



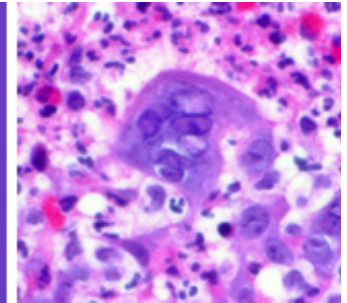
# eLITERATURE REVIEW

eMedicalDermatology Review

Podcast Issue

Presented by the Johns Hopkins University School of Medicine and the Institute for Johns Hopkins Nursing

Supported by Educational Grants from Abbott Laboratories, Astellas, Centocor Ortho Biotech Services, Intendis, Valeant Pharmaceuticals, Warner Chilcott



HOME CME/CNE INFORMATION PROGRAM DIRECTOR NEWSLETTER ARCHIVE EDIT PROFILE RECOMMEND TO A COLLEAGUE

## VOLUME 3 – ISSUE 2: TRANSCRIPT

### Featured Cases: Isotretinoin Updates

After participating in this audio activity, the participant will demonstrate the ability to:

- Identify factors that should be considered when deciding on an acne treatment,
- Evaluate various treatment options for acne patients, and
- Summarize the rationale for initiating efficacious acne treatment early in the disease.

This audio activity has been developed for clinicians caring for patients with dermatologic issues related to acne. You can also read the [companion newsletter](#). In this edition Dr. Zeichner will help expand our understanding of the use of isotretinoin for the treatment of acne, with the discussion of some typical case scenarios.

#### Unlabeled/Unapproved Uses

The author has indicated his presentation today will not include references to unlabeled or unapproved uses of drugs or products, with the exception of new investigations into photodynamic therapies for acne treatment.

#### MEET THE AUTHOR



#### Josh Zeichner, MD

Assistant Professor, Dermatology  
Mount Sinai School of Medicine  
Director of Cosmetic and Clinical Research  
Department of Dermatology  
New York, NY

#### Faculty Disclosure

Joshua Zeichner, MD has disclosed that he has received grants for clinical research and is a consultant to CORIA Laboratories. He also disclosed that he has worked as a consultant for and received honorarium from Galderma Laboratories, Ortho Dermatologics, PreCISION Dermatology, as well as a grant for research from Medicis Pharmaceutical Corp.

Release Date  
November 8, 2011

Expiration Date  
November 7, 2013

Next Issue  
December 13, 2011

#### PROGRAM DIRECTORS

**Buddy Cohen, MD, MBA**  
Professor, Dermatology Chief,  
Department of Dermatology  
The Johns Hopkins Medical  
Institutions  
Baltimore, MD

**Susan Matra Rabizadeh, MD, MBA**  
Department of Dermatology  
Cedars-Sinai Medical Group  
Beverly Hills, CA

**Mark Lebwohl, MD**  
Chairman, Department of  
Dermatology  
Mount Sinai School of  
Medicine  
New York, NY

**Elizabeth Sloand, PhD, CRNP**  
Assistant Professor  
Johns Hopkins University  
School of Nursing  
Baltimore, MD

**ACCREDITATION STATEMENTS**

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the Johns Hopkins University School of Medicine and the Institute for Johns Hopkins Nursing. The Johns Hopkins University School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

The Institute for Johns Hopkins Nursing is accredited as a provider of continuing nursing education by the American Nurses Credentialing Centers Commission on Accreditation.

The Institute for Johns Hopkins Nursing and the American Nurses Credentialing Center do not endorse the use of any commercial products discussed or displayed in conjunction with this educational activity.

**CREDIT DESIGNATIONS****Physicians**

Podcast: The Johns Hopkins University School of Medicine designates this enduring material for a maximum of 0.5 *AMA PRA Category 1 Credit(s)*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**Nurses**

Podcast: This 0.5 contact hour Educational Activity is provided by the Institute for Johns Hopkins Nursing. Each Podcast carries a maximum of 0.5 contact hours or a total of 3 contact hours for the six podcasts in this program.

**LAUNCH DATE**

This program launched on October 11, 2011 and is published bi-monthly; activities expire 2 years from the date of publication, ending in September 2014.

