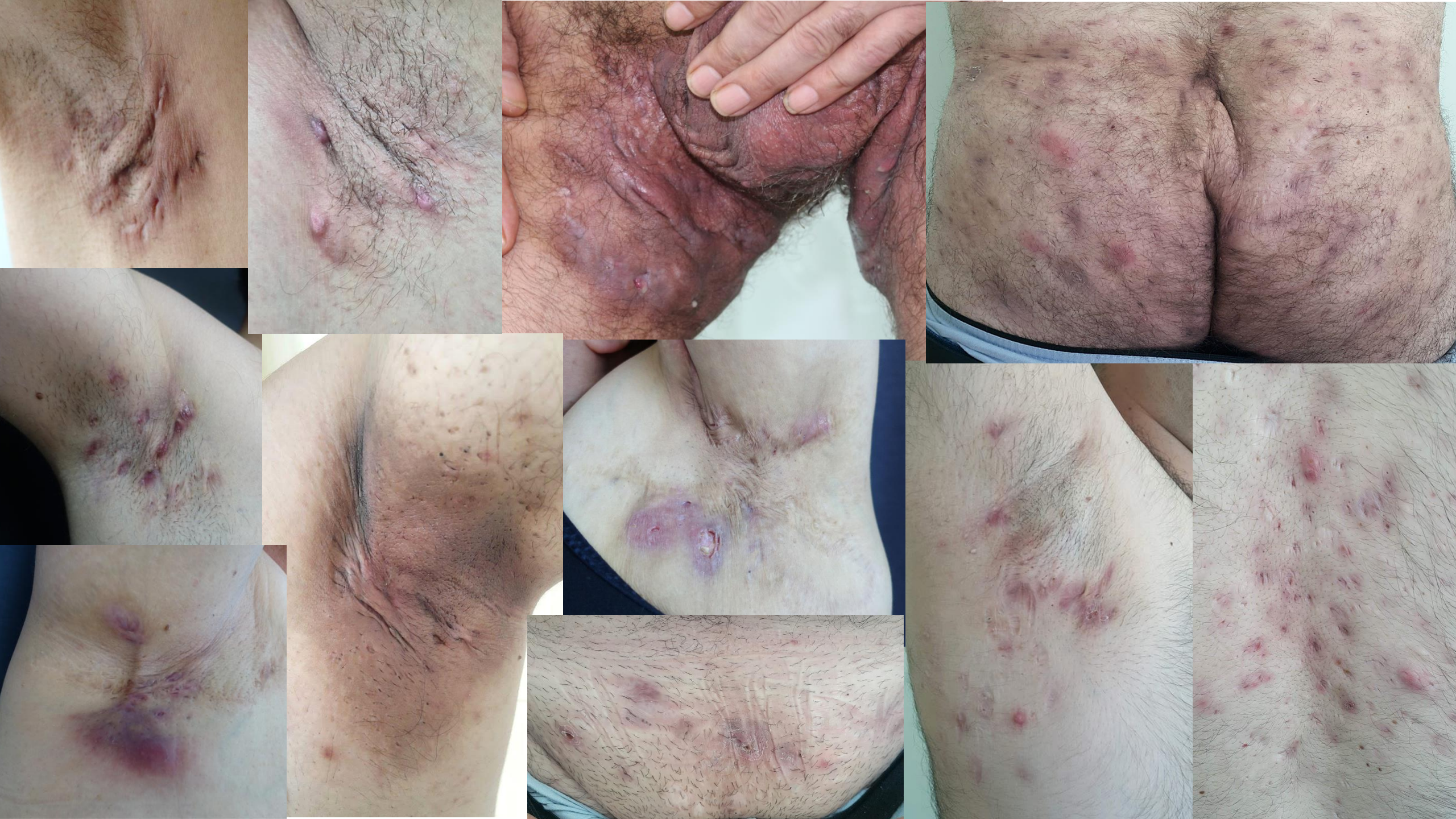
HİDRADENİTİS SUPPURATİVA TEDAVİSİ

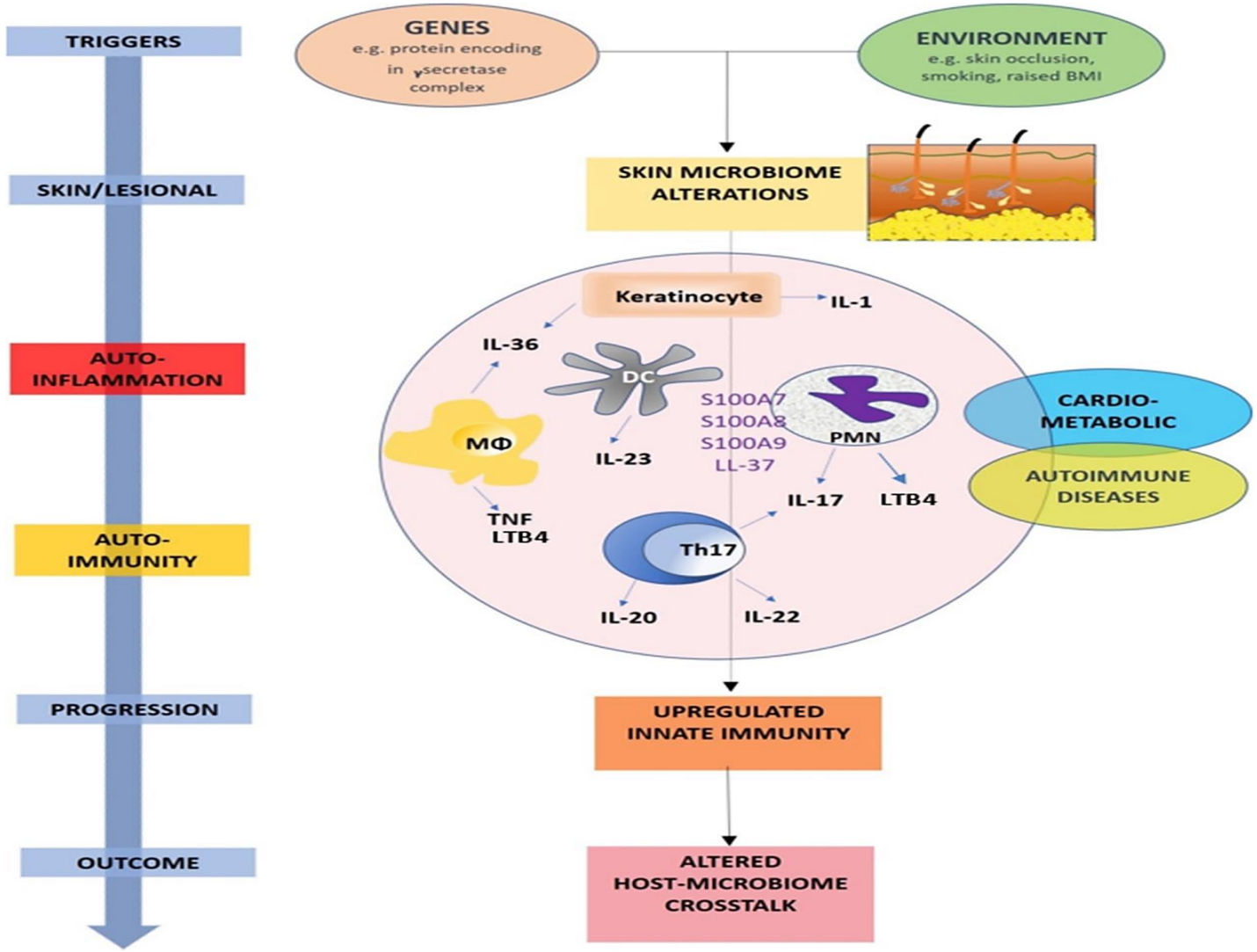
PROF. DR. FİLİZ TOPALOĞLU DEMİR

İSTANBUL MEDİPOL ÜNİVERSİTESİ TIP FAKÜLTESİ

DERİ VE ZÜHREVİ HASTALIKLAR ANABİLİM DALI



Hidradenitis supurativa- Patogenez



Review › Exp Dermatol. 2020 Dec;29(12):1154-1170. doi: 10.1111/exd.14214.

