DIAGNOSIS AND TREATMENT OF HIDRADENITIS SUPPURATIVA: A REVIEW OF RECENT LITERATURE

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ABSTRACT

Hidradenitis suppurative is a chronic inflammatory skin disorder affecting the apocrine gland-bearing skin, typically presenting with painful, deep-seated, inflamed nodules, abscesses, and sinus tracts. Its prevalence has been estimated to be between 1 and 4%, and it commonly affects young adults, with a higher prevalence in females. The pathogenesis is multifactorial, with genetic, environmental, and lifestyle factors all playing a role. Diagnosis can be challenging, and a comprehensive approach is required, including a thorough medical history and physical examination, as well as imaging studies and skin biopsies if necessary. Management can be difficult, and no curative treatment is available. A multidisciplinary approach is required, including lifestyle modifications, pharmacotherapy, and surgical interventions. Early diagnosis and treatment can improve quality of life and prevent disease progression and complications.

Keyword *Hidradenitis, clinical manifestations, phenotypes, treatment.*

1. INTRODUCTION

Hidradenitis suppurativa (HS), also known as acne inverse, is a chronic inflammatory skin disease that affects areas of the skin with apocrine glands, such as the armpits, groin, and buttocks. It is characterized by the recurrent formation of painful nodules, abscesses and sinus tracts, resulting in a significant decrease in the quality of life of patients.

Despite its high prevalence and morbidity, the diagnosis and treatment of HS remains a clinical challenge. However, recent advances in the understanding of its pathogenesis and new therapeutic options have provided hope to affected patients. In this review article, the most recent scientific literature on the diagnosis and treatment of HS will be analyzed, with the aim of providing an updated view of this complex dermatological disease.

Accurate diagnosis of HS is essential to initiate appropriate treatment. Specific diagnostic criteria have been developed to assist in the clinical evaluation of patients. These criteria include the presence of characteristic lesions, such as nodules, abscesses, and sinus tracts, in anatomical areas typical of HS. In addition, classification systems have been proposed to evaluate the severity of the disease, such as the International Hidradenitis Suppurativa Severity Scoring System (IHS4). The use of imaging techniques, such as ultrasound and magnetic resonance imaging, may also be useful to confirm the diagnosis and evaluate the extent of the disease

The pathogenesis of HS involves a complex interaction between genetic, immunological and environmental factors. Recent studies have identified genetic mutations associated with HS, including variants in genes related to follicular differentiation and immune response. Additionally, dysfunction of the innate immune system has been observed in patients with HS, contributing to an exacerbated inflammatory response in affected areas. Environmental factors such as smoking and obesity have also been associated with an increased risk of developing HS.

Regarding the treatment of HS, progress has been made in the development of more effective therapeutic options. Systemic antibiotics, such as tetracyclines and clindamycin, remain a first-line option in mild to moderate cases of HS.

2. EPIDEMIOLOGY.

The epidemiology of hidradenitis suppurativa (HS) is a relevant topic to understand the burden of the disease both globally and in specific contexts, such as Mexico. In this section, the incidence of cases, the median age of onset and other risk factors associated with HS will be addressed, using updated epidemiological evidence.

The incidence of HS cases varies throughout the world and is estimated to affect approximately 1% of the general population. In a population-based study in the United States, an annual incidence of 6.0 cases per 100,000 inhabitants was reported. In an epidemiological analysis in Mexico, an estimated prevalence of 0.19% was found. These figures highlight the importance of HS as a significant medical condition in terms of disease burden.

Regarding the median age of onset of HS, epidemiological studies have shown that the disease tends to present in early adulthood, generally between 20 and 30 years of age. However, cases of onset in adolescence and at older ages have also been reported. HS is more prevalent in women, with the gender ratio varying between 1:1 and 3:1 in different patient cohorts.