**POST-TEST**

To take the post-test for eMedicalDermatology Review you will need to visit the [Johns Hopkins University School of Medicine's CME website](#) or the [Institute for Johns Hopkins Nursing](#). If you have already registered for another Hopkins CME program at these sites, simply enter the requested information when prompted. Otherwise, complete the registration form to begin the testing process. A passing grade of 70% or higher on the post test/evaluation is required to receive CME/CNE credit.

**FACULTY DISCLOSURE**

As a provider accredited by the Accreditation Council for Continuing Medical Education (ACCME), it is the policy of Johns Hopkins University School of Medicine to require the disclosure of the existence of financial relationships with industry from any individual in a position to control the content of a CME activity sponsored by OCME. Members of the Planning Committee are required to disclose all relationships regardless of their relevance to the content of the activity. The Program Directors reported the following:

- **Bernard A. Cohen, MD** discloses that he has no financial relationship with commercial supporters.
- **Susan Matra Rabizadeh, MD, MBA** discloses that she has no financial relationship with commercial supporters.
- **Mark Lebwohl, MD** has disclosed that he has received grants for clinical research for/from Can-Fite Biopharma and Clinuvel. Serving as a consultant and receiving honorarium for/from Abgenomics, Allos, Amgen, Astellas, DermaGenoma, DermiPsor, Ethicon, Genentech, GlaxoSmithKline-Stiefel, Glenmark Pharmaceuticals, HelixBioMedix, Janssen Ortho Biotech, LEO Pharmaceuticals, Novartis, Nycomed, Onset Therapeutics, Pfizer, Valeant Pharmaceuticals.
- **Elizabeth Sloand, PhD, CRNP** discloses that she has no financial relationship with commercial supporters.

**STATEMENT OF RESPONSIBILITY**

The Johns Hopkins University School of Medicine takes responsibility for the content, quality and scientific integrity of this CME/CE activity. Johns Hopkins University School of Medicine take responsibility for the content, quality and scientific integrity of this CME activity.

**INTENDED AUDIENCE**

This activity has been developed for the dermatologist, nurses, dermasurgeon, dermatopathologist, pediatric dermatologist, Immunodermatologist, wound care specialist and allied healthcare providers.

**CONFIDENTIALITY DISCLAIMER FOR CME CONFERENCE ATTENDEES**

I certify that I am attending a Johns Hopkins University School of Medicine CME activity for accredited training and/or educational purposes.

I understand that while I am attending in this capacity, I may be exposed to "protected health information," as that term is defined and used in Hopkins policies and in the federal HIPAA privacy regulations (the "Privacy Regulations"). Protected health information is information about a person's health or treatment that identifies the person.

I pledge and agree to use and disclose any of this protected health information only for the training and/or educational purposes of my visit and to keep the information confidential.

I understand that I may direct to the Johns Hopkins Privacy Officer any questions I have about my obligations under this Confidentiality Pledge or under any of the Hopkins policies and procedures and applicable laws and regulations related to confidentiality. The contact information is: Johns Hopkins Privacy Officer, telephone: 410-735-6509, e-mail: [HIPAA@jhmi.edu](mailto:HIPAA@jhmi.edu).

"The Office of Continuing Medical Education at the Johns Hopkins University School of Medicine, as provider of this activity, has relayed information with the CME attendees/participants and certifies that the visitor is attending for training, education and/or observation purposes only." For CME Questions, please contact the CME Office at (410) 955-2959 or e-mail [cmenet@jhmi.edu](mailto:cmenet@jhmi.edu).

For CME Certificates, please call (410) 502-9634.

Johns Hopkins University School of Medicine  
Office of Continuing Medical Education  
Turner 20/720 Rutland Avenue  
Baltimore, Maryland 21205-2195

Reviewed & Approved by:  
General Counsel, Johns Hopkins Medicine (4/1/03)  
Updated 4/09

**INTERNET CME POLICY**

The Office of Continuing Medical Education (CME) at the Johns Hopkins University School of Medicine is committed to protecting the privacy of its members and customers. Johns Hopkins University SOM CME maintains its Internet site as an information resource and service for physicians, other health professionals and the public.

