

Hidradenitis Suppurativa: Pathophysiology and APTT3X Impact in Care

The pathologic process of hidradenitis suppurativa begins when a defective hair follicle becomes occluded and ruptures, spilling its contents, including keratin and bacteria, into the surrounding dermis. A chemotactic inflammatory response by surrounding neutrophils and lymphocytes can lead to abscess formation and subsequent destruction of the pilosebaceous unit and other adjacent structures. Other possible contributors to pathology include abnormal antimicrobial peptides, abnormal secretion of apocrine glands, abnormal invaginations of the epidermis leading to tract formation, and deficient numbers of sebaceous glands

Immunological abnormalities have also been observed. Elevated levels of inflammatory cytokines, including tumor necrosis factor-alpha and various interleukins, have been detected in the lesions of hidradenitis suppurativa and provide possible targets for emerging treatments. Bacteria do not appear to be causative. Aspirate from an unruptured lesion typically yields a sterile culture. However, bacterial infection and colonization during the process can secondarily worsen hidradenitis suppurativa.

The extensive use of APTT3X formulation in Wound care (acute and chronic), Burn care, Orthopedic/Trauma care and many forms of soft tissue infections provide a strong foundation of efficacy that will and has translated to the benefit of HS patients incorporating APTT3X formulation into their HS treatment program.

APTT3X formulation has key aspects of efficacy that lend itself to managing and stopping these HS lesions.

1. The APTT3X formulation penetrates deeply into tissues. This is important due to treating these early developing HS lesions during “prodromal symptoms” experienced by HS patients. Start sooner than later with applications.
2. Our active ingredient of 3% Tetracycline and the formulation, imparts direct inhibition to the inflammatory cytokine cascade to mitigate ongoing development and rupture of lesions due to the localized inflammation.
3. The APTT3X formulation contains our proprietary “Cell Differentiation Enhancement” technology that provides pathways to optimize the localized healing (regenerative type

responses) of these nodules. As noted in wound care and burn care, we see dramatically less scarring and fibrosis when the APTT3X formulation is the key component of care.

4. The APTT3X formulation will prevent any bacterial infection from developing and creating secondary pain, inflammation. The APTT3X formulation WILL decrease the use of oral antibiotics in managing HS lesions, hence removing many side effects patients experience from long term oral antibiotic usage, in addition to developing resistance.
5. The APTT3X formulation will penetrate through scabs/crusts (eschars) when using to manage more progressive lesions of HS. This addition of APTT3X will definitely decrease the needs for any form of surgical intervention for HS patients (deroofing procedures and excisional surgery).
6. Importantly, there have been no adverse events reported or documented in over 8 years of use of this topical APTT3X formulation.

Up to half of the individuals will report a prodromal syndrome involving burning, stinging, pain, pruritus, warmth, or hyperhidrosis in the area 12 to 48 hours before the appearance of a lesion. Triggers can include menstruation, weight gain, stress, hormonal changes, excessive heat, and perspiration. On presentation, individuals are typically well appearing and afebrile unless secondary infection or advanced disease is present.

Characteristic primary lesions are deep-seated nodules, usually 0.5 to 2 cm, that last from days to months. They are often mistaken for furuncles or “boils.” However, while a furuncle will respond rapidly to drainage or antibiotics, the nodules of HS are deep and can rupture and track subcutaneously. Multiple recurrent nodules in the same area may lead to the formation of intercommunicating sinus tracts that can ulcerate or drain. Drainage may be purulent and malodorous. Other lesions include open comedones (described as “tombstone” comedones), often double or multi-headed. In advanced stages, thick fibrotic scars and plaques can develop, leading to architectural distortion of the area.

The axilla is the most common location for HS lesions. Other common areas are the inguinal, inner thighs, perianal and perineal, inframammary, buttocks, pubic area, scrotum, vulva, trunk, and, less commonly, the scalp and retro-auricular areas.

HS Deroofing Procedure:

[https://www.jaad.org/article/S0190-9622\(09\)02288-9/fulltext#:~:text=Patients%20with%20HS%20and%20dermatologists,full%20extent%20of%20a%20lesion.](https://www.jaad.org/article/S0190-9622(09)02288-9/fulltext#:~:text=Patients%20with%20HS%20and%20dermatologists,full%20extent%20of%20a%20lesion.)