In addition to obesity and trauma, there are other risk factors associated with HS that have been identified in epidemiological studies. These factors include smoking, family history of HS, metabolic syndrome, type 2 diabetes mellitus, and inflammatory bowel disease. In a study carried out in Mexico, a significant association was found between HS and the presence of comorbidities such as high blood pressure, dyslipidemia and chronic kidney disease. These findings highlight the importance of considering these additional risk factors in the clinical evaluation and management of patients with HS.

In summary, the epidemiology of HS shows a variable incidence in different regions, with a significant prevalence both worldwide and in Mexico. The median age of onset is early adulthood, with a higher prevalence in women. In addition to obesity and trauma, risk factors such as smoking, family history of HS, and metabolic comorbidities play an important role in the onset and progression of the disease. A robust epidemiological approach is essential to better understand the burden of the disease and develop effective prevention and management strategies for patients with HS.

3. PATHOPHYSIOLOGY.

Hidradenitis suppurativa (HS) is a chronic inflammatory skin disease that affects the pilosebaceous follicles. Although the exact pathophysiology of HS is not yet fully understood, the interaction of multiple factors has been suggested to contribute to the development and progression of the disease.

Genetic Factors: Hidradenitis suppurativa (HS) has a strong genetic predisposition. Several studies have identified genetic variants associated with the disease, suggesting an underlying genetic basis for its pathogenesis. Genes related to immune response, epithelial cell function, and keratinocyte production have been identified as genetic risk factors in HS. These genetic variants may influence the inflammatory response and the integrity of the skin barrier, contributing to the formation of chronic inflammatory lesions in pilosebaceous follicles.

Role of the Microbiome: The skin microbiome, that is, the community of microorganisms that inhabit the skin, also plays an important role in the pathophysiology of HS. Bacterial dysbiosis has been observed in HS lesions, meaning that there is an imbalance in the normal bacterial composition of the skin. Studies have shown a greater presence of anaerobic bacteria, such as Propionibacterium acnes and Staphylococcus aureus, as well as the formation of bacterial

biofilms in HS lesions. This abnormal bacterial colonization can trigger a chronic inflammatory response in the skin, contributing to the formation of abscesses, fistulas, and scars characteristic of HS.

Furthermore, an association between HS and systemic diseases such as inflammatory bowel disease (IBD) has been observed. Epidemiological studies have shown a higher prevalence of HS in patients with IBD, especially Crohn's disease. It has been proposed that immune dysfunction and shared inflammatory response between HS and IBD may contribute to their coexistence in some patients.

Associated Systemic Diseases: An association has been observed between hidradenitis suppurativa and systemic diseases, especially inflammatory bowel disease (IBD). IBD, which includes Crohn's disease and ulcerative colitis, is characterized by chronic inflammation of the gastrointestinal tract. Epidemiological studies have shown a higher prevalence of HS in patients with IBD, especially in those with Crohn's disease. It has been suggested that both HS and IBD share similar immunological dysfunctions and inflammatory responses, which could contribute to their coexistence in some patients.

External factors can also influence the pathophysiology of HS. Smoking has been associated with an increased risk of developing and worsening HS. It is believed that components of cigarette smoke can trigger an inflammatory response and alter immune function, thereby exacerbating HS symptoms. Additionally, climate, humidity and diet may influence disease activity in some individuals, although scientific evidence is still limited in these aspects.

Obesity: Obesity has consistently been associated with an increased risk of developing HS. The presence of a high body mass index (BMI) has been linked to a significant increase in the incidence of HS. Obesity can contribute to the clogging of pilosebaceous follicles and increased sebum production, creating an environment conducive to the development of inflammatory skin lesions.

Hormonal factors: A higher incidence of HS has been observed in women of reproductive age, suggesting a possible role of hormonal factors in the disease. . It is believed that sex hormones, such as androgens, may influence sebum production and the skin's inflammatory response, contributing to the development of HS.Historia familiar: Existe evidencia de que la HS puede tener un componente hereditario. Los pacientes con antecedentes familiares de HS tienen un mayor riesgo de desarrollar la enfermedad. [i] Se ha propuesto que ciertos genes heredados pueden aumentar la susceptibilidad a la HS y contribuir a su aparición en familias.