Continuing Medical Education at the Johns Hopkins University School of Medicine will keep your personal and credit information confidential when you participate in a CME Internet-based program. Your information will never be given to anyone outside the Johns Hopkins University School of Medicine's CME program. CME collects only the information necessary to provide you with the services that you request.

**DISCLAIMER STATEMENT**

The opinions and recommendations expressed by faculty and other experts whose input is included in this program are their own. This enduring material is produced for educational purposes only. Use of Johns Hopkins University School of Medicine name implies review of educational format design and approach. Please review the complete prescribing information of specific drugs or combination of drugs, including indications, contraindications, warnings and adverse effects before administering pharmacologic therapy to patients.

**HARDWARE & SOFTWARE REQUIREMENTS**

PC: Internet Explorer (v6 or greater), or Firefox  
MAC: Safari

**MR. BOB BUSKER:** Welcome to this *eMedicalDermatology Review* podcast. *eMedicalDermatology Review* is presented by the Johns Hopkins University School of Medicine and the Institute for Johns Hopkins Nursing. This program is supported by educational grants from Abbott Laboratories, Astellas, Centocor Ortho Biotech Services, Intendis, Valeant Pharmaceuticals, and Warner Chilcott.

Today's program is a companion activity to the October 2011 *eMedicalDermatology Review* newsletter topic: Isotretinoin Update.

Our guest is Doctor Joshua Zeichner, from the Mt. Sinai Medical Center in New York.

This activity has been developed for dermatologists, nurses, dermasurgeons, dermatopathologists, pediatric dermatologists, immunodermatologists, wound care specialists and allied healthcare providers caring for patients with dermatologic conditions. There are no fees or prerequisites for this activity.

The Accreditation and Credit Designation Statements can be found at the end of this podcast. For additional information about accreditation, Hopkins policies, expiration dates, and to take the post-test to receive credit online, please go to our website newsletter archive — [www.emeddermreview.org](http://www.emeddermreview.org) — and click on the November 2011 podcast link.

Learning objectives for this audio program are — that after participating in this activity — the participant will demonstrate the ability to:

- Identify factors that should be considered when deciding on an acne treatment,
- Evaluate various treatment options for acne patients, and
- Summarize the rationale for initiating efficacious acne treatment early in the disease.

---

I'm **BOB BUSKER**, managing editor of e-medical dermatology review. On the line we have with us our November newsletter issue's author — Doctor Joshua Zeichner is Director of Cosmetic and Clinical Research in the Department of Dermatology, and Assistant Professor of Dermatology, at the Mount Sinai School of Medicine in New York City.

Doctor Zeichner has disclosed that he has received grants for clinical research and/or is a consultant to CORIA Laboratories. He has also worked as a consultant for — and received honoraria from — Galderma Laboratories, Ortho Dermatologics, PreCISION Dermatology, and has received a grant for research from Medicis Pharmaceutical Corporation.

His presentation today will not include references to unlabeled or unapproved uses of drugs or products, with the exception of new investigations into photodynamic therapies for acne treatment.

Dr. Zeichner — welcome to this *eMedicalDermatology Review* podcast.

**DR. ZEICHNER:** Thanks so much, Bob, I'm glad to be here.

**MR. BUSKER:** In the newsletter issue, you reported on current investigations into isotretinoin dosing regimens, including dose-related adverse events, lipid abnormalities, and depression problems. Today we'd like to discuss how that information can impact treatment in the exam room. So if you would, Doctor — start us out with a typical case scenario.

**DR. ZEICHNER:** So let's say you have a patient who is 22 years old, a Caucasian male, with a five-year history of severe nodulocystic acne who comes into your office. He tells you that he was treated in the past with over the counter benzoyl peroxide containing topical creams. He has never seen a dermatologist before this visit and he is looking for treatment for the acne he has on his face.

When you take a look at him on physical examination, the patient's temples and cheeks are covered with depressed flesh colored papules. In addition, he has scattered open comedones on his forehead, nose, cheeks and chin, and the chest and the back are clear.

He's currently on no medications, has no significant past medical history, and has no medication allergies, and he reports that he feels feelings of depression because of scarring that he has on his face.