What causes hidradenitis suppurativa ?-15 years after

Christos C Zouboulis [1 2], Farida Benhadou [1 3], Angel S Byrd [4], Nisha S Chandran [1 5], Evangelos J Giamarellos-Bourboulis [1 6], Gabriella Fabbrocini [1 7], John W Frew [8], Hideki Fujita [9], Marcos A González-López [1 10], Philippe Guillem [1 11], Wayne P F Gulliver [1 12], Iltefat Hamzavi [13], Yildiz Hayran [14], Barbara Hórvath [1 15], Sophie Hüe [16], Robert E Hunger [1 17], John R Ingram [1 18], Gregor B E Jemec [1 19], Qiang Ju [1 20], Alexa B Kimball [21], Joslyn S Kirby [22], Maria P Konstantinou [23], Michelle A Lowes [8], Amanda S MacLeod [24], Antonio Martorell [1 25], Angelo V Marzano [1 26 27], Łukasz Matusiak [1 28], Aude Nassif [1 29], Elena Nikiphorou [30], Georgios Nikolakis [1 2], André Nogueira da Costa [1 31], Martin M Okun [32], Lauren A V Orenstein [33], José Carlos Pascual [1 34], Ralf Paus [1 35], Benjamin Perin [36], Errol P Prens [1 37], Till A Röhn [38], Andrea Szegedi [39], Jacek C Szepietowski [1 28], Thrasyvoulos Tzellos [1 40], Baoxi Wang [1 41], Hessel H van der Zee [1 37]

Affiliations + expand

PMID: 33058306 DOI: 10.1111/exd.14214

Genetik faktörler, metabolik sendrom, doğal ve/veya adaptif immun sistemde anormal yanıt gibi konağa özgü faktörler ve bakteriyel mikrobiyomlar, sigara içimi gibi çevresel faktörler arasındaki karmaşık etkileşimden kaynaklanmaktadır

Hidradenitis supurativa- Patogenez

Review > Exp Dermatol. 2020 Dec;29(12):1154-1170. doi: 10.1111/exd.14214.

