

The 5th Psoriasis Symposium for Biologics and Systemic Agents

PROGRAM

November 7(Sat), 2015

부산대학교병원 E동 (응급의료센터) 9층 대강당



Organized by

The Korean Society for Psoriasis

Sponsored by

The Korean Dermatological Association

인사말씀

안녕하십니까?

대한건선학회 회장 송해준입니다.

2015년도 제5회 생물학적제제와 전신치료제에 대한 건선 심포지움에 여러분 모두를 초대합니다.

대한건선학회는 2012년 부산에서 첫 번째 심포지움을 개최한 것을 시작으로 지방과 서울을 번갈아가면서 지속적으로 이 심포지움을 개최하여 건선 환자들을 진료하시는 선생님들이 보다 안전하고 효과적인 방법으로 건선 치료에 적극적으로 임하시는 데 도움이 되고자 하고 있습니다.

중등증 이상의 건선을 앓고 있는 환자분들이 의외로 필요에 못 미치는 치료를 받고 있다는 사실이 여러 연구를 통하여 잘 알려져 있습니다. 많은 환자분들은 올바르게 앓은 소문들에 영향을 받아 무작정 전신제제를 사용하는 치료를 기피하는 경향이 있고 이로 인하여 병증은 더 악화되고 있습니다.

건선이 더 이상 피부에만 국한된 질환이 아니라는 것이 상식이 된지 오래이지만 아직도 전신치료제 사용 시 나타날 수도 있는 부작용 측면을 너무 우려하여 보다 적극적인 치료를 꺼리고 계신 의료진도 계실 것 입니다. 현재의 건선 치료의 주 흐름은 치료목표(treatment goal)를 정하고 이것이 달성될 수 있도록 보다 적극적인 치료방법을 강구해 나가는 것입니다.

이 심포지움에서는 여러분께서 보다 더 효과적인 치료방법을 선택하시는 데 도움이 될수 있도록 3가지 session으로 다각적인 구성을 하였습니다.

우선, 가장 보편적으로 사용되는 전신치료제를 사용하는 건선에 대한 전통적 전신치료방법과 아울러 점차 그 중요성이 대두되고 있는 건선관절염에 대한 전신 치료제 요법에 대하여도 살펴볼 것입니다.

둘째로, 최근 점점 더 눈부시게 발전하고 있는 생물학적제제를 사용하는 치료법에 대하여 최근의 경향과 아울러 지난 수년간의 생물학적제제 사용에서 대두되기 시작한 약제피로현상과 약제전환 방법에 대하여 알아볼 것입니다.

세 번째 세션은, 여러 전문가 패널들이 진료현장에서 만나는 다양한 임상증례에 대하여 함께 토론하며 의견을 교환하는 시간을 갖음으로써 이 심포지움에 참석하신 여러분께서 진료현장에서 겪는 어려운 문제들을 함께 풀어 나갈 수 있게 하고자 합니다.

끝으로 이 심포지움을 준비하는 데 많은 노력과 수고를 아끼지 않으신, 대한건선학회 학술이사 김병수 교수를 비롯한 임원진과, 함께 참여해주신 여러 연자님들께 감사의 말씀을 드립니다.

2015. 11

대한건선학회 회장 송 해 준

PROGRAM

Opening Ceremony

12:00-12:30 Registration

12:20-12:30 Opening address; Hae-Jun SONG (*President of KSP*)

12:30-13:45 **Session 1 The role of systemic agents at the age of biologics**

Chairs: Jai Il YOUN (*National Medical Center*), Kwang-Joong KIM (*Hallym University*)

- S1-1. **Methotrexate** / 7
Chul-Jong PARK (*Catholic University*)
- S1-2. **Cyclosporin** / 9
Yong Hyun JANG (*Kyungpook National University*)
- S1-3. **Acitretin** / 11
Bong-Seok SHIN (*Chosun University*)
- S1-4. **Conventional DMARDs in Psoriatic arthritis** / 13
Geun-Tae KIM (*Kosin University*)

Q&A

13:45-15:00 **Session 2 Recent issues on biologics for psoriasis treatment**

Chairs: Nack-In KIM (*Kyung Hee University*), Kee Suck SUH (*Kosin University*)