**MR. BUSKER:** Break it down for us if you would, Doctor — what are the most pertinent factors about this case?

**DR. ZEICHNER:** It's really important to note in this particular case that the patient has significant scarring, but mild acne. And when not treated appropriately and not early enough, some patients can develop significant scarring, even from mild acne. It's really important for patients to come to see the dermatologist to get appropriate treatment so that they don't develop scarring like this.

There are several treatment options available for scarring and we'll talk about that in a little bit, but the most important thing is to treat the acne that the patient has and educate the patient that he only has mild acne which is treatable, but the other spots are a result of old acne that he has.

In terms of treatment options for mild acne, I usually start out with topical medication. And the Global Alliance recommendations include topical medications such as retinoids for mild acne. For some patients we use combination therapy with topical medications such as the topical retinoids, in conjunction with topical antibiotics and benzoyl peroxide, and they can be quite effective. But you need to educate patients on how to use them, educate patients on potential side effects such as irritation, and educate patients that it takes time for all of these medications to start working.

For the most part, these medications are not going to treat the scars, as I said before, the scars are permanent.

**MR. BUSKER:** Let's focus for a moment on his scarring. What are the options to help this patient?

**DR. ZEICHNER:** First line therapy for acne scarring right now for me are laser treatment. Scars are caused by damage to the skin, and when the skin heals up the collagen is laid down in a way that is different from the normal collagen. So laser treatments such as fractionated, nonablative lasers, are able to essentially punch teen little holes or drill little holes in the skin. And as those holes heal back up in a controlled way the collagen is laid down in a way that is closer to the way that it was before, and you can really improve the appearance of depressed scarring.

Some patients develop hypertrophic or thick scars. A lot of these patients require intralesional cortisones to help bring down the size of the scars. Other patients develop keloids, which are very large scars, which actually extend beyond the original border of the

damage to the skin, and there are some patients that are genetically predisposed to developing these types of scars. And some of these patients may require surgical options.

**MR. BUSKER:** What might have been done to prevent scarring in this patient? I presume one of the most important things would have been to seek treatment from the dermatologist earlier in the process, yes?

**DR. ZEICHNER:** I agree. It's really important for patients with acne to get professional help. While some of the medications that are available over the counter are quite effective, they really don't work for everybody. And some patients do require systemic or oral medications for their acne to get them under control, especially patients who have nodules and cysts, because frequently those heal up with permanent scarring that can be disfiguring and lead to psychosocial impairment. So especially if you have big, red, angry and painful pimples, it's important to go to the dermatologist to save you permanent scarring and potentially expensive cosmetic laser treatments to improve the appearance of it later.

**MR. BUSKER:** Now you noted that this patient is depressed because of his facial scarring. And that's certainly understandable. But what about any increase in depression that may occur due to his treatment?

**DR. ZEICHNER:** There have been several studies that have linked depression to acne as well as acne treatment. There has been a reported association between oral isotretinoin treatment and depression, and there also have been studies that have shown that the acne, itself, is the risk factor for depression in some patients. Not only does the acne interfere with personal interactions when it's active, but when it heals up and leaves marks on the face it can also significantly interfere with psychosocial interaction.

It's important to monitor patients for depression during treatment and after treatment, especially for the patients who have scars, you may have cleared up their acne, but they still have marks on their face, and this is really the responsibility of the dermatologist, the primary care doctor or the pediatrician, parents, other family members and friends. And we need to educate patients what are realistic expectations in terms of treatment and what we realistically can do to improve the appearance of scars once they have occurred.

**MR. BUSKER:** Thank you, Dr. Zeichner, for presenting that case. Would you describe another patient for us, please.

**DR. ZEICHNER:** Let's talk about a 16 year old female who presents to your office with a two month history of painful, red nodules on her face and on her back. She has whiteheads and blackheads on her face which she says have been there for the past year. She has been getting treated with topical prescription acne medications, but she feels that her acne is getting worse.