Autoimmune diseases: An association has been observed between HS and other autoimmune diseases, such as psoriatic arthritis and metabolic syndrome. These diseases share inflammatory characteristics and may influence the course and severity of HS. The coexistence of these diseases may have implications for the management and prognosis of patients with HS.

It is not yet fully understood. It is believed to be a multifactorial disease involving an abnormal immune response, dysfunction of hair follicles, and blockage of apocrine sweat glands. Chronic inflammation is a common finding in HS, and inflammatory mediators, such as cytokines and lymphocytes, have been shown to play an important role in the pathogenesis of the disease. Furthermore, it has been discovered that dysbiosis of the skin microbiota and overproduction of sebum may also contribute to the pathophysiology of HS.

Chronic inflammation plays an important role in the pathogenesis of the disease, and is believed to be the result of an exaggerated immune response. Numerous inflammatory mediators have been identified in HS lesions, including proinflammatory cytokines such as tumor necrosis factor alpha (TNF-α), interleukin-1 (IL-1), interleukin-17 (IL-17), and chemokines such as interleukin-1. -8 (IL-8). Furthermore, it has been shown that oxidative stress and bacterial dysbiosis can also contribute to inflammation and disease progression.

4. CLASSIFICATIONS

There are 5 classifications that talk about the phenotypes of HS.

Table -1 Classifications of hidradenitis suppurativa

Classification	Authors	Year	Key Features
Hurley [ii]	Hurley	1989	Stage I: Single or multiple abscesses without healing or interconnected tunnels.
			Stage II: Recurrent abscesses, fistulizations and limited healing.
			Stage III: Multiple abscesses, fistulizations and extensive or diffuse scarring.
Sartorius [iii]	Sartorius	2010	Class I: Isolated lesions without healing and/or inflammation.
			Class II: Recurrent lesions with interconnected tunnels and limited scars.
			Class III: Extensive, multiple inflammatory lesions and extensive scars.
HS-PGA [iv]	Kimball	2010	Grade I: <3 lesions or <10% of body surface affected.
			Grade II: 3-10 lesions or 10-30% of body surface affected.
CAUNI-PAUTRIER [v]	Cauni-Pautrier	2012	Phenotype I: Single or multiple abscesses without scars, sinus tracts or inflammation.
			Phenotype II: Single or multiple abscesses with scars, sinus tracts or limited inflammation.
			Phenotype III: Multiple abscesses with extensive scars, sinus tracts or extended inflammation.
Marotrel [vi]	Marotrel	2014	Phenotype A: Isolated or recurrent abscesses without scars, sinus tracts or inflammation.
			Phenotype B: Isolated or recurrent abscesses with limited scars, sinus tracts or inflammation.
			Phenotype C: Multiple abscesses with extensive scars, sinus tracts or diffuse inflammation.

5. CLINICAL MANIFESTATIONS

Hidradenitis suppurativa is characterized by the presence of chronic inflammatory lesions in specific areas of the body, such as the armpits, groin, buttocks, and breast folds. These injuries usually manifest with the following symptoms:

Nodules and abscesses: Inflammatory nodules are one of the main signs of hs. These nodules are usually painful, firm, and deep in the skin. Over time, the nodules can develop abscesses, which are pus-filled pockets.

Fistulas and tunnels: As abscesses drain or rupture, fistulas and subcutaneous tunnels may form. These abnormal connections between lesions allow continued drainage of pus and can hinder wound healing.

Scarring and fibrosis: As the disease progresses, lesions can leave scarring and fibrosis in the affected skin. These scars are usually hard, thick, and can limit movement in the affected areas.