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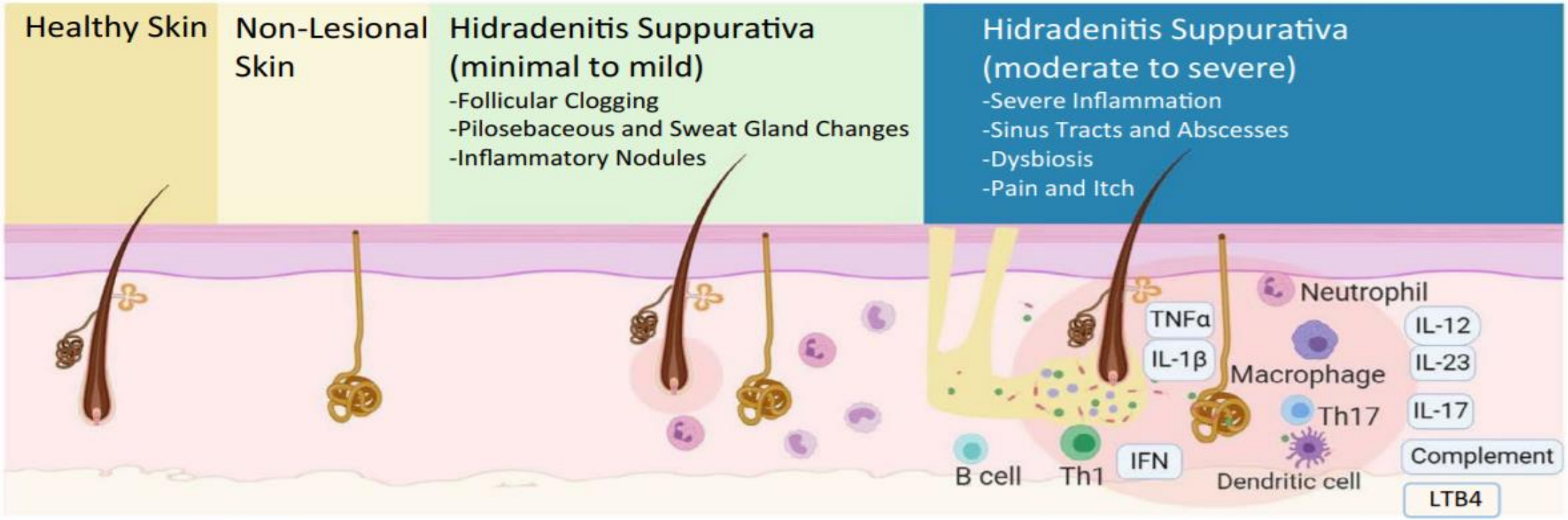
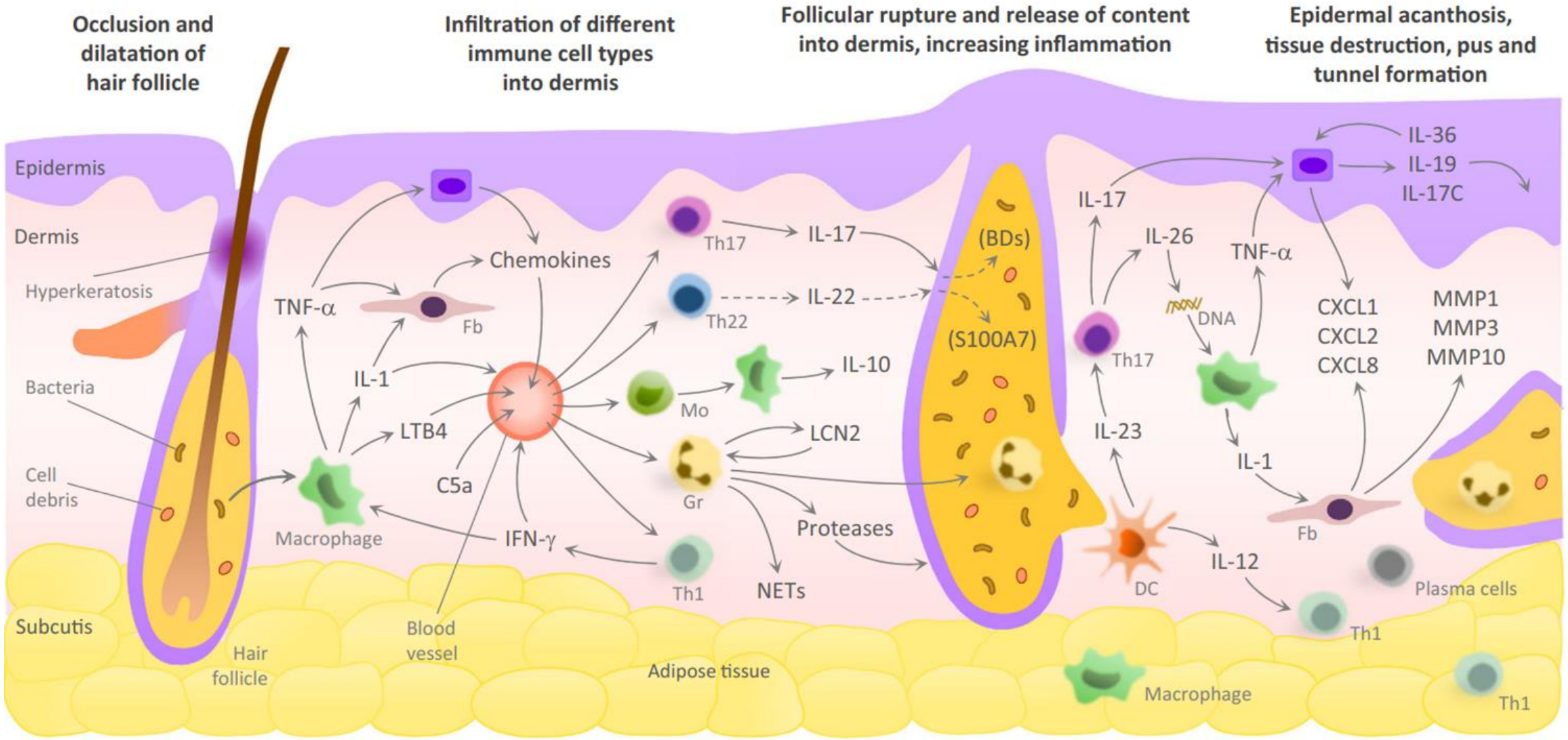
Affiliations + expand