When you take a look at her skin on physical exam, you see that her cheeks and chin are covered in flesh colored papules and she has erythematous nodules and cysts. She also has erythematous nodules and open and closed comedones on her back and she has a single depressed scar on her left cheek. She is otherwise healthy and she is on no medications. She reports that her periods are regular and she has no abnormal hair growth on the face or on the chest.

**MR. BUSKER:** Once again, Doctor: summarize for us the pertinent factors in this case.

**DR. ZEICHNER:** When evaluating this patient there are a couple of key points that you need to take into consideration. First of all, she has inflammatory cystic acne, she doesn't just have blackheads and whiteheads. The acne is affecting not only her face, but it's on her trunk, as well, and this is a patient who already has evidence of scarring on her cheek. This is a patient that you would want to treat aggressively with a systemic medication to treat the pimples that she has and prevent scarring in the future.

One other key point in this particular case is that the patient reports that her menstrual periods are normal, there are no flares before the period, and she has no abnormal hair growth on her face or on her chest. So this really suggests that there is not a hormonal imbalance here. However, it is still important to check the hormone levels to be sure.

**MR. BUSKER:** All right: she's sixteen years old, she's got a two-month history, no hormonal imbalances, and she's come in early in the process for treatment. What is the most appropriate first line therapy for this patient?

**DR. ZEICHNER:** For me, first line therapy really would be a combination of topical and a systemic

medication. I don't think the topical medications are enough for this patient, especially because she has nodulocystic acne. This is the type of patient that I would think about starting isotretinoin.

Because of the regulations for starting isotretinoin using the IPLEDGE system, unfortunately oftentimes there's a lag between the time that you would like to start the medication and when you are actually able to do it. So for that reason, I would initially start this patient out on a combination of topical medications that contain topical retinoids, benzoyl peroxide, and possibly a topical antibiotic. In addition, I would put the patient on an oral antibiotic, either doxycycline or minocycline. I would counsel the patient on isotretinoin, most likely if the patient agreed to go on it, get her registered that day and prepare for that course of treatment.

You actually cannot be on certain antibiotics at the same time as you are on isotretinoin, so I would discontinue the oral antibiotic when we actually did start the isotretinoin in the future.

**DR. ZEICHNER:** There are several steps that you need to take in order to start a patient on isotretinoin. The patient needs to be registered into the IPLEDGE system which is a government regulated system for patients who are on isotretinoin. Female patients of childbearing potential have to be on two forms of birth control, most commonly for my patients that's an oral contraceptive pill, as well as a male condom. You need to have the patient sign a consent form and really go through all of the potential risks and benefits of this medication.

It's an excellent medication, but does have potential side effects, and we do live in a litigious society where there are advertisements on television for patients who have been on this medication to sue their doctor if they had an adverse event. So for me it's really very important to educate my patients on the potential side effects.

**MR. BUSKER:** Doctor, thank you for that clarification. I'd like to focus now on isotretinoin specifics. First question: how would you dose that agent in this patient?

**DR. ZEICHNER:** When you dose isotretinoin, the target cumulative dose is typically between 120 and 150 mg/kg. I typically start patients out at about 0.5 mg/kg, sometimes that's around 30 or 40 mg once a day. After about a month if they're doing okay, then

usually I'll increase the dose to 1 mg/kg, in some patients I'll wait two months or three months, it really depends on the particular patient.

The total course of therapy depends on your monthly dose. So for some patients it's five months, other patients six months. And one other thing that is really important, especially in patients with severe acne, is that once you start the isotretinoin medication, sometimes the patient's skin can significantly flare up and become very, very inflamed. So for some severe patients I actually will start out the patients on oral prednisone at the same time as the isotretinoin, and keep them on the prednisone for maybe around a month or so. And the dosing of prednisone depends on the patient, usually between 40 and 60 mg, sometimes I'm actually going up on a high dose and then tapering down.

**MR. BUSKER:** As you just noted, this treatment can engender some side effects. What should the clinician be on the lookout for?

**DR. ZEICHNER:** As I mentioned before, isotretinoin is an excellent medication, but does have some potential serious side effects. Some of them are rare, some of them are more common, but it's really important to go over all of these things with your patient.

