With a little help from my friends: understanding the IL-23 pathway and managing psoriasis and psoriatic arthritis

Learnings from the Janssen-Sponsored Satellite Symposium at the 2021 ESDR Annual Meeting on 23 September 2021

With speakers:
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janssen Immunology
PHARMACEUTICAL COMPANIES OF Johnson & Johnson

1 IL-23 and tissue-resident memory T cells

TRM cells develop from effector memory T cells[1]

- Can be protective or pathogenic[1]
- Residual IL-17 producing T cells remain in healed psoriatic lesions[2]
- High fraction of remaining T cells after anti-TNF-α treatment are putative pathogenic[2]

These cells are elevated in the circulation of patients with PsA compared to psoriasis alone, which may indicate aberrances in cutaneous tissue homeostasis may contribute to arthritis development[3]

Anti-IL-23 increases Treg/TRM ratio[4]

Higher Treg/TRM ratio at Week 24 may be related to the higher PASI 90 response with guselkumab compared to secukinumab at Week 48[4]

2 Targeting the IL-23 pathway in the skin

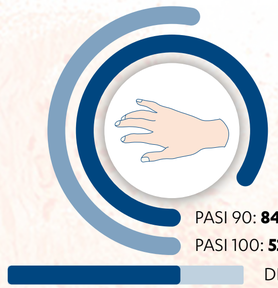
IL-23 inhibitor mechanism of action[4–7]

1. **Blockade of IL-23 would be expected to limit the expansion of IL-23 dependent cells, including pathogenic Th17 cells, and increase Treg/TRM ratio**
2. **Blockade of IL-23 led to reduced circulating levels of the effector cytokines IL-17A and IL-17F at week 4 that was sustained through week 48**
3. **Maintained PASI 90 response following guselkumab withdrawal was associated with continued suppression of IL-17 serum cytokine levels**

IL-23 inhibition can lead to long-term remission of psoriasis and improved quality of life

Guselkumab

Week 252[8]



PASI 90: **84.1%**
PASI 100: **52.7%**
DLQI 0/1: **72.7%**

Week 48:
Improved nail psoriasis[9]

Week 252:
Improved HADS score for depression[8,10]

Week 252:
Improved HADS score for anxiety[8,10]

3 Detection and management of psoriatic arthritis

The burden of PsO and PsA

- Mortality rates can be elevated in patients with PsO and PsA[11]
- Concomitant PsO with PsA can be associated with worse quality of life than PsO alone[12]

Detection of PsA by dermatologists and rheumatologists

Dermatologists

- Screening with validated questionnaires[13]
- Ask patients about clinical signs of PsA[14,15]

Rheumatologists

- Clinical and laboratory examinations[16]
- Imaging techniques (US, MRI, CT, XR)[17]

Risk factors for PsA manifestation in patients with PsO[18]

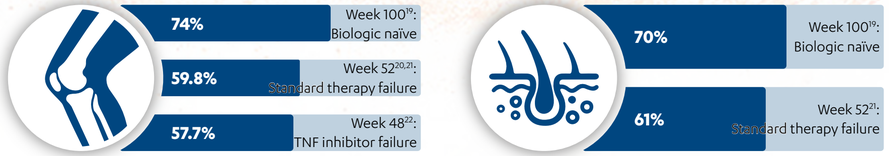
- Scalp psoriasis
- Inverse psoriasis
- Nail psoriasis

Other risk factors include:

- First-degree relative with PsA
- Severe psoriasis
- Obesity
- Subclinical musculoskeletal inflammation
- Elevated serum biomarkers

IL-23 inhibition reduces PsA disease severity in biologic-naïve patients and patients who have failed with TNF inhibition

Guselkumab



Abbreviations: ACR, American College of Rheumatology; CT, computed tomography; DLQI, Dermatology Life Quality Index; HADS, Hospital Anxiety and Depression Scale; IL, interleukin; MRI, magnetic resonance imaging; PASI, Psoriasis Area Severity Index; PsA, psoriatic arthritis; PsO, psoriasis; Th, T helper; TNF, tumour necrosis factor; Treg, T regulatory; TRM, tissue-resident memory; US, ultrasound; XR, X-ray.

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Date of preparation: January 2022
CP-267864