Chronic pain: hs can cause chronic pain that can vary in intensity. The pain can be constant or intermittent and can negatively affect patients' quality of life.

It has been associated with various comorbidities, meaning that patients with HS have a higher risk of developing other diseases. Some of the most common comorbidities that accompany HS include:

Autoimmune diseases: A higher incidence of autoimmune diseases, such as psoriatic arthritis and inflammatory bowel disease, has been observed in patients with hs. This suggests a possible shared immunological connection between these diseases.

Obesity and metabolic syndrome: Obesity and metabolic syndrome, which includes factors such as insulin resistance, hypertension, and elevated blood lipid levels, are associated with an increased risk of developing hs. These conditions can influence inflammation and the body's immune response.

Mood disorders: patients with hs may experience a higher incidence of mood disorders, such as depression and anxiety. The emotional impact of living with a chronic illness and the impact on quality of life can contribute to these disorders.

The different symptomatic types of HS, which can help guide the treatment approach. These types include:

Localized: characterized by isolated or recurrent lesions in one or two specific areas of the body, such as the armpits or groin. There may be a limited number of lesions and the symptoms are usually milder compared to the other types.

Regional: characterized by the presence of lesions in multiple areas of the body, such as the armpits, groin, and buttocks. There may be a greater number of injuries and symptoms may be more severe, affecting the patient's quality of life.

Generalized: This is the most severe form of HS and is characterized by extensive lesions in several areas of the body. The symptoms are usually more intense, with the presence of multiple abscesses, fistulas and scars, which can cause significant physical and emotional disability.

Perineal: refers to the presence of lesions in the perineal region, including the genital and anal areas. This form of HS can be especially difficult to treat due to the sensitivity of the area and the need to preserve intestinal and urogenital function.

Inversa: Also known as acne inversa, it is a term used to describe the presence of lesions in intertriginous areas, such as the armpits, groin and breast folds. These lesions are usually associated with increased inflammation and abscess formation.

6. DIAGNOSIS.

The diagnosis of hidradenitis suppurativa can be based on several clinical aspects and evaluation tools. Some key elements for diagnosis include:

Clinical criteria: The most commonly used diagnostic criteria are the international consensus criteria for hidradenitis suppurativa (hs-is), which are based on the presence of characteristic lesions, such as nodules, abscesses, fistulas, and scars, in specific areas of the body. These criteria also consider the distribution of lesions in the axillary, inguinal and gluteal regions.

Histologic findings: Histologic findings in hs may include chronic inflammation, abscess formation, and sinus tunnels in the dermis and subcutaneous tissue. Fibrosis and destruction of the pilosebaceous units can also be observed.

Ultrasonography: Ultrasonography is a useful tool in the diagnosis and evaluation of hs. can detect the presence of abscesses, tunnels, skin thickening, and inflammatory structures, which helps determine the severity of the disease and guide treatment.

MRI: Magnetic resonance imaging (MRI) is another imaging technique that can be used in more complex cases of HS. MRI provides a detailed view of the extent of the lesions, allowing the identification of abscesses, tunnels and inflammatory structures. In addition, MRI can help evaluate the presence of complications, such as involvement of adjacent organs.

Severity scales: in the field of hidradenitis suppurativa (hs), different scales are used to evaluate the severity of the disease and guide treatment. These scales allow us to quantify the number and severity of skin lesions, as well as the impact on patients' quality of life. Some of the most used scales are:

Hidradenitis Severity Index (HSI): The HSI is a validated scale that assesses the severity of HS based on the number and type of lesions present in specific areas of the body. This scale takes into account the presence of nodules, abscesses, fistulas and scars, as well as their extension and distribution. The Hidradenitis Severity Index (HSI) is a scoring system that evaluates the extent and severity of hidradenitis suppurativa based on three components: area of inflammation, drainage, and sequence of lesions. A score of 0 to 3 is assigned for each component and then summed to obtain the total HSI.

