

What's in the journals

(Ones you might have missed and latest trends)

JoAnn See, Dermatologist at Central Sydney Dermatology

Dr See is a dermatologist in private practice in Sydney. She lectures internationally on acne and skin care. She is a member of the International Global Alliance to Improve Outcomes in Acne. Dr See has curated a list of some of the most interesting or notable research recently published internationally on acne.



Guide to treating acne in people receiving masculinising hormone therapy

Researchers have outlined a practical guide for treating testosterone-induced acne in transmasculine patients. Acne is one of the most common adverse effects among transmasculine people who are undergoing testosterone therapy and can lead to poor body image, mental health, and have a significant impact on quality of life.

"Specific training and awareness are needed for a clinically and culturally competent encounter while providing care for transgender patients," **Rakan Radi and colleagues** write in the American Journal of Clinical Dermatology.

"While gender-affirming hormone therapy has been shown to improve quality of life and reduce anxiety and depression symptoms, it should not be assumed that their adverse cutaneous effects, such as acne, are transient or innocuous. Subjective severity of acne has correlated directly with symptoms of anxiety and depression. Visible acne lesions or acne scars can be stigmatising, especially for patients who struggle with body image disorders."

The US researchers give recommendations on creating a welcoming clinical setting, taking a gender-inclusive history, and conducting a patient-centered physical examination relevant to acne care. They also discuss the assessment of reproductive potential before prescribing acne treatment with teratogenic potential, and interactions between acne treatments and gender-affirming therapies.

"Dermatologists have an important role in advocating for comprehensive and culturally competent healthcare," the researchers write.

Endnote reference 1

Light and laser treatments are effective for the treatment of post-acne erythema

A review into light and laser treatments for post-acne erythema has found them to be effective. Skin redness, known as post-acne erythema, can persist for several months after acne treatment and can be distressing for patients and difficult to conceal with make-up. The review, published in the Journal of Cosmetic Dermatology, evaluated the efficacy of light and laser treatments in acne-induced erythema.

Rezvan Amiri and colleagues included 12 randomised clinical trials that evaluated laser or light treatment for post-acne erythema. The treatments included pulsed dye laser (PDL), intense pulsed light (IPL), Q-switched neodymium-doped yttrium aluminum garnet (QS Nd:YAG), fractional photothermolysis, alexandrite, solid-slate 589-1319 nm, and pro-yellow laser. The researchers, from the Kerman University of Medical Sciences in Iran, concluded: "Light and laser treatments are effective treatment modalities in reduction of acne-induced erythema along with active acne lesions and atrophic acne scars." *Endnote reference 2*



Dietary supplement provides promising complement treatment

Researchers have tested the efficacy of a dietary supplement containing probiotics and botanical extract in subjects with mild to moderate acne and found these could represent a valid adjunctive therapeutic approach to treatment.

Fabio Rinaldi and co-authors wrote that "treatments other than topical and systemic antibiotics are needed to restore the dysbiosis correlated with acne onset and evolution".

They tested probiotics Bifidobacterium breve BR03 DSM 16604, Lactocaseibacillus casei LC03 DSM 27537, and Ligilactobacillus salivarius LS03 DSM 22776, and botanical extract lupeol from Solanum melongena L. and Echinacea extract in test subjects over an 8-week study period.

The researchers found a "significant" ($p < 0.05$) effect on the number of superficial inflammatory lesions reported in the study groups that weren't taking the placebo.

A significant decrease in mean desquamation score, sebum secretion rate, and porphyrin mean count versus baseline was also reported, particularly for the group taking the study agent.

"The results from this study suggest that the administration of the dietary supplement under study was effective, safe, and well tolerated in subjects with mild to moderate acne and could represent a promising optional complement for the treatment of inflammatory acne as well as for control of acne-prone skin," the authors concluded.

Endnote reference 3



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Highlights from the Australasian College of Dermatology's Annual Scientific Meeting

Dr Phillip Tong, Dermatologist, Sydney

Dr Phillip Tong is a dermatologist in private practice in Sydney's eastern suburbs, a visiting specialist at St Vincent's Hospital, and the Deputy Director of Research at The Skin Hospital.

Here he selects some presentations of interest that were recently presented at the Australasian College of Dermatology's ASM held in Adelaide in April/May 2022.



Practice uncertainties found in comparing Australian isotretinoin use

Dermatologists have compared Australian isotretinoin practice against best available evidence and guidelines from the UK, Europe and USA, identifying any areas of practice uncertainty.

