



## Hidradenitis suppurativa

Hidradenitis suppurativa (HS) is a chronic follicular occlusive disease, characterized by recurrent painful, deep-seated nodules and abscesses located primarily in the axillae, groins, perianal, perineal, and inframammary regions. Women are more commonly affected than men.

**Synonym:** Acne Inversus

**Clinical Presentation:** *HS does not cause ulcers but the openings to the draining sinuses and nodules look like ulcers. The openings to fistulae also can look like ulcers. For this reason, it is included in this list of differential diagnoses.*

### Disease Course:

- Onset may take weeks or months, causing vague itching to mild to moderate pain.
- Can have an acute, severe, and even frightening onset with large, deep, painful lesions noted.
- Can have active papules, nodules, and draining sinuses in one area and sheets of perifollicular papulo-pustules elsewhere.
- Lesions come and go, are usually painful, and often malodorous.
- Nodules can last anywhere from 7 to 15 days, and can resolve, persist, or drain to the surface with pain resolution.
- Secondary lesions develop because the process persists.
- The subcutaneous lesions can coalesce and may form chronic interlinked sinuses draining serous, purulent, bloody, or a mixed fluid, with or without odor.
- Persistent ulcerations and even red granulation tissue may surround a sinus opening.
- With healing, hypertrophic scars and eventually dense rope-like linear fibrotic bands can form.
- Lesions, scars, and sinuses coalesce into chronic inflammatory plaques in severe HS.
- May develop contractures, lymphatic obstruction, lymphedema, lymphangiectasia, and verrucous lymphangiomas.



**Predisposing Factors:**

- Obesity (shearing forces & hormones)
- Endocrine (sex hormones/androgens)
- Diet (high glyceamic, dairy, insulin-like growth factor)
- Smoking (70-90% prevalence of smoking in HS patients, causes follicular hyperplasia and plugging)
- Drugs: lithium, androgenic progestins (medroxyprogesterone acetate, levonorgestrel containing IUD)
- Stress

***Diagnosis:*** All three diagnostic criteria must be met to establish the diagnosis:

1. *Typical lesions:* either deep-seated painful nodules (blind boils) in early primary lesions, or abscesses, draining sinuses, bridged scars and “tombstone” open comedones in secondary lesions
2. *Typical topography:* axillae, groin, genitals, perineal and perianal region, buttocks, infra- and inter-mammary folds
3. *Chronicity and recurrences*

**Hurley’s criteria for Hidradenitis Suppurativa Staging:**

Criteria are used to assess severity. In turn, treatment is chosen to fit disease severity staging.

- *Stage I:* Abscess formation, single or multiple, without sinus tracts and cicatrization or scarring.
- *Stage II:* Recurrent abscesses with sinus tracts and scarring. Single or multiple widely separated lesions.
- *Stage III:* Diffuse or almost diffuse involvement or multiple interconnected tracts and abscesses.

***Associations (Not causes):***

- Down’s syndrome
- Obesity
- Metabolic syndrome



- Dowling-Degos syndrome
- Keratosis-Ichthyosis-deafness syndrome
- Acne
- Hyperlipidemia
- Insulin resistance
- Depression
- Polycystic ovarian syndrome
- Pilonidal sinus
- Diabetes
- Osteoarthritis
- Rheumatoid arthritis
- Inflammatory bowel disease - Crohn disease and Ulcerative colitis
- PASH syndrome (pyoderma gangrenosum, acne, and suppurative hidradenitis)
- SAPHO (synovitis, acne, pustulosis, hyperostosis, and osteitis)
- Pyoderma gangrenosum
- Ischemic heart disease
- Squamous cell cancer

***Treatment:*** There is no single effective treatment or cure for HS. The only permanent cure has been reported with wide excisional surgery for very severe HS (Hurley's Stage III).

Patients require metabolic, medical, and surgical strategies and lifelong gentle, atraumatic care.

Planning treatment follows severity grading: the first two stages respond to medical treatment whereas the third stage requires systemic medication and surgery.

All patients will need thorough education and constant reassurance and support.

**General care:**

- Education, diet, and support
- Improve environment
- Reduce all trauma, friction in the area, heat, sweating and obesity
- Loose clothing, boxer-type underwear
- Tampon use if appropriate: avoid pads
- Antiseptic washes are optional



- Consider anti-androgen treatment
- Stop smoking
- Low dairy diet with low glycemic load diet

At all stages – especially if weight an issue – consider use of metformin to improve sensitivity to insulin in patients on high glycemic load diets. Lowering chronic hyperglycemia reduces insulinemia and so decreases the impact on androgen receptors with a positive outcome.

### Hurley's Stage I:

Abscess formation, single or multiple without sinus tracts and cicatrization or scarring. This is the most limited form of disease, and it is amenable to medical therapy. The majority of patients with Stage I have a few flares a year, however they can be well controlled.

#### *Topical antibiotics:*

- Clindamycin 1% lotion twice daily

#### *Intralesional therapy:*

- Triamcinolone acetonide 10 mg/mL, 0.5 to 1 ml injected with a 30g needle into individual, painful, early papules/small nodules to suppress inflammation. Inject right into the center of the lesion.

#### *Systemic Antibiotics (for 7-10 days) - wide choice:*

- Tetracycline 250-500 mg by mouth four times daily
- Doxycycline 100 mg by mouth twice daily
- Clindamycin 300 mg by mouth twice daily
- Amoxicillin/clavulanic acid 500/125 mg to 875/125 mg by mouth every 8 hours

#### *Adjunct preventive therapy:*

- Zinc gluconate 50 mg with copper 2mg by mouth twice daily and vitamin C 500 mg by mouth three times per day

#### *Anti-androgens:*

- Drospirenone containing oral contraceptive – consider extended regimen (daily x 84 – 126 days)
- Drospirenone containing oral contraceptive plus spironolactone
- Spironolactone 100-200mg/d

#### *Surgical Treatment:*



- Not usually needed for Hurley's Stage I

### Hurley's Stage II :

Recurrent abscesses with sinus tract formation and scarring, either single or multiple widely separated lesions.