PMID: 33058306 DOI: 10.1111/exd.14214

- ✔ Perifoliküler immün aktivasyon, oklüzyon, sebum stazı
- ✔ Foliküler dilatasyon ve rüptür
- ✔ Foliküler içeriğin çevreleyen dokuya salınmasıyla inflamatuar yanıt
- ✔ Apse ve sinüs traktları
- ✔ Skarlaşma



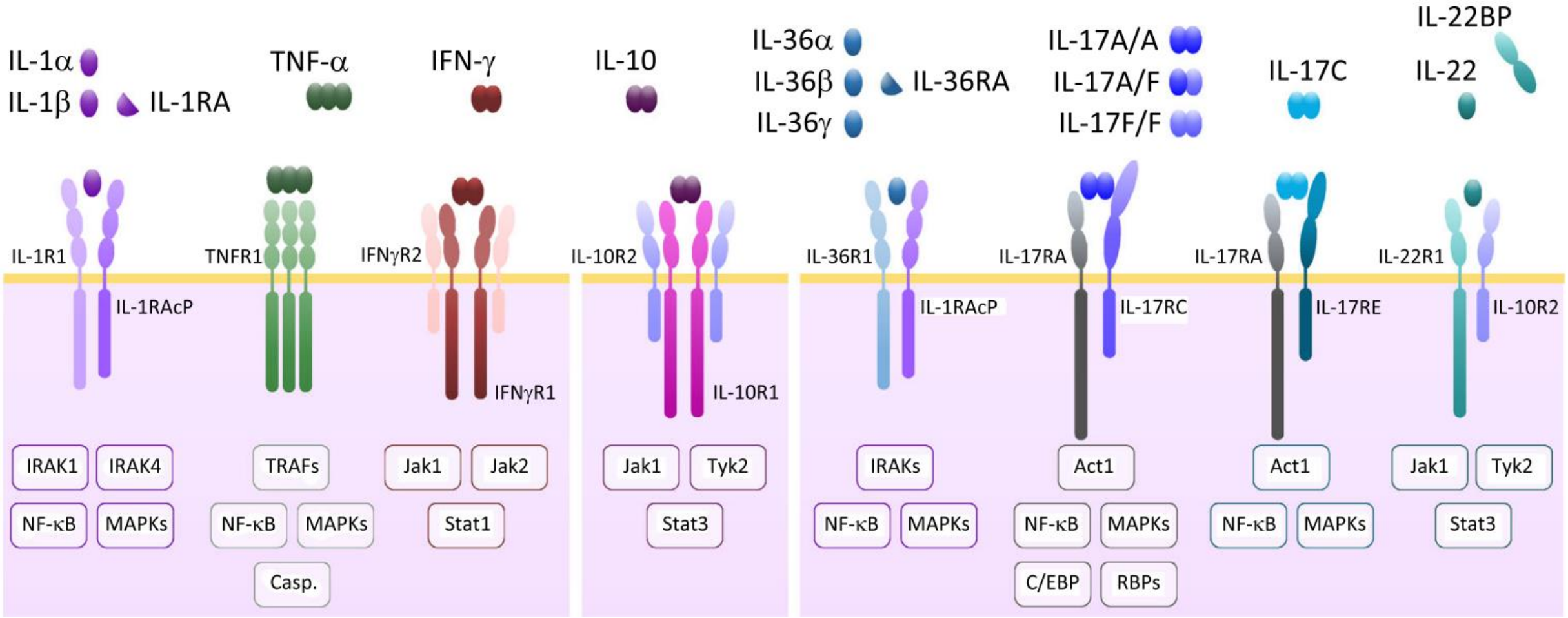
Erken lezyonların normal bakteri florasını barındırken, disbiyoz ve biyofilm oluşumu ile sekonder enfeksiyonları ortaya çıkar



Doğal immun sistemindeki disregulasyon, foliküler ünitede lokalize olan kontrolsüz bir inflamatuvar yanıta ve sonuçta da destrüktif bir inflamasyona yol açar

Wolk et al. Br J Dermatol. 2020 Dec;183(6):999-1010.