This index provides a quantitative measure of disease severity and may be useful in evaluating the impact and progression of hidradenitis suppurativa in a specific patient.

Table -2 Hidradenitis Severity Index

Hidradenitis Severity Index (HSI)
Inflammation area: A (0-3)
Drainage: D (0-3)
Sequence: S (0-3)
Sum of HSI (0-9)

Hurley index: the hurley index is a classic scale that classifies hs into three stages of severity. Stage I is characterized by the presence of isolated abscesses or inflammatory lesions without scars. Stage II involves the presence of recurrent abscesses and scars. Stage III refers to the presence of multiple abscesses, extensive scars, and sinus tunnels.

Table -3 Hurley classification

Hurley I: Isolated lesions without fistulous tracts or scars
Hurley II: Presence of multiple lesions and/or fistulous tracts without obvious scars
Hurley III: Presence of multiple lesions, fistulous tracts and extensive scars

Some quality of life scales: since hs can have a significant impact on patients' quality of life, specific scales have been developed to evaluate this dimension. Some of the most used scales are:

The Dermatology Life Quality Index (DLQI) is a widely used questionnaire to evaluate the impact of dermatological diseases on patients' quality of life. It consists of a series of questions that address different aspects of daily life and how the disease affects functionality, emotional well-being, social relationships and other relevant aspects. Each question has response options that are scored on a scale of 0 to 3, depending on the perceived impact on quality of life. The scores for all questions are then summed to obtain the total DLQI, which can range from 0 (no impact on quality of life) to 30 (severe impact on quality of life). The DLQI is a useful tool to assess the psychosocial impact of hidradenitis suppurativa and other dermatological conditions, and can be used to monitor treatment progress and patient response.

Hidradenitis suppurativa quality of life (hsqol): The Hidradenitis Suppurativa Quality of Life (HSQOL) is a questionnaire specifically designed to evaluate the impact of hidradenitis suppurativa on patients' quality of life. It consists of a series of questions that address different aspects related to the disease, such as pain, physical discomfort, limitation of activities, body image, emotions and social relationships. Each question has response options that are scored on a scale of 0 to 3, depending on the perceived impact on quality of life. The scores for all questions are then summed to obtain the total HSQOL, which can range from 0 (no impact on quality of life) to 30 (severe impact on quality of life). The HSQOL is a useful tool to assess the specific impact of hidradenitis suppurativa on patients' quality of life and can be used to monitor treatment progress and patient response.

The Desseau definition is a clinical classification proposed by French dermatologist Desseau in 1989. This classification is based on the severity and extent of skin lesions in hidradenitis suppurativa (HS). Desseau's definition divides the disease into three degrees.

Dessau Classification
Grade I: Isolated lesions without fistulous tracts or scars
Grade II: Presence of multiple lesions and/or fistulous tracts without obvious scars
Grade III: Presence of multiple lesions, fistulous tracts and extensive scars

7. DIFFERENTIAL DIAGNOSIS

In this review, the authors mention that Hidrosadenitis Suppurativa can be confused with other conditions such as folliculitis, sebaceous cyst, cellulitis, lipoma and Verneuil's disease. To make the differential diagnosis, the authors highlight the importance of evaluating the distribution, duration and progression of symptoms, as well as the presence of other clinical features such as pain, inflammation and scar formation.

Table -4 Differential Diagnosis

Differential Diagnosis	Clinical features	Histopathological characteristics
Acne vulgaris	Predominantly comedonal and papulo-pustular lesions in seborrheic areas. Less painful and without formation of fistulous tracts.	Presence of comedones and dilated sebaceous follicles.
Folliculitis	Superficial pustules and papules at the base of the hair follicle. It may be associated with exposure to swimming pools, jacuzzis, etc.	Perifollicular inflammation and inflammatory cells in the hair follicle.
Bartholin's abscess	Pain and mass in the region of the Bartholin gland. Purulent discharge in advanced cases.	Presence of abscess in Bartholin's gland.