- S2-1. **Newly Updates on Biologics: Efficacy, Safety and Other issues** / 16
(**Paradoxical reaction and its management**)
Hai-Jin PARK (*Inje University*)
- S2-2. **Biologic fatigue and switching** / 18
Yong-Beom CHOE (*Konkuk University*)
- S2-3. **Newly coming biologics** / 19
Seong Jin JO (*Seoul National University*)

Q&A

15:00-15:30 *Coffee break (30min)*

15:30-17:00 **Session 3 Cased based panel discussion about problematic cases**

Chairs: Jee-Ho CHOI (*Ulsan University*), Joo-Heung LEE (*Sungkyunkwan University*),
Chang-Keun OH (*Oz Dermatologic Clinic*)

Panels: Sook Kyung LEE (*Maryknoll Medical Center*)
Sang-Woong YOUN (*Seoul National University*)
Byung-Soo KIM (*Pusan National University*)
So Young JUNG (*Inje University*)
Jong Keun SEO (*Academy Dermatologic Clinic*)



Session 1

**The role of systemic agents at
the age of biologics**

Methotrexate

Chul-Jong PARK

Department of Dermatology, The Catholic University of Korea College of Medicine

Methotrexate was first used for the treatment of psoriasis over 50 years ago. High-quality data concerning its efficacy and side effects are sparse. Monotherapy and combination therapy with methotrexate continue to be widely used in dermatology primarily in psoriasis and psoriatic arthritis, and for diseases as varied as sarcoidosis, dermatomyositis, and pyoderma gangrenosum.

Methotrexate is a safe and effective drug for the treatment of psoriasis. Appropriate patient selection and monitoring will significantly decrease the risks of side effects. In patients without risk factors for hepatic fibrosis, liver biopsies may not be indicated or the frequency of liver biopsies may be markedly reduced.

Table I. Monitoring for hepatotoxicity in low-risk patients

No baseline liver biopsy
Monitor liver function tests monthly for the first 6 months and then every 1 to 2 months thereafter.
→ For minor elevations (<2-fold upper limit of normal), repeat in 2 to 4 weeks.
→ For moderate elevations (>2-fold but <3-fold upper limit of normal), closely monitor, repeat in 2 to 4 weeks, and dose reductions as necessary.
→ For persistent elevations in 5 of 9 AST levels over a 12-month period or if there is a decline in serum albumin with normal nutritional status below the normal range in the setting of well-controlled disease, liver biopsy should be performed.
Consider continuing to follow according to above ACR guidelines without biopsy
<i>Or</i>
Consider liver biopsy after 3.5 to 4.0 g total cumulative dosage
<i>Or</i>
Consider switching to another agent or discontinuing therapy after 3.5 to 4.0 g total cumulative dosage.

ACR, American College of Rheumatology; AST, serum aspartate aminotransferase.

Table II. Monitoring for hepatotoxicity in high-risk patients

Consider the use of a different systemic agent.
Consider delayed baseline liver biopsy (after 2 to 6 months of therapy to establish medication efficacy and tolerability).
Repeat liver biopsies after approximately 1.0 to 1.5 g of therapy.

Decades after its introduction, methotrexate remains an effective treatment in the therapeutic armamentarium of dermatologists. Despite the introduction of biologics, methotrexate is regularly used alone or in combination with biologics for the treatment of psoriasis, and it remains a valuable treatment option in many other dermatologic diseases. Safe and effective use of methotrexate requires rational patient selection and, subsequently, fastidious and appropriate monitoring. Importantly, the clinician must recognize that patients differ in their inherent risks while taking methotrexate, with issues such as comorbidities and concomitant drug use always in need of consideration. Awareness of the risk factors for hematologic toxicity, primarily decreased renal function, will significantly reduce this side effect. Awareness of the risks for hepatic toxicity is also crucial. Patients without hepatic risk factors may not require routine liver biopsies. Folic acid supplementation is recommended to increase the safety and decrease the potential side effects.