Isotretinoin is indicated for moderate-to-severe acne vulgaris but can have adverse effects such as teratogenicity and hepatitis. Guidelines for its use do not exist in Australia, with the Australasian College of Dermatologists' position statement on isotretinoin in 2018 the latest reference point.

Researchers conducted an anonymous, online survey of 118 Australian dermatologists which included daily dosing, initiation and monitoring investigations, and mental health surveillance.

They found an initiation dose of isotretinoin of 10 or 20mg daily was prescribed by 61.2% of dermatologists.

"Pregnancy was excluded prior to commencement with serum beta-hCG by 91.4%," Nicholas Manuelpillai and Emma Veysey wrote in their study.

"Serum lipids and liver function tests (LFT) were checked prior to commencement by 78% and 90.5% of dermatologists respectively.

"Serum lipids and LFT were monitored by 68.2% and 77.3% respectively of dermatologists during treatment. Baseline mental health status was assessed prior to treatment by 79.3% of dermatologists, and 85.6% of clinicians directly inquired about mental health during the treatment."

The researchers concluded divergence from audit points was evident in daily dosing, treatment endpoint and monitoring investigations. "Areas of practice uncertainty and future research identified included treatment duration, dose escalation and weaning of isotretinoin," they said.

Endnote reference 4

Why acne is a side affect of JAK inhibitors

Research is underway to better understand why acne occurs when using JAK inhibitors to treat atopic eczema



New studies are attempting to understand why acne occurs when using JAK inhibitors to treat patients with atopic eczema.

Professor George Varigos says as doctors move to treat atopic eczema patients with these new therapies, it is important to advise patients but also understand the pathogenesis that may explain the clinical occurrence.

Acne has been a side effect published in the recent clinical trials of JAK Inhibitors treating patients with atopic eczema.

"It may also be relevant that in rheumatological trials of the same JAK inhibitors the presentation of acne was not as common as in the atopic trials," Professor Varigos says.

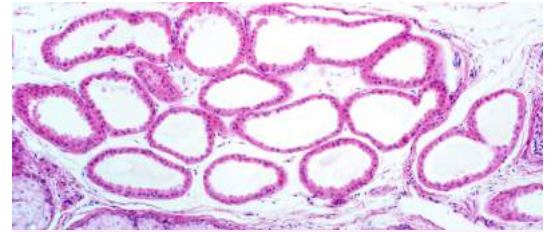
"The finding recently of the skin Innate Lymphoid cells (ILCs) residing in the skin are heterogenous and having functions which play roles in homeostasis of the skin microbiome and also epidermal and appendage functions may be significant."

Prof Varigos says ILCs play critical roles in host protective immunity such as the regulation of barrier and microbial homeostasis, metabolism, and tissue repair.

He has looked at how JAK inhibitors affect the pathways of cytokines involved in the atopic pathology but how they also have consequences on the ILC function and subsequent effects.

"The ILCs may be an explanation for the appearance of acne in these JAK inhibitor clinical trials but not forgetting that there is redundancy or complexity in the system," he says.

Endnote reference 5



'Interesting scenario' in isotretinoin use and higher lipids

Researchers are delving into whether isotretinoin is reducing the loss of fat through the skin, explaining why a patient has raised lipids.

Professor George Varigos explains sebaceous glands secrete a lipid rich sebum which functions in the skin as maintaining the microbiome, skin integrity, thermoregulatory and UV protection.

"These glands play a pivotal role in secreting a variety of lipids and cellular products, antimicrobial peptides and forming an important immune protective barrier," he says.

"Recent evidence is pointing to the increase in sebaceous activity, as a mobilisation of lipids from fat containing tissues.

"An important cytokine, Thymic Stromal Lymphopoietin (TSLP), modulates the sebum secretion and in animal studies, the energy used is sufficient to cause significant loss of white adipose tissue and loss of weight."

Prof Varigos says the research is showing TSLP over expression results in smaller sebaceous glands with an increase in sebocyte turnover and a result of increase in progenitor cells.

"The consumption of lipids from tissues has been evidenced with these sebaceous glands, illustrating another important aspect of the sebaceous gland function," he says.

Doctors who treat patients with the isotretinoin or Vit A eventually reduce the size and activity of sebaceous glands, measured clinically by reduced acne and surface dryness. "However the common occurrence of elevation of lipids in 10 to 40% of these patients, which often correlates with effectiveness of treatment, may be otherwise explained by this new understanding of sebaceous gland and lipid mobilisation," Prof Varigos says.