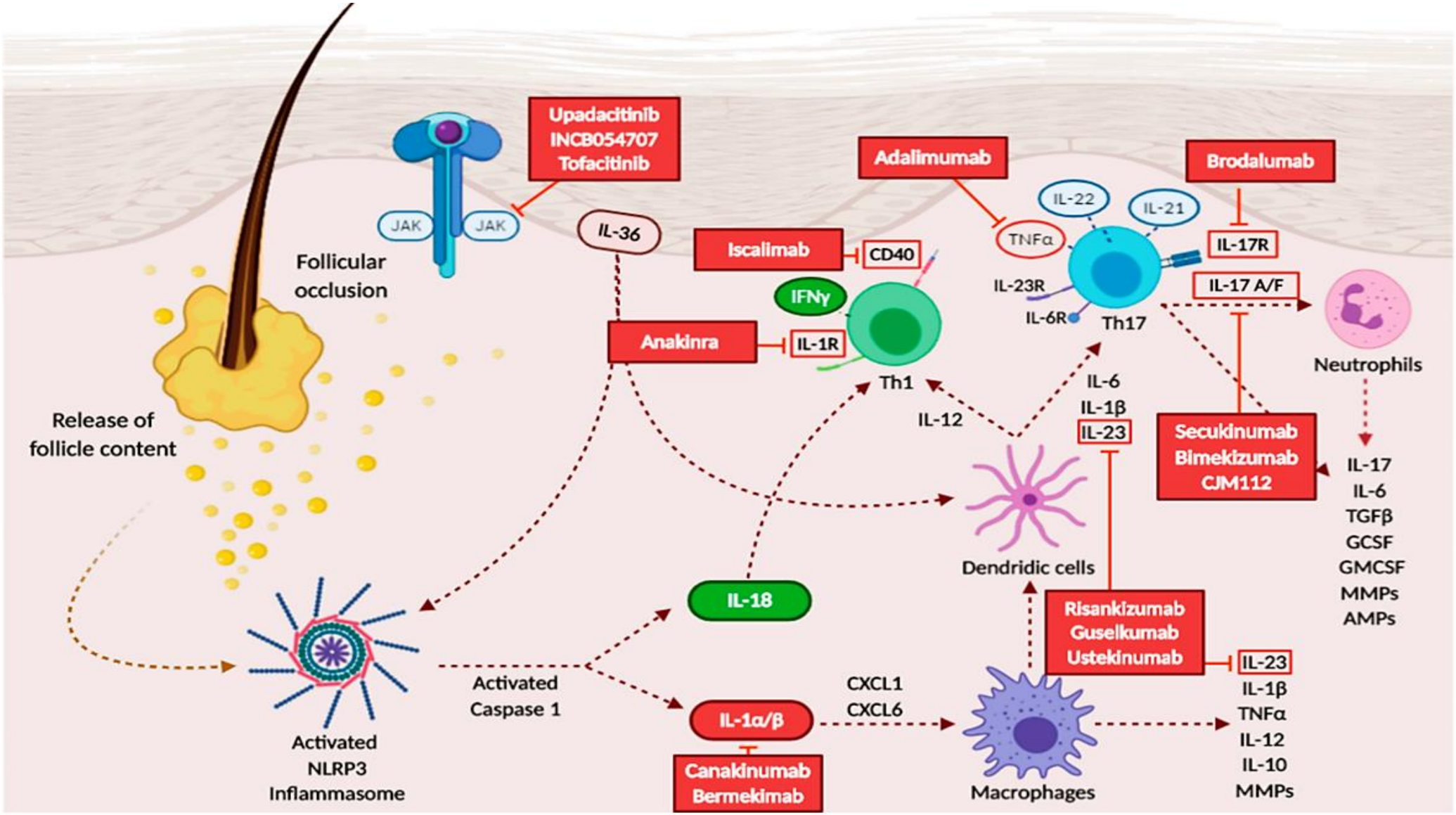
Hidradenitis süpürativa patogenezinde rol oynayan sitokinler ve reseptörleri