References

1. Kalb RE, Strober B, Weinstein G et al.: Methotrexate and psoriasis: 2009 National Psoriasis Foundation Consensus Conference. *J Am Acad Dermatol.* 2009 May;60(5):824-837
2. Montaudié H, Sbidian E, Paul C et al.: Methotrexate in psoriasis: a systematic review of treatment modalities, incidence, risk factors and monitoring of liver toxicity. *J Eur Acad Dermatol Venereol.* 2011 Suppl 2:12-18

Cyclosporin

Yong Hyun JANG

Department of Dermatology, Kyungpook National University School of Medicine, Korea

CSA is a highly effective and rapidly acting systemic agent for the treatment of psoriasis. Discovered in 1970 and originally used as an immunosuppressive agent in organ transplantation, it was first shown to be effective for psoriasis in 1979. CSA induces immunosuppression by inhibiting the first phase of T-cell activation. It binds to cyclophilin, with the resulting CSA/cyclophilin complex binding to and inhibiting the enzyme calcineurin, leading to blockade of signal transduction pathways that are dependent on the transcription factor, nuclear factor of activated T cells. This blockade leads to lower levels of multiple inflammatory cytokines including interleukin-2 and interferon gamma, thus inhibiting

T-cell activation. Despite the recent development of multiple new therapeutic modalities, CSA remains an important option in treating psoriasis. CSA is very useful in crisis management, as a bridge to other therapies, and in the rapid treatment of psoriasis unresponsive to other modalities, ie, as interventional therapy.

1. Indication: adult, non-immunocompromised patients with severe, recalcitrant psoriasis

- Some guidelines suggest use of cyclosporine in moderate to severe psoriasis
- Efficacy also observed in erythrodermic psoriasis, generalized pustular psoriasis, and palmoplantar psoriasis

2. Dosing: 2.5-5.0 mg/kg/d in two divided doses/d

- Dose adjustments downward (by 0.5-1.0 mg/kg) when clearance is achieved or when hypertension or decreased renal function test results are observed

3. Duration of dosing

- Optimally used as interventional therapy; may be repeated at intervals after a rest period

4. Short-term results

- At 3 and 5 mg/kg/d, 36% and 65%, respectively, achieved a clear or almost clear result after 8 wk
- After 8-16 wk, 50%-70% of patients achieve PASI 75

5. Long-term results

- Not recommended because of toxicities
- Rapid relapse after abrupt discontinuation of cyclosporine

6. Contraindications

- Concomitant PUVA or UVB, methotrexate or other immunosuppressive agents, coal tar, history of >200 PUVA treatments or radiation therapy

-
- Abnormal renal function
 - Uncontrolled hypertension
 - Malignancy
 - Hypersensitivity to cyclosporine
 - Avoid live vaccinations
 - Caution with major infection and poorly controlled diabetes

7. Toxicity

- Renal impairment/ Hypertension/ Malignancies/ Headache, tremor, paresthesia/ Hypertrichosis/ Gingival hyperplasia/ Worsening acne/ Nausea/ Vomiting/ Diarrhea/ Myalgias/ Flu-like symptoms/ Lethargy Hypertriglyceridemia/ Hypomagnesemia/ Hyperkalemia/ Hyperbilirubinemia/ Increased risk of infection/ May increase risk of cancer

References

1. Menter et al, J Am Acad Dermatol 2009;61:451-85.
2. Kelly et al, Dermatol Clin. 2015;33:91-109.

Acitretin

Bong-Seok SHIN

Department of Dermatology, Chosun University College of Medicine, Korea

Retinoid are a group of natural and synthetic analogues of vitamin A. Three generations of the compounds can be distinguished including: generation 1.-natural monoaromatic (retinol, tretinoin, isotretinoin, alitretinoin), generation 2.-synthetic monoaromatic (etretinate, acitretin) and generation 3.-synthetic polyaromatic retinoids (bexarotene).

Psoriasis therapy is usually based on etretinate or acitretin; isotretinoin is not routinely recommended for treatment due to lower therapeutic efficacy.

Acitretin is the pharmacologically active metabolite of etretinate, and is the only oral retinoid currently approved by the FDA for treatment of severe psoriasis. Acitretin has replaced etretinate in the late 1980s in most countries because of its more favorable pharmacokinetic profile. Bioavailability is enhanced by food, especially fatty food. Acitretin is 50 times less lipophilic than etretinate and binds to albumin, whereas etretinate binds strongly to plasma lipoprotein. Etretinate is stored in adipose tissue from which it is released slowly, so it has a terminal half-life of up to 120 days in contrast to only 2 days in acitretin. But small amounts of etretinate can be formed in patients receiving acitretin if it is taken simultaneously with alcohol. Therefore the time of compulsory contraception in patients receiving acitretin is extended to 2 years (3years in the US)

Acitretin reduces the proliferative activity and favors the differentiation of epidermal keratinocytes. It inhibits keratinocyte production of VEGF, and reduce intraepidermal migration of neutrophils. Also it inhibits IL-6-driven induction of Th17 cells and promote the differentiation of T-regulatory cells.