"As we measure these lipids ongoing and find that those patients with elevation, on isotretinoin, are the ones who eventually have higher lipids in adult life, is an interesting scenario."

Endnote reference 6

Acnatrac
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We're changing the face of acne treatment¹⁻⁵

The only acne treatment in Australia with the **fixed-dose** combination of an antibiotic and retinoid in an **easy-to-use, BPO-free** gel that works to improve acne.¹⁻⁵



Before prescribing, please review approved product information available via medicines.org.au/i/view/gopacnatP

PBS Information: This product is not listed on the PBS.

References: 1. Acnatrac® Product Information. 2. Dreno B et al. *Eur J Dermatol* 2014; 24(2):201-9. 3. Ochsendorf F. *J EADV* 2015;29(Suppl.5),8-13 4. Leyden JJ, Wortzman M. *Cutis* 2008;82:151-6. 5. Yentzer BA et al. *Cutis* 2010;86:103-8.

Viatrix Pty Ltd. Millers Point, NSW. ACN-2021-0113. July 2021. **BPO**, benzoyl peroxide.

What next? Let's explore acne maintenance therapy

Dr Jo-Ann See

Patients and doctors often have concerns regarding treating anything long-term, but acne is a chronic disease, often episodic and can persist for years.

Once your patient is clear of acne, how do you keep them clear? Patients often need reassurance that treatment is safe and can be used long-term, especially as oral antibiotics should be only used for three months when necessary.

A recent study called SATISFY showed the newest topical retinoid, trifarotene, can be used safely and effectively for 52 weeks.¹

Another study by Poulin³ showed adapalene plus BPO not only prevented relapse among patients with severe acne, but continued to reduce disease symptoms with six months of maintenance therapy. Maintenance therapy was popularised 15 years ago.²

Another study by Bettoli⁴ showed adapalene plus BPO could be used safely as maintenance therapy for 12 months after patients were cleared with oral isotretinoin. The study aimed to prevent recurrences after treatment ceased. These studies show a fixed-dose combination can be used as maintenance for 12 months. We can assume the newest retinoid, trifarotene, will act in a similar way as it is more retinoic acid receptor specific.

Topical retinoids not only reduce visible lesions but inhibit development of microcomedones and new lesions. It's important for the doctor and patient to realise the microcomedone isn't visible to the eye and field treatment as opposed to spot treatment will prevent the lesion. In other words, the microcomedone will turn into a papule, pustule or nodule later.

Topical retinoids have multiple actions that target acne pathogenesis, but importantly they normalise desquamation by decreasing keratinocyte proliferation and promoting differentiation. They also have anti-inflammatory actions by reducing the release of inflammatory cytokines and inhibiting cellular inflammation.

Another potential benefit is the improvement of acne scarring and post-inflammatory hyperpigmentation - key issues for patients and long-lasting legacy after acne clears.

The SATISFY study aimed to evaluate the long-term safety and efficacy of trifarotene in both facial and truncal acne. The multicentre, open-label 52-week study showed trifarotene was safe,

well-tolerated and effective in moderate facial and truncal acne, with 342 patients completing the study. Assessments included local tolerability, safety, investigator and physician's global assessments, and quality of life. Patients were aged from 9 to 54 years, with the mean patient age of 18 years +/- six years. Patients were asked to apply trifarotene once daily at night after washing and drying the skin, and encouraged to use a moisturiser.

As with any topical retinoid, the most common cutaneous side-effects were itching (4.6% of patients), irritation at the site (4.2%) and sunburn (1.8%). These were mild and usually occurred within the first few weeks of treatment and improved.

Side-effects usually occurred on facial skin, which could be because this skin is thinner than truncal skin and often remains unprotected against external triggers such as UV light, temperature and pollution. As truncal skin is usually covered, it's more exposed to moisture which would decrease irritancy.

During long-term maintenance therapy, it's important to advise patients to use a facial sunscreen and moisturiser regularly. Should irritation occur, maintenance treatment could be applied every second day until skin tolerability increases.

With longer term usage up to 52 weeks, success rates of the investigator global assessment or IGA for face and the physician's global assessment or PGA for trunk continue to improve from week 12 to week 52.

Overall treatment success was defined if the patient had a score of "clear" or "almost clear" and at least a two-grade improvement from baseline at any visit. 41.4% of patients reported a marked or complete improvement of facial acne at week 12. That continued to improve to 54.8% at week 26, and 66.6% at week 52. Continued improvement is important for physicians to motivate and encourage patients to follow long-term therapy and expect further benefits.

