Alkynzeo®, a recently approved oral fixed-dose combination product, contains netupitant 300 mg and palonosetron 0.5 mg. It is indicated for prophylaxis of chemotherapy-induced nausea and vomiting (CINV) in combination with dexamethasone. Netupitant/palonosetron (NEPA) is intended to treat both immediate and delayed nausea and vomiting that can occur after chemotherapy. NEPA is administered one hour prior to chemotherapy on day 1 of treatment. Oral dexamethasone is administered 30 minutes prior to treatment and on days 2 and 4 for highly emetogenic chemotherapy regimens.

Palonosetron, a second generation 5-HT₃ receptor antagonist, is used to prevent the acute stage of nausea and vomiting due to the release of serotonin in the GI tract secondary to chemotherapy treatment. Proposed benefits of palonosetron therapy include its dual effect on decreasing serotonin and substance P levels as well as its apparent lack of cardiac effects associated with first generation 5-HT₃ antagonists. Netupitant, a neurokinin-1 (NK-1) receptor antagonist, prevents the binding of substance P, which is associated with inducing emesis. The main benefit of netupitant is its long half-life (~90 hours), which helps prevent delayed nausea and vomiting that occurs with some chemotherapies. Common side effects of NEPA include headache, fatigue, and dyspepsia. Netupitant moderately inhibits CYP3A4 and interacts with dexamethasone, which explains lower dose requirement for dexamethasone when used in combination with NEPA. Drug interactions with medications that utilize CYP3A4 should always be evaluated when using NEPA.

NEPA was more effective than palonosetron alone at preventing emesis in patients receiving moderately emetogenic chemotherapy. In a double-blind, randomized trial, 1455 chemotherapy-naïve patients received either a single dose of NEPA or palonosetron 0.5 mg prior to treatment with anthracycline and cyclophosphamide. All patients also received dexamethasone prior to chemotherapy infusion. Complete response was defined as both no emesis and no utilization of rescue medication throughout the delayed phase of cycle 1 (20-120 hours post chemotherapy infusion). More patients on NEPA achieved complete response than those on palonosetron (76.9% vs. 69.5%; p=0.001). Significantly more patients in the NEPA group achieved complete response during the acute phase (0-20 hours post chemotherapy infusion) and overall phases of treatment (0-120 hours). Adverse events were similar between the two treatments, and the majority of events were of mild/moderate intensity. The results of this study may not be applicable to other chemotherapy regimens. Also, the results are limited by the use of dexamethasone on day 1 of chemotherapy only; use of dexamethasone for multiple days may produce different results.

NEPA was also comparable to a regimen of aprepitant, palonosetron, and dexamethasone over multiple chemotherapy cycles. Because of the similar safety and efficacy results, NEPA may be an effective alternative to the current guideline-recommended aprepitant regimen for preventing CINV and have a more convenient dosing schedule.

Overall, NEPA appears to be a viable option for the prevention of CINV, particularly in patients receiving either moderate or highly emetogenic chemotherapies. The cost of NEPA, estimated at $480 per capsule, may influence its integration into CINV standards of practice.

By Jennifer McVeigh, PharmD Candidate

References on Page 4
Skin cancer is the most common type of cancer in the United States; however, it can often be easily treated if caught early. Being alert to skin changes, as well as avoiding known causes of skin cancer, can help protect you from skin cancer!

**Types of Skin Cancer**

There are three main types of skin cancer: melanoma, basal cell carcinoma, and squamous cell carcinoma. The most dangerous form is melanoma, which is a cancer of the cells that produce the brown color of skin.

**Statistics**

White races are more than three times as likely to develop skin cancer as non-white races. In 2011, over 65,000 people were diagnosed and 9128 people died from melanoma in the United States.

**Causes of Skin Cancer**

Ultraviolet (UV) light from the sun or tanning beds is a major cause of skin damage, which can lead to skin cancers. Three types of UV light come from the sun—UVA, UVB, and UVC. But only UVA and UVB are known to cause cancers. UVA is the type of light used by most tanning beds.