Acitretin monotherapy is recommended in the treatment of psoriasis, hyperkeratotic hand eczema, severe Darier disease, severe congenital ichthyosis, keratoderma, lichen planus, lichen sclerosus, discoid LE, and premalignant and malignant skin lesions.

Starting daily dosages between 10 and 25mg and stepwise escalation are generally associated with higher clinical efficacy and lower incidence of adverse events and are safe in both the short-term and long-term treatments of psoriasis.

Retinoid as single agent therapy appear to show limited efficacy in psoriasis vulgaris(PV). Acitretin appears to provide better efficacy in pustular psoriasis (palmoplantar and generalized von Zumbusch type) than in PV as a single agent treatment. Therefore, combining retinoids with phototherapy appear to be highly effective in patients with PV. These combinations show an increased efficacy compared to monotherapy with acitretin or UVB or PUVA. An additional advantage is that lower doses of acitretin and lower cumulative doses of UV. Also, the possible combinations with acitretin is topical agents, but

methotrexate with increase hepatotoxicity and cyclosporine with no evidence of increased efficacy are not recommended.

Clinically significant drug interaction may occur with methotrexate, tetracycline, mini-pill, phenytoin, antidiabetic agents, and corticosteroids, that should be avoided or used with caution.

Side effects (teratogenicity, mucocutaneous effects, hepatotoxicity, hyperlipidemia, and skeletal abnormalities) are seen in most patients receiving acitretin. But they usually disappear when the drug is reduced or withdrawn, except for hyperostosis. There is no strong evidence of an increased risk of skeletal abnormalities in psoriasis patients treated with retinoids in recent many published studies.

Acitretin therapy should be monitored with liver enzymes, fasting serum cholesterol and TG, blood sugar level, and radiological investigation and this is the responsibility of the supervising dermatologist.

Recently, acitretin has revisited in the era of biologics. Compared with other systemic therapies, acitretin hardly affects the immune system, which explains the unique position of acitretin. This could be an argument to choose acitretin over the other systemic therapies in specific patient populations (immunocompromised patients, patients prone to infection, patients with a history of high cumulative doses of UV or other patients with an increased risk of skin malignancies, HIV-positive patients with psoriasis, and patients living in areas with endemic occurrence of infections such as tuberculosis).

And, acitretin could be an interesting candidate for combination treatment with biologics, since there will be no additional suppression of the immune system and that means there could well be a synergistic effect without increasing the risk of toxicity. Some reports of successful combination of acitretin with infliximab, adalimumab, etanercept or ustekinumab have reported in refractory psoriasis recently.

Conventional DMARDs in Psoriatic arthritis

Geun-Tae KIM

Division of Rheumatology, Kosin University Gospel Hospital, Korea

Psoriatic arthritis (PsA) is a chronic progressive inflammatory disorder, and joint damage can occur early in the disease course. The management of PsA has changed tremendously over the past decade owing to progress in treatment strategies and outcome assessment. Early referral, diagnosis and initiation of treatment for PsA are crucial for the optimization of management strategies. As for treatment of rheumatoid arthritis, PsA should be treated-to-the-target of remission or to the alternative target of low disease activity. However, conventional disease-modifying antirheumatic drugs (DMARDs) are partially effective in PsA with limited evidences. This Review explores the management of patients with PsA, with a particular emphasis on conventional DMARDs.

Conventional DMARDs Used for the Treatment of PsA

Drug	Dosage	Serious Toxicities	Other Common Side Effects	Monitoring
Sulfasalazine	Initial: 500 mg orally twice daily Maintenance: 1000-1500 mg twice daily	Granulocytopenia Hemolytic anemia (with G6PD deficiency)	Nausea Diarrhea Headache	CBC every 2-4 weeks for first 3 months, then every 3 months
Leflunomide	10-20 mg/d	Hepatotoxicity Myelosuppression Infection Pregnancy category X	Alopecia Diarrhea	CBC, creatinine, LFTs every 2-3 months
Methotrexate	10-25 mg/week orally or SQ Folic acid 1 mg/d to reduce toxicities	Hepatotoxicity Myelosuppression Infection Interstitial pneumonitis Pregnancy category X	Nausea Diarrhea Stomatitis/mouth ulcers Alopecia Fatigue	CBC, creatinine, LFTs every 2-3 months
Cyclosporine	Initial: 2.5-5mg/kg/d Maintenance: lowest effective doses	Nephrotoxicity Hypertension	Hypertrichosis Headache Musculo-skeletal pain Gingival hypertrophy G-I upset	BP, BUN, Creatinine, CBC, Electrolyte, LFTs every 1-3 months