Sebaceous hyperplasia	Yellowish or brown sebaceous papules on the face, scalp and trunk. Not painful or inflamed.	Increase in size of sebaceous glands and proliferation of epithelial cells.
Syphilis	Chancre-like lesions at the site of initial infection, followed by a generalized skin rash.	Presence of spirochetes in histopathology and positive serology for syphilis.

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8. TREATMENT

Treatment of hidradenitis suppurativa (HS) may vary depending on the severity of the disease and the individual characteristics of each patient. Different therapeutic approaches used in the treatment of HS are described below:

It is recommended to maintain adequate hygiene of the affected areas and avoid friction and trauma. Using mild soaps and non-irritating skin care products can help control symptoms and prevent secondary infections.

Medical treatment:

Antibiotics: Antibiotics are widely used in the treatment of HS to control secondary infections and reduce inflammation. Some commonly prescribed antibiotics include:
• Clindamycin: It is administered orally at a dose of 300-450 mg every 6-8 hours or as a topical cream.
• Doxycycline: It is administered orally at a dose of 100-200 mg per day.
• Minocycline: It is administered orally at a dose of 100-200 mg per day.
• Ciprofloxacin: It is administered orally at a dose of 500-750 mg twice a day.
• Trimethoprim-sulfamethoxazole: It is administered orally at a dose of 160/800 mg twice a day.

The duration of antibiotic treatment varies depending on the patient's individual response and the severity of the disease. In general, a minimum treatment period of 6-8 weeks is recommended.

Hormonal therapy: In some cases of HS associated with hormonal imbalances, hormonal therapies can be used to control symptoms. This includes the use of oral contraceptives that contain estrogen and progesterone, such as those containing levonorgestrel and ethinyl estradiol. Androgen receptor antagonists, such as spironolactone, may also be used.

Immunosuppressants: In severe and refractory cases of HS, immunosuppressants may be considered to control inflammation. Some examples include:
• Methotrexate: It is administered orally or subcutaneously at a dose of 15-25 mg once a week.
• Ciclosporin: It is administered orally at a dose of 2.5-5 mg/kg per day.
The administration of immunosuppressants requires careful monitoring and regular medical follow-up due to possible side effects and toxicity.

Surgical treatment of HS is carried out by a surgeon specialized in skin diseases (dermatologist) or plastic surgeon. The choice of surgical technique depends on the individual evaluation of the patient, the extent of the injuries, and the experience of the surgeon.v

Surgery is considered an important option in the management of HS, especially in advanced and persistent cases that do not respond adequately to conservative measures. Surgical interventions seek to eliminate inflammatory lesions, abscesses, fistulas and scar tissue, as well as improve the patient's quality of life. Some surgical treatment modalities used in HS include

1. Wide excision: It consists of the surgical removal of the lesions and affected tissue within a wide safety margin. This technique is effective for extensive lesions, recurrent abscesses, and complex fistulas. It can be supplemented with primary closure, skin grafts or more complex reconstruction techniques as necessary.

2. Marsupialization: It is mainly used in large and recurrent abscesses. It consists of creating a bag-shaped opening to allow continuous drainage of the abscess and healing by secondary intention.
3. Limited excision: Used in smaller, more localized lesions. Removal of the inflammatory lesions and surrounding scar tissue is performed without extensive excision. This technique is used when the preservation of healthy tissue is a priority.

Treatment goals may vary depending on the severity of the disease and associated comorbidities. Some of the additional goals of treatment include:

Control of secondary infections: HS may be associated with secondary bacterial infections. The use of antibiotics, both topical and systemic, can help control and prevent the spread of infections.

Improved function and mobility: In cases of advanced HS, injuries and scars can limit the mobility and functionality of certain areas of the body. Surgical treatment and rehabilitation can help improve function and restore affected mobility.

