

Depression is a common problem among those with psoriasis. In fact, of all conditions that co-occur with psoriasis, depression is the most common, affecting up to 80% of people with the condition. Depression not only makes life miserable for those it affects, it increases the risk of developing psoriatic arthritis and worsens treatment outcomes and prognosis.

It's hardly surprising that depression is such a prominent feature of psoriasis, given that people are living with a condition which is physically uncomfortable, can limit physical activities and often results in embarrassment and stigmatisation. However, recent evidence suggests that this is only part of the story and there is another factor at work in psoriasis: inflammation. In other words, both psoriasis and associated depression, have common underlying mechanisms. How does this happen?

Inflammation the key

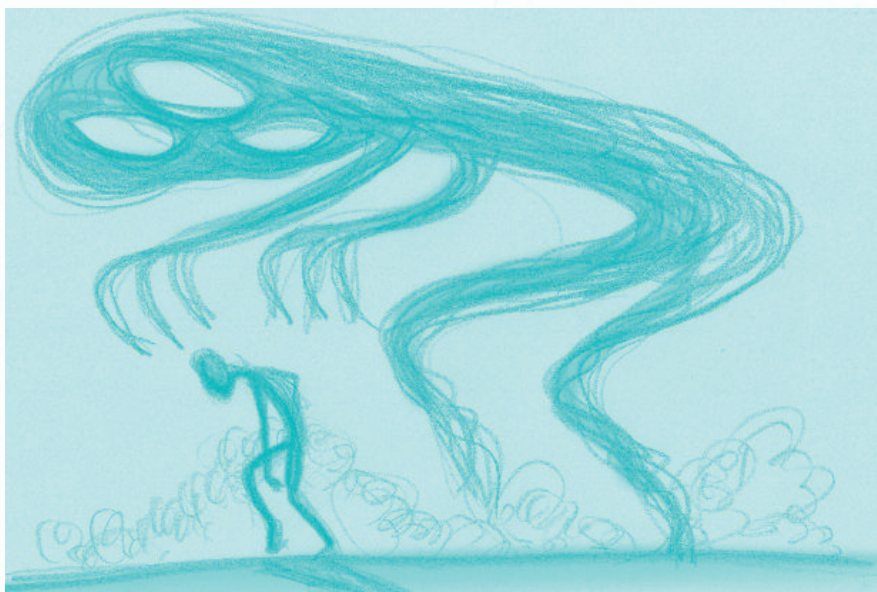
Inflammation and immunity are regulated by a special group of proteins called cytokines, including interleukins and tumour necrosis factor-alpha (TNF-alpha). The combined effects of these cytokines account for the various clinical features of psoriasis and psoriatic arthritis, and their blood levels are strongly associated with disease severity. In fact, psoriasis has been described as the result of a cytokine 'storm'. Importantly, these inflammatory cytokines can cross from the bloodstream into the brain, where they may deplete important brain chemicals such as serotonin, norepinephrine and dopamine. These neurotransmitters are intimately involved in mood regulation and mental function and it is by this mechanism that psoriasis contributes to depression.

A recent study examined the relationship between depression severity and blood levels of inflammatory cytokines (interleukins) in men with psoriasis.¹ Results showed that the severity of the depression was associated with the duration and severity of the disease and blood levels of inflammatory cytokines. Interestingly, the researchers also found a relationship between depression and low levels of vitamin D (vitamin D₃), suggesting that vitamin D supplements may also be helpful in the management of psoriasis.

It is not only in psoriasis that the association between inflammation and depression has been found. Studies have found a similar link in patients undergoing surgery, many of whom suffer with post-surgical depression. As with psoriasis, this 'feeling low' has always been attributed to the impact of surgery on lifestyle – mobility, inability to work and social interaction etc. But the available evidence now also points in the direction of inflammation as a key factor in the post-surgical blues.²

The impact of biologics on depression

Biologic drugs, or biologics, used to treat psoriasis are given by injection or intravenous (IV) infusion (a



slow drip of medicine into a vein). Examples include infliximab, adalimumab and etanercept. They target specific parts of the immune system and block the adverse effects of inflammatory cytokines.

By calming inflammation throughout the body, biologics might be expected not only to improve skin lesions and arthritis in psoriasis, but also symptoms of depression. Anecdotally, we know this to be the case; in clinical trials it's quite common for participants to report improvements in mood, well before the benefits are seen in the skin. And now there is emerging scientific evidence to support this observation. A recent study on the impact of TNF-alpha inhibitors in a total of 980 patients with psoriasis or psoriatic arthritis found a significant improvement in rates of depression and insomnia after biologic therapy and a reduction of around 40% in the use of antidepressants.³ A systematic review of relevant studies also confirmed a significant improvement in depressive symptoms in psoriatic patients taking a range of biologic agents.⁴

Why does this matter?

Evidence shows that inflammation is the key to both psoriasis and depression; the more severe the psoriasis, the more marked the depression. Given the substantial beneficial effect of biologics on both the physical and psychological manifestations of psoriasis, their use should be considered earlier rather than later.

So, the message here is that if you have moderate to severe psoriasis which has not responded well to the more usual treatments such as topical creams or other systemic options like methotrexate or cyclosporine and you have experienced mood changes, it might be time to talk to your doctor about biologics.



Scientific References:

1. Pietrzak D, Pietrzak A, Grywalska E et al. Serum concentrations of interleukin 18 and 25-hydroxyvitamin D3 correlate with depression severity in men with psoriasis. *PLoS One*. 2018; 13: e0201589. doi: 10.1371/journal.pone.0201589
2. Bouchard LC, Antoni MH, Blomberg BB et al. Postsurgical depressive symptoms and proinflammatory cytokine elevations in women undergoing primary treatment for breast cancer. *Psychosom Med*. 2016; 78:26-37
3. Wu CY, Chang YT, Juan CK, et al. Depression and insomnia in patients with psoriasis and psoriatic arthritis taking tumor necrosis factor antagonists. *Medicine (Baltimore)* 2016 May; 95(22): e3816. Published online 2016 June
4. Fleming P, Roubille C, Richer V et al. Effect of biologics on depressive symptoms in patients with psoriasis: a systematic review. *J Eur Acad Dermatol Venereol*. 2015; 29:1063-70.

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