Requires medical and surgical treatment.

For those with little scarring and much inflammation use antibiotics such as rifampin and /or clindamycin for 3 months and then decrease to maintenance on tetracyclines and/or high dose zinc and/or dapsone.

General care and intralesional treatment is the same as for stage I. Antibiotics for at least three months are usual, with a decreased dose for maintenance. Systemic antibiotics include tetracycline, as above or, for more extensive disease, clindamycin 300 mg twice a day often combined with rifampin 300 mg twice a day for three months (monitoring appropriate blood work). Dapsone 100 mg per day can be used if monitoring appropriate blood work. Long-term maintenance is with a tetracycline etc. (as below) is often recommended. Maintain the same adjunctive therapy with low glycemic/low dairy diet, no nicotine and zinc gluconate and anti-androgens (see above).

#### *Topical antibiotics:*

- Clindamycin 1% lotion twice a day

#### *Systemic Antibiotics:*

- Amoxicillin and clavulanic acid up to 3g loading (using amoxicillin dose portion) then 1g (using amoxicillin dose portion) po q8h for 5-7 days for acute painful lesions
- Clindamycin 300 mg po bid with / without Rifampin 300 mg po bid (with the appropriate blood work) or Dapsone 50 mg po and then 100 mg po (with the appropriate blood work )
- Maintenance – Tetracycline 250-500 mg qid, doxycycline or minocycline 100 mg bid

#### *Adjunct preventive therapy:*

Zinc gluconate 50 mg with copper 2 mg po bid and Vitamin C 500 mg tid

#### *Anti-androgens:*

- Drospirenone – consider extended regimen (daily x 84 – 126 days)
- Drospirenone plus spironolactone



- Finasteride 5 mg/d

*Intralesional therapy:*

- Triamcinolone as in Stage I

*Surgical Treatment:*

If there are persistent chronic sinus tracts or cysts, then surgical unroofing is necessary. Incision and drainage (I and D) should be avoided. Only perform incision and drainage for a tense abscess that is too painful to bear.

*General Care and Maintenance:*

- as for Stage I

*Hurley's Stage III:*

Characterized by diffuse or almost diffuse involvement, or multiple interconnected tracts and abscess.

- This stage is a surgical disease and supportive concurrent medical treatment is both prophylactic and essential. Management of Hurley Stage III disease requires a staged medical and surgical team approach.

*Medical Treatment:*

Pre-Op - These patients may need the anti-inflammatory effects of medical treatment to prepare them for surgical treatment.

- Corticosteroids 0.5 – 0.7 mg/kg/d methylprednisolone or prednisone (oral)
- Cyclosporine 4 mg/kg/d by mouth
- Methotrexate 15 mg oral or subcutaneously weekly
- TNF- $\alpha$  inhibitors (“biologics”)
  - Infliximab 5 mg/kg IV Q6 weeks – use with the help of a knowledgeable health care provider
  - Adalimumab 40 mg every other week. Ustekinumab and anakinra also have been used

Biologics decrease swelling, inflammation and discharge pre-operatively, simplifying unroofing and excisional surgery, but affect neither the epithelialized sinus tracts nor the invasive proliferative gelatinous mass that is so resistant to therapy. Biologics are not a cure; improvement is rarely permanent.

- Clindamycin 300 mg po bid with Rifampin 300 mg by mouth twice daily

Note – Medical treatment at this stage is only palliative and temporary.



### Surgical Treatment:

Wide surgical excision, unroofing and debriding of all cysts, sinuses, and fistulous tissue by a knowledgeable surgeon. Healing can be by secondary intent, or it may be accelerated with mesh grafting. Primary closure is avoided in active disease. At times skin grafts/skin flaps are required.

### **References:**

[www.hs-foundation.org](http://www.hs-foundation.org)

Margesson LJ, Danby FW. Hidradenitis suppurativa.  
*Best Pract Res Clin Obstet Gynaecol* 2014 Oct; 28(7):1013-27.

Alikhan A, Sayed C, Alavi A, Alhusayen R, Brasasard A, Burkhart C, Crowell K, Eisen D, Gottlieb A, Hamzavi I, Hazen P, Jaleel T, Kimball A, Kirby J, Lowes MA, Micheletti R, Miller A, Naik HB, Orgill D, Poulin Y. North American Clinical Management Guidelines for Hidradenitis Suppurativa: a Publication from the United States and Canadian Hidradenitis Suppurativa Foundations. Part I: Diagnosis, Evaluation, and the use of Complementary and Procedural Management. *J Am Acad Dermatol* 2019 Mar 11. pii: S0190-9622(19)30367-6.

Alikhan A, Sayed C, Alavi A, Alhusayen R, Brasasard A, Burkhart C, Crowell K, Eisen D, Gottlieb A, Hamzavi I, Hazen P, Jaleel T, Kimball A, Kirby J, Lowes MA, Micheletti R, Miller A, Naik HB, Orgill D, Poulin Y. North American Clinical Management Guidelines for Hidradenitis Suppurativa: a Publication from the United States and Canadian Hidradenitis Suppurativa Foundations. Part II: Topical, Intralesional, and Systemic medical Management. *J Am Acad Dermatol* 2019 Mar 11; pii: S0190-9622(19)30368-8.

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