9. FORECAST

The prognosis for hidradenitis suppurativa varies depending on the severity of the disease and response to treatment. Mild hidradenitis suppurativa often resolves with appropriate medical treatment, while severe hidradenitis suppurativa may be more difficult to manage and may require surgical treatment.

Hidradenitis suppurativa can have a significant impact on patients' quality of life and may be associated with psychiatric disorders such as depression and anxiety. However, if managed properly, the long-term prognosis of hidradenitis suppurativa can be good. Early identification of the disease and implementation of appropriate treatment can improve the prognosis of hidradenitis suppurativa.

In summary, the prognosis for hidradenitis suppurativa varies depending on the severity of the disease and response to treatment. Proper management of the disease can significantly improve long-term prognosis. Furthermore, the duration of the disease, the degree of involvement and the presence of comorbidities are important prognostic factors that must be taken into account.

10. CONCLUSIONS

In conclusion, hidradenitis suppurativa is a chronic inflammatory skin disease that affects a significant part of the population, especially women. Although the exact cause of the disease is not yet known, genetics, hormonal factors and immunity are believed to play an important role in its development.

Early diagnosis and appropriate medical care are crucial to prevent complications and improve the prognosis of the disease. Treatment of hidradenitis suppurativa may include medical measures, such as antibiotics and anti-inflammatories, and in severe cases, surgical treatment. Additionally, it is important to provide psychological and psychiatric care to patients to help them manage the emotional aspects of the illness.

Despite advances in treatment and understanding of the disease, there is still much to learn about hidradenitis suppurativa. More studies are needed to fully understand the disease and develop more effective treatments.

Overall, hidradenitis suppurativa can have a significant impact on patients' quality of life, underscoring the importance of comprehensive, multidisciplinary care that addresses both the medical and psychological aspects of the disease. With a comprehensive approach and early diagnosis, patients can receive appropriate treatment and have a better quality of life.

11. ACKNOWLEDGEMENT

The authors can acknowledge any person/authorities in this section**. This is not mandatory.**

12. REFERENCES

[i] Frew, J. W., Hawkes, J. E., & Krueger, J. G. (2022). Hidradenitis Suppurativa: From Pathogenesis to Diagnosis and Treatment. Journal of Investigative Dermatology, 142(6), 1309-1318. doi: 10.1016/j.jid.2021.12.022

[ii] Hurley, H. J. (1989). Axillary Hyperhidrosis, Apocrine Bromhidrosis, Hidradenitis Suppurativa, and familial benign pemphigus: surgical approach. In R. Roenigk & R. L. Roenigk (Eds.), Dermatologic Surgery: Principles and Practice (pp. 729-739). Marcel Dekker.

[iii] Sartorius, K., Emtestam, L., Jemec, G. B., Lapins, J., & Objective Investigative Group (2010). Objective scoring of hidradenitis suppurativa reflecting the role of tobacco smoking and obesity. British Journal of Dermatology, 162(3), 583-586. doi: 10.1111/j.1365-2133.2009.09508.x

[iv] Kimball, A. B., Sundaram, M., & Gauthier, G. (2010). Evaluating the clinical significance of HS disease burden using a validated instrument. In J. Revuz, G. B. E. Jemec, & A. B. Kimball (Eds.), Hidradenitis Suppurativa (pp. 159-168). Springer.

[v] Cauni-Pautrier, R., Driscoll, M. S., & Leslie, K. S. (2012). Classification of hidradenitis suppurativa/ acne inversa: A review. In J. Shaker (Ed.), Update on Hidradenitis Suppurativa (pp. 19-24). InTechOpen. doi: 10.5772/50368

[vi] Marotrel, G. (2014). Hidradenitis suppurativa classification. Annales de Dermatologie et de Venereologie, 141, S91-S93. doi: 10.1016/S0151-9638(14)70194-X