Further studies aim to show it can be successful in treating scarring and post-inflammatory hyperpigmentation.

In summary, consider the benefit to your patient in not only clearing acne but keeping it clear in a safe and effective way.

This article was written by All About Acne and sponsored by Galderma.



Taskforce findings on female adult acne and androgen excess

An expert task force appointed by the international Androgen Excess and Polycystic Ovary Syndrome Society has made evidence-based recommendations for specialists treating adult female acne.

The recommendations have been made as a result of new guidelines on adult female acne produced by dermatological societies offering little perspective from any endocrine or reproductive endocrine points of view.

"In endocrine and reproductive endocrine literature, adult female acne is considered as a possible clinical expression of hyperandrogenism, with most polycystic ovary syndrome (PCOS) guidelines considering acne as a condition of androgen excess," Enrico Carmina and colleagues wrote in a new paper.

The taskforce recommended that while diagnosis of female adult acne was mainly clinical, a grading tool was needed for optimising the treatment.

"Measurement of serum androgen values (total testosterone, free testosterone, and dehydroepiandrosterone sulfate) by high-quality assays is recommended in all women with adult acne," the authors continued.

"In women with adult acne and proven hyperandrogenism, oral combined estrogen-progestins should be added to the topical or systemic treatment of acne, independently of severity of acne.

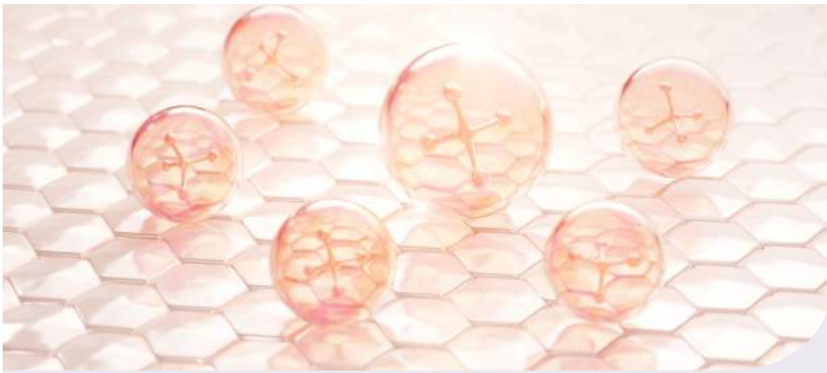
"All second and third-generation estrogen-progestins may be used, independently of the estrogen dose and progestin component."

Their final recommendations included that spironolactone may be added to estrogen-progestins in women with moderate or severe hyperandrogenic adult acne, not responding to usual treatments; and that estrogen-progestins may be used in nonhyperandrogenic patients with adult acne as second-line therapy.

Endnote reference 7

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Acne biofilms interact with other microorganisms

Researchers have assessed the way acne biofilms interact with other microorganisms and have recommended that further studies are needed in this field.

Cutibacterium acnes is found on lipid-rich areas of the skin. As well as its involvement in skin disease, Cutibacterium acnes is also involved in other infections such as those related to implanted medical devices. The formation of biofilms is a common theme in many C. acnes infections and there is growing evidence that the biofilms of C. acnes reduce its susceptibility to antibiotics, leading to treatment failure.

Tom Coenye and colleagues have presented an overview of Cutibacterium acnes biofilms and their role in pathogenesis and reduced susceptibility to antibiotics. The paper, published in Biofilm, also examines model systems that can be used to study biofilms in vitro and in vivo, and an overview of interspecies interactions occurring in polymicrobial communities containing C. acnes.

Antibiotic resistance has emerged in C. acnes globally, as a result of treatment with topical antibiotics and systemic antibiotics for severe cases of acne. C. acnes also frequently interacts with other organisms including microorganisms on the skin, and may have a beneficial effect on the host by limiting growth of potential pathogens on the skin. C. acnes can also interact with the fungus Candida albicans and form an interspecies biofilm, significantly reduced the susceptibility of Candida albicans to the antifungal agent micafungin.

Further research needs to examine how C. acnes influences biofilm formation, virulence, proinflammatory activity and cytotoxicity, the Belgian and Swiss researchers concluded.

Endnote reference 8

Endnote references

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Meet the team

Spot On is a quarterly news and research publication produced by All About Acne for healthcare professionals interested in the latest research in the treatment and management of acne. Our team curates what we consider to be some of the more interesting or notable research papers published globally on acne. Some of this new research is also published in the gated HCP section of our website (www.acne.org.au).



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