References

1. Kang EJ. Psoriatic arthritis: latest treatments and their place in therapy. *Ther Adv Chronic Dis.* 2015 Jul;6(4):194-203.
2. Sritheran D. Making the next steps in psoriatic arthritis management: current status and future directions. *Ther Adv Musculoskelet Dis.* 2015 Oct;7(5):173-86.
3. Olivieri I. Advances in the management of psoriatic arthritis. *Nat Rev Rheumatol.* 2014 Sep;10(9):531-42.
4. Anandarajah AP. The diagnosis and treatment of early psoriatic arthritis. *Nat Rev Rheumatol.* 2009 Nov;5(11):634-41.



Session 2
**Recent issues on biologics for
psoriasis treatment**

Newly Updates on Biologics: Efficacy, Safety and Other issues (Paradoxical reaction and its management)

Hai-Jin PARK

Department of Dermatology, Ilsan Paik Hospital, Inje University, Korea

Currently, the biologics approved by the Korean Food and Drug Administration for psoriasis are divided into 2 classes: tumor necrosis factor (TNF)- α inhibitors, and interleukin (IL)-12/23 inhibitors. TNF- α inhibitors (etanercept, infliximab, adalimumab) have the most extensive clinical trial data and newly developed ustekinumab appears to have similar or better effect and safety profile in plaque psoriasis. The monoclonal antibodies (infliximab, adalimumab, ustekinumab) seem to have a quicker onset of action, and are more effective than etanercept, although by 1 year the proportion of patients maintaining a PASI 75 may be comparable. Ustekinumab is more effective than etanercept in the short term and is probably of comparable efficacy to adalimumab and infliximab. With respect to safety, systematic review of data from short-term studies suggests that the risk of adverse events may be slightly higher with infliximab compared with etanercept, adalimumab and ustekinumab. Registry data showed a higher risk of serious infections with adalimumab and infliximab compared with non-methotrexate and non-biologic therapies. No increased risk was observed with ustekinumab or etanercept. The significantly increased incidence of herpes zoster was observed in the psoriasis patients treated with combination of biologic medications and methotrexate. With regard to the peri-operative use of biologics, continuing biologic therapy in psoriasis and PsA patients did not increase the risk of post-operative complications. Interrupting biologic therapy peri-operatively significantly increased the risk of disease flare.

Paradoxical induction or exacerbation of psoriatic lesions during anti-TNF- α and interleukin (IL)-12/23 inhibitors (ustekinumab) therapy have been reported. It has been hypothesized that an imbalance between TNF- α and interferon- α might have a role in the pathogenesis of these reactions. Paradoxical psoriasiform reactions can be divided clinically into de novo psoriasis and exacerbation of preexisting psoriasis. The first, which is more common, occurs in patients without a history of psoriasis who are receiving TNF- α therapy for another inflammatory disorder. The second can occur with or without changes in the morphology of the lesions. For the management of paradoxical psoriasiform reaction, the initial use of topical therapy with high-strength corticosteroids, vitamin D analogs, or combinations of the 2 is recommended. In case of failure to control the psoriasis, it is best to substitute the

implicated drug (preferably by one with a different mechanism of action), if it is not essential to continue the anti-TNF- α agent. When it is necessary to continue the anti-TNF- α drug, combined therapy with another systemic treatment is needed.