So number one, patients are going to get dry. Their skin is going to get dry, their mucous membranes are going to get dry. I tell patients to buy some Chapstick or some Vaseline and put it on their lips whenever they need. Some patients are putting on Chapstick 20 times a day. They can use a moisturizer on the skin. Sometimes the patients develop eczema because the skin is so dry, we need to moisturize and in some cases we actually treat it with topical cortisone.

Other concerns, in some patients they do develop an increase in their cholesterol. This has been shown to be most likely patients who have a genetic susceptibility to high cholesterol, but it is really important to watch it. And if the cholesterol levels raise significantly, you may need to decrease your dose or totally stop treatment with isotretinoin.

We talked a little bit before about depression as it relates to acne, acne scarring and acne treatment. There is a questionable association between depression and isotretinoin treatment. So I do discuss with all patients the possibility of depression.

If at any point during their course of treatment they do feel feelings of depression or feelings of wanting to commit suicide, they need to let me know right away and they need to stop their medication, and I ask them about it every time they come into the office.

The major issue with isotretinoin is that it's a potential teratogen. Female patients have to be on two forms of birth control, and I tell patients before we start that if they do get pregnant I will recommend that the patient terminate the pregnancy if they are on isotretinoin when they get pregnant.

Another potential side effect is the development of pseudo tumor cerebri. Patients can get headaches. Patients can get increased intracranial pressure. Patients cannot be on minocycline or doxycycline at the same time as they're on isotretinoin because those medications increase the risk of developing pseudo tumor.

And the last potential side effect that I discuss with all patients is the risk of inflammatory bowel disease. This is a very controversial subject right now. It is the subject of many lawsuits against doctors, but there is a potential association between isotretinoin treatment and ulcerative colitis.

There were recently two major studies, one showed that there is no correlation between isotretinoin and Crohn's disease or ulcerative colitis, and another study showed that there was an association between isotretinoin use and ulcerative colitis, but not Crohn's disease.

We don't have the answer to this question, but it is just important to inform patients of this potential risk so that they can truly make an informed consent and informed decision before starting the medication.

**MR. BUSKER:** Thank you, Doctor. And we'll return with Dr. Josh Zeichner, from the Mount Sinai School of Medicine, in just a moment.

**MR. BUSKER:** Welcome back to this eMedical Dermatology Review podcast. I'm Bob Busker, managing editor. Our guest is Dr. Josh Zeichner, Director of Cosmetic and Clinical Research in the Department of Dermatology at the Mount Sinai School of Medicine. And our topic is the use of isotretinoin in acne.

We've been looking at case scenarios to explore how the information Dr. Zeichner reviewed in his newsletter issue can best be applied in the exam room. So if you would, doctor, please present us with another patient.

**DR. ZEICHNER:** So now let's talk about a 19 year old male who has a history of severe nodulocystic acne who comes into your office. When you speak to him you find out that he just finished a six month course of isotretinoin approximately one year ago. His skin totally cleared while he was on the medication but began to flare up again maybe around three months after finishing his course of therapy.

He had been using prescription topical acne medications in combination with oral antibiotics for the past several months and he reports being adherent to the regimen, but he continues to break out with painful nodules on both his face, his chest and his back.

On physical examination he has inflammatory nodules and cysts on his face and on his trunk, and he does have mild scarring on his face. The patient's otherwise healthy and is on no other medications.

**MR. BUSKER:** Summarize for us, doctor, the pertinent factors in this case.

**DR. ZEICHNER:** This is a case which is not uncommon of a patient who has been on a course of isotretinoin and clears, but then the acne comes back. There are a lot of patients who are in this situation and oftentimes they require another course of isotretinoin therapy.

**MR. BUSKER:** So in your opinion, the best treatment for this patient?

**DR. ZEICHNER:** In treating this patient I would discuss with him another course of isotretinoin. Clearly, the oral antibiotics and the topical medications that he's using are not doing the job. He has some mild scarring already on the face. He did well before and I expect him to do well again on oral isotretinoin.

There are several reasons that patients flare up after a course of isotretinoin, and there have been some recent studies that have shown that patients who are on a lower dose of isotretinoin in their first course do have a higher risk of needing to be retreated

compared to patients who were initially on a higher dose of isotretinoin.