**Risk Factors**

Some people are more prone to skin cancers, which is worsened by UV exposure. Risk factors include:

- Previous skin cancer or family member with skin cancer.
- Having large, irregular, or many moles.
- Having freckles; blue or green eyes; blond, red or light brown hair; or often burning before tanning.
- Working indoors and getting large amounts of sun exposure on weekends or vacations.
- Spending lots of time outdoors
- Having an autoimmune disease (e.g. lupus, multiple sclerosis, psoriasis, etc.
- Taking medications that suppress your immune system (e.g. steroids, cyclosporine, etc.).

- Taking medications that make your skin more sensitive to the sun (e.g. some antibiotics, retinoids, etc.).

*Check with your pharmacist to see if your medications affect your immune system or cause sensitivity to the sun.*

Children are especially at risk of skin damage because they play outside often, can sunburn more easily, and are unaware of the dangers of the sun.

- Make sure that your children wear sunscreen and protective clothing to reduce their risk of developing skin cancer.

**ABCs of Moles**

An easy way to remember if a mole needs to be checked out by a healthcare provider is using the ABCDE rule (see table below).

**Prevention**

- Apply sunscreen (SPF of at least 15) often.
- Wear clothing that protects from the sun (e.g. sunglasses, hat, SPF-rated clothing, etc.).
- Stay in shaded areas.

*By Russel Arnold, PharmD Candidate*

**REFERENCES:**


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**ABCs of Moles**

<table>
<thead>
<tr>
<th>A</th>
<th>asymmetry</th>
<th>One side of the mole is not the same as the other</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>borders</td>
<td>The borders of the mole are blurred, jagged, or not easy to determine</td>
</tr>
<tr>
<td>C</td>
<td>color</td>
<td>The color is not the same throughout the mole—color can be shades of brown or black or include shades of pink, red, white, or blue</td>
</tr>
<tr>
<td>D</td>
<td>diameter</td>
<td>The mole is larger than a pencil eraser (larger than 6 mm or 1/4 inch)</td>
</tr>
<tr>
<td>E</td>
<td>evolving</td>
<td>The appearance of the mole changes—increases in size, changes shape, or changes color</td>
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</table>
Cosentyx™ (secukinumab) for Plaque Psoriasis

Secukinumab was approved in January 2015 for moderate to severe plaque psoriasis in adults. Secukinumab is similar to other biologics; however, it may be more specific for decreasing the symptoms and severity of plaque psoriasis than other treatments. Secukinumab is a human IgG1 monoclonal antibody that inhibits the action of interleukin-17A and the release of proinflammatory mediators. Secukinumab has been studied in two 52-week trials—ERASURE and FIXTURE (results in table below). Secukinumab treatment was superior to placebo in reducing PASI (psoriasis area and severity index) scores in the ERASURE trial. In this study, 738 patients with plaque psoriasis received subcutaneous doses of either secukinumab 300 mg, secukinumab 150 mg, or placebo once weekly for 5 weeks, then every 4 weeks until week 48. Over 70% of patients treated with either dose of secukinumab had a ≥75% reduction in PASI scores compared to 4.5% of patients treated with placebo. Both trials are limited by the inability to compare secukinumab doses to each other, so it is unknown which dose is more effective. Most patients who started on placebo switched to an active treatment after 12 weeks, which limits the comparisons between placebo and secukinumab. In addition, the study populations were not large enough to detect rare adverse events.

The response rate of patients treated with secukinumab was greater than the response rate in patients treated with etanercept in the FIXTURE trial. A total of 1306 patients received either secukinumab 300 mg, secukinumab 150 mg, etanercept 50 mg, or placebo. At least 67% of patients on secukinumab had a ≥75% reduction in PASI scores. In the etanercept group, 44% of patients had a ≥75% reduction in PASI scores.