References

1. Sorenson E, Koo J. Evidence-based adverse effects of biologic agents in the treatment of moderate-to-severe psoriasis: Providing clarity to an opaque topic. 2015, Apr 17:1-9. [Epub ahead of print]
2. Bakkour W, Purssell H, Chinoy H, Griffiths CE, Warren RB. The risk of post-operative complications in psoriasis and psoriatic arthritis patients on biologic therapy undergoing surgical procedures. *J Eur Acad Dermatol Venereol*. 2015 Mar 2. doi: 10.1111/jdv.12997. [Epub ahead of print]
3. Navarro R, Daud E. Clinical management of paradoxical psoriasiform reactions during TNF- α therapy. *Actas Dermosifiliogr*. 2014 Oct;105(8):752-61. doi:10.1016/j.ad.2013.05.007. Epub 2013 Aug 9.

Biologic fatigue and switching

Yong-Beom CHOE

Department of Dermatology, Konkuk University Hospital

Over the past 15 years, biologic medications have greatly advanced psoriasis therapy. However, these medications may lose their efficacy after long-term use, a concept known as biologic fatigue. Biologic molecules are seen as foreign "invaders" by the host immune system and may induce an adaptive immune response characterized by the formation of antidrug antibodies. Over time, the medication may lose effectiveness, and result in clinical worsening of the patient. In phase III clinical trials of approved biologic therapies for the treatment of psoriasis, 20-32% of patients lost their PASI-75 response during 0.8-3.9 years of follow-up. Biologic fatigue may be most frequent in those patients using infliximab. Further studies are needed to identify risk factors associated with biologic fatigue and to develop meaningful antidrug antibody assays. Three techniques for clinicians that may be helpful in maximizing the durability of response to biologic therapy include increasing the dose or dosing frequency of the medication, counseling the patient on the importance of adherence to the dosing regimen, or adding concomitant immunosuppression with methotrexate. Another option for clinicians is to switch to a drug class with a different mechanism of action. However, there is little guidance on this biologic fatigue and drug switching. In this review, I will briefly present general understanding and strategies of biologic fatigue management based on literature review and personal understanding of biologic agents.

Newly coming biologics

Seong Jin JO

Department of Dermatology, Seoul National University Hospital, Korea

Recently, the understanding of the pathogenesis of psoriasis had resulted in the development of new systemic agents such as biologics. T helper cell 17 (Th17) and the proinflammatory cytokine IL-17 has been shown to play a key role in the pathophysiology of psoriasis. IL-17 is involved in the modulation of proinflammatory cytokines, antimicrobial peptides, and chemokines. In patients with psoriasis, Th17 cells are elevated in cutaneous lesions and blood that suggests Th17 cells are important pathogenic mediators of psoriasis. The IL-23/Th17 axis model postulated that TNF- α , IL-1 β , IFN- α , and IL-6 stimulate myeloid dendritic cells to produce IL-23, which promotes Th17 cell differentiation, proliferation, and maintenance. Th17 cells migrate to the skin and produce IL-17 and several chemokines that drives chronic inflammation associated with psoriatic plaque formation. Novel biologics for psoriasis under development target various cytokines or molecules in the pathogenesis of psoriasis.

Table 1. New Therapies for Psoriasis

Drug	Active Substance	Target	Manufacturer
Tildrakizumab	IgG mAb	IL-23 p19 subunit	Merck
Guselkumab	IgG mAb	IL-23 p19 subunit	Janssen
BI 655066	IgG mAb	IL-23 p19 subunit	Boehringer Ingelheim
Secukinumab	IgG monoclonal Ab	IL-17A	Novartis
Ixekizumab	IgG monoclonal Ab	IL-17A	Eli Lilly
Brodalumab	IgG monoclonal Ab	IL-17 receptor	Amagen
Certolizumab pegol	IgG fragment (Fab) conjugated with polyethylene glycol	TNF- α	UCB
Apremilast	Small molecule	PDE4 inhibitor	Celgene
Tofacitinib oral	Small molecule	Jak1 and Jak3 inhibitor	Pfizer
Tofacitinib topical	Small molecule	Jak1 and Jak3 inhibitor	Pfizer
Ruxolitinib topical	Small molecule	Jak1 and Jak2 inhibitor	Incyte
CF101	Small molecule	A3 Adenosine receptor agonist	Can-Fite Biopharma

Tildrakizumab (MK-3222)

- The Phase II study involving 355 psoriasis patients showed that after 16 weeks of treatment 74% achieved a PASI75 compared with 4.4% in the placebo group.
- Rates of treatment-related adverse events (AEs) were similar to AEs in the placebo group.

