different health professionals during the SARS attack: a follow-up study. Psychiatr Q. 2009, 80:107-116. 10.1007/s11126-009-9095-5
27. Chang HJ, Huang N, Lee CH, Hsu YJ, Hsieh CJ, Chou YJ: The impact of the SARS epidemic on the utilization of medical services: SARS and the fear of SARS. Am J Public Health. 2004, 94:562-564. 10.2105/ajph.94.4.562
28. Lin CY, Peng YC, Wu YH, Chang J, Chan CH, Yang DY: The psychological effect of severe acute respiratory syndrome on emergency department staff. Emerg Med J. 2007, 24:12-17. 10.1136/emj.2006.035089
29. Lemon SM, Hamburg MA, Sparling PF, Choffnes ER, Rapporteurs AM: Ethical and Legal Considerations in Mitigating Pandemic Disease: Workshop Summary. National Academies Press, Washington, DC; 2007. 10.17226/11917
30. Psychiatrists beware! the impact of COVID-19 and pandemics on mental health. (2020). Accessed: March 15, 2020: https://www.psychiatrictimes.com/psychiatrists-beware-impact-coronavirus-pandemics-mental-health/.
31. Aiello A, Khayeri MY, Raja S, et al.: Resilience training for hospital workers in anticipation of an influenza pandemic. J Contin Educ Health Prof. 2011, 31:15-20. 10.1002/chp.20096
32. Supporting media to bust harmful myths on coronavirus disease. (2020). Accessed: March 15, 2020: https://www.afro.who.int/news/supporting-media-bust-harmful-myths-coronavirus-disease.
33. Online training as a weapon to fight the new coronavirus. (2020). Accessed: March 15, 2020: https://www.who.int/news-room/detail/07-02-2020-online-training-as-a-weapon-to-fight-the-new-coronavirus.
34. Prevention of mental disorders. Effective interventions and policy options. (2020). Accessed: March 15, 2020: https://www.who.int/mental_health/evidence/en/prevention_of_mental_disorders_sr.pdf.
35. Lake J, Turner MS: Urgent need for improved mental health care and a more collaborative model of care. Perm J. 2017, 21:17-024. 10.7812/TPP/17-024
36. Everly GS Jr, Flynn BW: Principles and practical procedures for acute psychological first aid training for personnel without mental health experience. Int J Emerg Ment Health. 2006, 8:93-100.
37. Birkhead GS, Vermeulen K: Sustainability of psychological first aid training for the disaster response workforce. Am J Public Health. 2018, 108:381-382. 10.2105/AJPH.2018.304643
38. Everly GS Jr, Barnett DJ, Links JM: The Johns Hopkins model of psychological first aid (RAPID-PFA): curriculum development and content validation. Int J Emerg Ment Health. 2012, 14:95-103.

Author Information

Kaushal Shah, Dhwani Kamrai, Hema Mekala, Birinder Mann, *and* ***Rikinkumar S. Patel*** *are all from Psychiatry, Griffin Memorial Hospital, Norman, Oklahoma, USA. Kaushal Shah is also from Public Health, Western Kentucky University, Bowling Green, Kentucky, USA. Krishna Desai is from Internal Medicine, Kanakia Health Care, Mumbai, India.*

Ethics Statement and Conflict of Interest Disclosures

Conflicts of interest: *In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work*

Article Information

Copyright

Call for Papers!

Do you have a unique case report, original research, review, or commentary? *JDPA* is seeking submissions for publication consideration.

See full Information for Authors in this Issue–pages 22-23

Send your submissions to

jdpa@dermpa.org

ADVERTISER **INDEX**

- Leo Pharma, Inc. - *Enstillar* .....Cover 2
- SDPA - *Thank You*.....Page 7
- SDPA - *Join Today*.....Page 27
- SDPA Diplomate .....Page 30
- DermCast TV.....Page 37
- Galderma - *Cetaphil*.....Cover 4

For more information on advertising opportunities in the JDPA, please log on to www.dermpa.org/JDPA_About

#1 DERMATOLOGIST RECOMMENDED
FACIAL SKINCARE BRAND

#1 best-selling facial cleanser

Clinically proven 48-hour hydration

Cetaphil has been committed to sensitive skincare for over 70 years. To request coupons or samples, call 866-735-4137 option 4 or contact your Galderma sales representative.

www.Cetaphil.com

Cetaphil

GALDERMA