The most common side effects of secukinumab include diarrhea, nasopharyngitis, upper respiratory tract infection, oral herpes, and urticaria. Secukinumab may exacerbate Crohn’s disease. The cap of the Cosentyx™ pen contains latex which could cause an allergic reaction in latex sensitive individuals.

Secukinumab is a promising new alternative for patients with moderate to severe plaque psoriasis. Currently, recruitment is underway for studies evaluating secukinumab for the treatment of other types of psoriasis, psoriatic arthritis, ankylosing spondylitis, and rheumatoid arthritis.

By Crystal Clemens, PharmD Candidate

Results from ERASURE and FIXTURE trials

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<th>Response of 0 or 1 on MIGA at week 12</th>
<th>PASI score reduction of ≥90% from baseline at week 12</th>
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<tbody>
<tr>
<td><strong>ERASURE Trial</strong></td>
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<tr>
<td>Secukinumab 300 mg</td>
<td>81.6%</td>
<td>65.3%</td>
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<td>(n=245)</td>
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<tr>
<td>Placebo (n=248)</td>
<td>4.5%</td>
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<td><strong>FIXTURE Trial</strong></td>
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<td>Secukinumab 150 mg</td>
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<tr>
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<td>1.5%</td>
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</table>

References on Page 4
Alkynze® References (from page 1)


Cosentyx™ References (from page 3)


Anaphylaxis (from page 5)


PATIENT INFORMATION:
Anaphylaxis

What is anaphylaxis?
Anaphylaxis is an extremely serious allergic reaction caused by contact with an allergen. Allergens can be anything, from food to pollen in the air. Many allergies can result in anaphylaxis, but it is most often associated with food, insect stings, and drug allergies. Anaphylaxis is a medical emergency that can result in serious harm or death.

What are the symptoms?
Anaphylaxis symptoms can affect any part of the body, no matter where contact with the allergen took place. Symptoms may include, but are not limited to:

- Itchiness
- Rash
- Hives
- Swelling of mouth and tongue
- Difficulty breathing
- Tightness of chest
- Dizziness

If not treated quickly, symptoms can worsen and result in injury or death. Symptoms can occur within minutes or hours after exposure to the allergen. Rarely symptoms can begin to resolve then resurface up to 72 hours after the exposure.

How can I prevent anaphylaxis?
Prevention of anaphylaxis is generally through avoiding the allergens that cause the reaction. Asking about food ingredients when eating away from home and letting your doctor know about your allergies are good steps to preventing a serious reaction. Medical alert bracelets are available to make healthcare personnel aware of your allergies in emergencies where you are unable to talk. Children with known allergies should be introduced to new foods and drugs slowly and with caution. Make family, friends, and coworkers aware of your allergies and inform them what to do in case of emergency.

What do I do if I have anaphylaxis?
Anaphylaxis requires quick medical attention. Call 9-1-1 immediately if you are having a serious allergic reaction. If you know that you have anaphylactic reactions, emergency medication should be available in case of emergency. Emergency medication is usually injectable epinephrine, which is given into the outer thigh for anaphylaxis. Sometimes multiple doses are needed.

Epinephrine?
Epinephrine works by raising heart rate, narrowing blood vessels to reduce swelling, and preventing more allergy chemicals from spreading throughout your body, continuing the anaphylaxis process. Epinephrine requires a prescription, and comes in two basic forms for public use: EpiPen® and Auvi-Q® auto-injecting devices. You should have access to two devices at all times in case of emergency. Epinephrine devices go bad, so make sure yours is always within the expiration date.

The Auvi-Q® is a newly available device that is very similar to the EpiPen®, but has an automated recording that walks the user through the steps to safely and effectively use the device. This is an excellent option, especially for younger people with a history of severe allergic reactions or for those who are travelling and cannot tell everyone of their condition.

By Matthew Crum, PharmD Candidate

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