Gaining a better understanding of the causes of hidradenitis suppurativa

Hidradenitis suppurativa (HS) is a long-term disease presenting as painful, fluid-filled lesions on the skin. HS typically affects the armpits, backside, breasts, genitals and inner thighs. HS can be a lifelong condition and affects about 1% of the population, being more common in females. Owing to the pain and distressing nature of HS it is also associated with depression, anxiety and reduced quality of life. There is often a delay in diagnosing the condition, which can have a negative impact on patients. Although current treatments may improve symptoms of HS in some patients there is an urgent need for new therapies.

The causes of HS remain unclear, and a better understanding is essential to improve treatment options. In this Irish study, we used new technologies to characterize the cells and examine the expressed genes in inflamed HS skin compared with healthy skin. We then focused on a molecule associated with inflammation known as interleukin-1β (IL-1β).

We found that IL-1β is overexpressed in HS skin. IL-1β can only function once it has been activated by a complex of molecules known as the NLRP3 inflammasome. Given that drugs targeting the NLRP3 inflammasome are currently in trials for other diseases, our findings from adopting an experimental approach suggest that an inhibitor of this complex could reduce inflammation in HS skin. Overall, our study results provide reasons for investigating treating HS with drugs that target the NLRP3 inflammasome.