**MR. BUSKER:** A second course of isotretinoin — how common might that be needed, and what does the clinician specifically need to know about it?

**DR. ZEICHNER:** Well I don't have specific numbers or percentages. I will say that it is not uncommon for patients to come in requiring a second course of isotretinoin, and the second course should be the same exact process that you went through for the first course. Again, a five to six month treatment period typically with a cumulative dose of 120 to 150 mg/kg, or sometimes I will go a little bit higher, especially in these patients who are requiring retreatment.

**MR. BUSKER:** Do most patients clear with two courses? Do some patients need additional courses of isotretinoin? What's been your experience with that?

**DR. ZEICHNER:** Most of my patients who did not respond after the first course of therapy do do well after their second course of treatment, but there have been some patients that I actually have put on a third course of isotretinoin. These courses are not necessarily back to back, sometimes they're several years apart, but there are some patients who require more. And currently we don't understand who these patients are or why they do not respond to one treatment or to a lower course of treatment compared to other patients who do respond and don't require as high doses.

**MR. BUSKER:** I think we've got time for one more case, so if you would, Doctor.

**DR. ZEICHNER:** So let's talk about one more case here. This is a 33 year old female who complains of acne on her face for the past 4 years. She says that she never had acne when she was a teenager, and she is very upset by the way her skin looks. She reports that her face breaks out the week before her period every month and she's been using an over the counter benzoyl peroxide containing face wash as her sole treatment, but it hasn't been working.

On physical exam, she has erythematous papules and pustules, primarily along the jaw line, there is no evidence of scarring. She is otherwise healthy. She is on no medications, and she is on no oral contraceptive pill, and she does not report a history of abnormal hair growth on the face or on the chest.

**MR. BUSKER:** So this looks like female post adolescent acne. What are the main features of that condition?

**DR. ZEICHNER:** The main features of female post adolescent acne are a predominance of lesions on the jaw line and the neck, typically on the lower one-third of the face. The breakouts are worse right before the period each month, and there are two main subtypes of female post adolescent acne. There's the comedonal type and the papulopustular type, comedonal being more noninflammatory, open and closed comedones which have blackheads and whiteheads, and the papulopustular types, which are usually red bumps and puss pimples.

A recent study showed that the comedonal subtype was most commonly associated with cigarette smoking.

**MR. BUSKER:** Talk to us about the treatment options for this condition.

**DR. ZEICHNER:** In post adolescent females with acne, one common type of treatment is a hormonal therapy. Typically the breakouts are related to hormonal changes in the skin and we can take advantage of that by regulating these hormones.

Two of the most common medications that we use are oral birth control pills and spironolactone, which is actually a high blood pressure medication.

One of the reasons that women are breaking out is because of an increase in androgens in the body. These hormones stimulate sebaceous glands to make more oil and in some patients who are predisposed to developing acne, the increased oil production leads to acne breakouts. And this is cyclical and occurs with the changes in hormones in a woman's menstrual cycle.

Clearly, we can't use these hormonal treatments in men because they don't have the same type of hormonal breakouts that women have from their periods. That being said, in the European literature there was a recent study evaluating a topical anti-androgen gel for men with acne.

**MR. BUSKER:** Is isotretinoin appropriate in these patients?

**DR. ZEICHNER:** Traditional acne medications are appropriate in females with post adolescent acne. In

patients with severe nodules and cysts along the jaw line, I would consider starting isotretinoin, it really depends on how severe the patient's case is. Separate from that, I certainly do use oral antibiotics and other traditional topical acne medications including topical antibiotics, benzoyl peroxide and retinoids. There is another product on the market currently which is a topical dapsone preparation, and in subset analysis from some of their clinical trials, topical dapsone was shown to be particularly effective in this subgroup of patients, post adolescent females with acne in the lower one-third of the face.

**MR. BUSKER:** Tell us more about spiro-ono-lactone, if you would.

**DR. ZEICHNER:** Spironolactone is actually a medication used to treat hypertension or high blood pressure. It has anti-androgen effects, which explains its use in acne patients. The two main side effects are breast tenderness and irregular periods. There are some patients who are on this, but not birth control pills, and there are some patients who are on spironolactone at the same time that they are on birth control pills. You don't have to worry about menstrual irregularities in patients who are concurrently on an oral contraceptive pill because that takes care of the hormone levels and the periods.