Guselkumab (CNTO1959)

- In a RCT involving 293 participants, a PASI75 was achieved in 81% of the patients in the 50 mg guselkumab group, compared with 71% of patients receiving adalimumab and 4.8% receiving placebo.

-
- AEs were reported in 66% of patients receiving guselkumab. One guselkumab-treated patient reported a malignancy. Three MACE were reported in guselkumab-treated patients, all of whom had multiple pre-existing cardiovascular risk factors.

Secukinumab

- In a double-blind, 52-week trials, the proportion of patients showing PASI90 at week 12 was 59.2% with secukinumab 300 mg and 39.1% with secukinumab 150 mg.
- The most common AEs in the secukinumab groups were nasopharyngitis, headache, and diarrhea. Candidal infections were more common with secukinumab than with etanercept. Grade 3 neutropenia occurred in 1.0% of secukinumab-treated participants. No specific serious safety concerns have been identified to date.

Ixekizumab

- In a RCT, the proportion of patients showing PASI75 at week 12 was 71.4% with Ixekizumab 150 mg and 58.6% with ixekizumab 75mg.
- Significant reductions in PASI scores were evident as early as week 1 in the 150-mg and 75-mg groups, and these reductions were sustained for 20 weeks.
- AEs occurred in 63% of patients across the ixekizumab groups and in the placebo group. No serious AEs or major cardiovascular events were observed.

Brodalumab

- A human monoclonal antibody against IL-17RA, which blocks signaling of IL-17A and IL-17F as well as the IL-17A/F heterodimer
- In a phase 2, double-blind, placebo-controlled, dose-ranging study of 198 participants, PASI75 and PASI90 was seen in 82% and 75% at week 12, respectively.
- The most commonly reported AEs in the patients receiving brodalumab were nasopharyngitis (8%), upper respiratory tract infection (8%), and injection site erythema (6%).

Apremilast

- an oral small molecule PDE4 inhibitor
- approved by the FDA in March 2014 for the treatment of adult patients with active psoriatic arthritis
- In a 16-week randomized, placebo-controlled, phase 3 trial, PASI75 was achieved by 29% of participants in the apremilast group at week 16.
- The most common AEs were diarrhea (16%) and nausea (18%), which were predominantly mild, occurring most commonly in the first week and resolving within 1 month. No cases of severe diarrhea or severe nausea were reported.

Tofacitinib

- an inhibitor of the JAK1 and JAK3 signalling pathway.
- approved for the treatment of rheumatoid arthritis in the US, but not by the European regulatory agencies because of concerns over efficacy and safety.
- In a Phase III study involving 1,101 patients, a PASI75 at week 12 was observed in 64% of the patients who received tofacitinib 10 mg twice daily.

-
- Dose-dependent increases from baseline in mean serum high-density lipoprotein, low-density lipoprotein, and total cholesterol were observed. Tofacitinib conferred dose-dependent decreases in haemoglobin, haematocrit, and red blood cell counts.

References

1. Mansouri Y, Goldenberg G. New systemic therapies for psoriasis. *Cutis* 2015; 95: 155-60.
2. Blauvelt A, Lebwohl MG, Bissonnette R. IL-23/IL-17A Dysfunction Phenotypes Inform Possible Clinical Effects from Anti-IL-17A Therapies. *J Invest Dermatol* 2015; 135: 1946-53.
3. Kofoed K, Skov L, Zachariae C. New drugs and treatment targets in psoriasis. *Acta Derm Venereol* 2015; 95: 133-9.
4. Malakouti M, Brown GE, Wang E et al. The role of IL-17 in psoriasis. *J Dermatolog Treat* 2015; 26: 41-4.



Session 3
Cased based panel discussion
about problematic cases

CURRICULUM VITAE



Sook Kyung LEE, M.D., Ph.D.

Chairman of the Department of Dermatology, Maryknoll Medical Center

Education:

1986-1992 Busan National University, College of Medicine
1997-1999 M.S., Busan National University, College of Medicine
1999-2002 Ph.D., Busan National University, College of Medicine

Training and Fellowship Appointments:

1992-1993 Internship, Maryknoll Medical Center
1993-1997 Residency, Department of Dermatology, Maryknoll Medical Center

Faculty Appointment:

1997-2000 Medical staff, Department of Dermatology, Maryknoll Medical Center
2000-Present Chairman, Department of Dermatology, Maryknoll Medical Center

Membership:

Korean dermatological association
The Korean society of Dermatopathology

CURRICULUM VITAE



Sang-Woong YOUN, M.D., Ph.D.