Spironolactone is typically dosed between 50 mg/day or as high as 200 mg/day and these can be given all at once or in divided doses. Patients need to be counseled that they should not become pregnant because the fetus can have birth defects. And one other potential side effect is a risk for hyperkalemia which are high potassium levels in the body. This is really more of a risk when patients are on this medication at much higher doses for high blood pressure and there have been studies showing that at low levels like the ones that we use to treat acne, there really is no issue with hyperkalemia. That being said, I tell patients no more than one banana per day when they are taking spironolactone.

**MR. BUSKER:** You've mentioned using birth control pills for treatment of female post adolescent acne. What's the mechanism behind that?

**DR. ZEICHNER:** Besides regulating the hormones, birth control pills work in the treatment of acne by increasing levels of sex hormone binding globulin. Sex hormone binding globulin binds to testosterone, and if there is more bound testosterone that means

that there is less free testosterone. And it's the free testosterone that affects the oil glands in the skin.

Currently there are four brand name oral contraceptive pills specifically approved for the treatment of acne; however, in my personal experience, I find that many of the birth control pills do help acne regardless.

**MR. BUSKER:** Doctor, just as a general wrap up, is there anything new in acne treatment that our listeners should be aware of?

**DR. ZEICHNER:** One hot topic now in acne therapy is the use of something called photodynamic therapy. So in photodynamic therapy there is a photo active molecule that is placed on the skin and it's left to incubate there and be absorbed into the sweat gland. After a variable amount of time the patients are exposed to a light source that then activates that photosensitive molecule and this process acts like a smart bomb. And when the photo active molecule is put in contact with the light, there is an inflammatory reaction that can improve acne.

This has been shown to work for acne for several different reasons. Number one, there is an anti-inflammatory effect. Number two, I may be able to shrink or totally destroy some of the sweat glands and lower oil production. And number three, it's been shown to kill the bacteria, *P. acnes*, that has been associated with the development of acne. This is a treatment that is more appropriate for patients with inflammatory acne rather than non inflammatory comedonal acne, and recent work in Boston has shown that intense photodynamic therapy may actually be a therapy that can work in patients who are candidates for isotretinoin but can't take it for one reason or another.

**MR. BUSKER:** Doctor Joshua Zeichner, from the Mt Sinai Medical Center in New York, thank you for being part of this eMedical Dermatology Review podcast.

**DR. ZEICHNER:** Great, thanks so much for having me.

**MR. BUSKER:** This Podcast is presented in conjunction with eMedical Dermatology Review, a peer-reviewed CME and CNE -accredited literature review e-mailed monthly to clinicians treating dermatologic patients.

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the Johns Hopkins University School of Medicine and the Institute for Johns Hopkins Nursing.

The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education to physicians.

For Physicians, the Johns Hopkins University School of Medicine designates this educational activity for a maximum of 0.5 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should only claim credit commensurate with the extent of their participation in the activity.

For Nurses, this 0.5 contact hour Educational Activity is provided by The Institute for Johns Hopkins Nursing. Each podcast carries a maximum of 0.5 contact hours.

This educational resource is provided without charge, but registration is required. To register to receive eMedicalDermatology Review via e-mail, please go to our website: [www.eMedDermReview.org](http://www.eMedDermReview.org).

The opinions and recommendations expressed by faculty and other experts whose input is included in this program are their own. This enduring material is produced for educational purposes only.

Use of the Johns Hopkins University School of Medicine name implies review of educational format, design, and approach. Please review the complete prescribing information of specific drugs, combination of drugs, or use of medical equipment — including indications, contraindications, warnings and adverse effects — before administering therapy to patients.

Thank you for listening.

eMedicalDermatology Review is supported by an educational grant from Abbott Laboratories, Astellas, Centocor Ortho Biotech Services, Intendis, Valeant Pharmaceuticals, and Warner Chilcott.

This program is Copyrighted with All rights reserved by the Johns Hopkins University School of Medicine.