*Department of Dermatology, Seoul National University College of Medicine
Seoul National University Bundang Hospital*

Education:

- 1987-1993 Bachelor of Medicine, Seoul National University College of Medicine, Seoul, Korea
- 1995-1997 Master of Medicine, Postgraduated school of Medicine, Seoul National University, Seoul, Korea (major: Dermatology)
- 2001-2003 Ph.D., Postgraduated school of Medicine, Seoul National University, Seoul, Korea (major: Dermatology)

Appointment:

- 2002-2003 Instructor, Department of Dermatology, Seoul National University Hospital
- 2003-2008 Assistant professor, Department of Dermatology, Seoul National University Bundang Hospital
- 2004-2008 Assistant Professor, Department of Dermatology, Seoul National University College of Medicine
- 2007-2008 Visiting scholar, Division of Dermatology, University of California, San Diego
- 2008-present Associate professor, Department of Dermatology, Seoul National University College of Medicine, Seoul National University Bundang Hospital

Memberships & Career:

- 2012.1-present Treasurer, Korean Society for Psoriasis

Specialities:

- Acne
- Psoriasis
- Bioengineering of skin: development of objective diagnostic methods of skin disease
- Cosmetic Dermatology

CURRICULUM VITAE



Byung-Soo KIM, M.D., Ph.D.

*Associate Professor, Chair of Department of Dermatology
Pusan National University School of Medicine and Pusan National University Hospital*

Education:

1991-1997 M.D. in Pusan National University College of Medicine
2002-2004 M.S. in Pusan National University College of Medicine
2007-2010 Ph.D. in Pusan National University School of Medicine

Professional Experience:

2001-2002 Internship in Pusan National University Hospital
2002-2006 Residency in Department of Dermatology, Pusan National University Hospital
2006-2007 Fellowship in Department of Dermatology, Pusan National University Hospital
2007-2010 Full time Instructor and Assistant Professor in Department of Dermatology, Kyungpook National University School of Medicine
2010-2012 Assistant Professor in Department of Dermatology, Pusan National University School of Medicine
2012-Present Associate Professor in Department of Dermatology, Pusan National University School of Medicine

Memberships:

The Korean Dermatological Association
The Korean Society for Psoriasis, Director of Academic Affairs
Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA)
The Korean Atopic Dermatitis Association
The Korean Society of Contact Dermatitis and Skin Allergy

Major Interests:

Psoriasis and psoriatic arthritis, Atopic dermatitis, Pruritus

CURRICULUM VITAE



So Young JUNG, M.D.

*Department of Dermatology, Haeundae Paik Hospital, Inje University College of
Medicine, 1435, Jwa-dong, Haeundae-gu, Busan, Korea*

Education:

2000-2006 M.D. in Inje University College of Medicine
2010-2012 M.S. in Inje University College of Medicine

Professional Experience:

2006-2007 Internship in Pusan National University Hospital
2009-2013 Residency in Department of Dermatology, Busan Paik Hospital
2013-2014 Fellowship in Department of Dermatology, Haeundae Paik Hospital
2014-2015 Clinical Assistant Professor in Department of Dermatology, Haeundae Paik Hospital
2015-Present Assistant Professor in Department of Dermatology, Haeundae Paik Hospital

Memberships:

The Korean Dermatological Association
The Korean Society for Psoriasis
The Korean Society for Investigative Dermatology

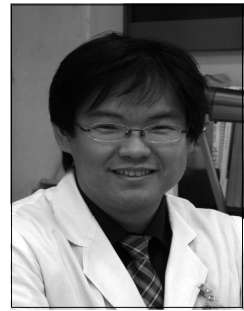
Major Interests:

Psoriasis

CURRICULUM VITAE

Jong Keun SEO, M.D.

Dermatologist of the Academy Dermatologic Clinic, Korea.



Previously:

Assistant professor of the department of dermatology, Busan Paik Hospital, Inje University

Dermatologist of Maryknol Medical Center

Fellow of the department of dermatology, Busan Paik Hospital

Doctor of Medicine of Pusan National University

Residency in the department of dermatology of Maryknol Medical Center

Member of the Korean Dermatological Association

Member of the Korean Society for Psoriasis