HS patogenezinde yer alan sitokinler tarafından kullanılan reseptör komplekslerinin yapıları ve ana sinyalizasyon faktörleri

Wolk et al. Br J Dermatol. 2020 Dec;183(6):999-1010.

HS’de sitokin yolakları ve araştırılan hedefe yönelik tedaviler



Del Duca E, et al . Cytokine Pathways and Investigational Target Therapies in Hidradenitis Suppurativa. Int J Mol Sci. 2020 Nov 10;21(22):8436.

Table 1. Completed interventional studies on target therapies.

NCT Clinical Trial	Intervention	Phase	Study Design	Enrollment
NCT03512275 [13]	Bermekimab 400 mg	Phase 2	•Allocation: Non-Randomized •Intervention Model: Single Group Assignment •Masking: None (Open Label)	42
NCT03960268 [14]	Brodalumab	Phase 1	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	10
NCT03607487 [15]	INCB054707 Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Triple	36
NCT03569371 [16]	INCB054707	Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	10
NCT03248531 [17]	Bimekizumab Adalimumab Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	90
NCT01516749 [18]	Anakinra	Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	6
NCT02421172 [19]	CJM112 Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Double (Participant, Investigator)	66
NCT00795574 [20]	Infliximab Placebo Comparator	Phase 2	•Allocation: Randomized •Intervention Model: Crossover Assignment •Masking: Quadruple	38
NCT00329823 [21]	Etanercept sc 50 mg per week for 12 weeks	Phase 2	•Allocation: Non-Randomized •Intervention Model: Single Group Assignment •Masking: None (Open Label)	10
NCT03628924 [22]	Guselkumab dose 1 Guselkumab dose 2 Guselkumab dose 3 IFX-1	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Double (Participant, Investigator)	184
NCT03001622 [23]		Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	12
NCT03049267 [24]	Apremilast Placebo Oral Tablet	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Double (Participant, Investigator)	20
NCT03099980 [25]	Secukinumab	Phase 1	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	20

Table 1. *Cont.*

NCT Clinical Trial	Intervention	Phase	Study Design	Enrollment
NCT00107991 [26]	Etanercept	Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	15
NCT02904902 [27]	Adalimumab	Phase 3	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	15
NCT02643654 [28]	MABp1 Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	20
NCT02695212 [29]	Apremilast	Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	20
NCT01704534 [30]	Ustekinumab	Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	20
NCT03487276 [31]	IFX-1 Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	179
NCT01558375 [32]	Anakinra Water for injection	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	20
NCT01635764 [33]	Adalimumab	Phase 3	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	508
NCT02808975 [34]	Adalimumab Placebo	Phase 4	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	206
NCT00918255 [35]	Adalimumab Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	154
NCT01468207 [36]	Adalimumab placebo	Phase 3	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Double (Participant, Investigator)	307
NCT01468233 [37]	Adalimumab placebo	Phase 3	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Double (Participant, Investigator)	326
NCT00827996 [38]	Adalimumab	Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	10
NCT04018599 [39]	40 mg MSB11022	Phase 1	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: None (Open Label)	216

HS'DE HEDEF TEDAVILER ILE ILGILI DEVAM EDEN ÇALIŞMALAR

Table 2. Recruiting interventional studies on target therapies.

NCT Clinical Trial	Intervention	Phase	Study Design	Enrollment
NCT03512275 [13]	CFZ533 LY006 Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	90
NCT03926169 [40]	Risankizumab Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	220
NCT04430855 [41]	Upadacitinib Placebo	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	60
NCT04242498 [42]	Bimekizumab Placebo	Phase 3	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Quadruple	460
NCT04179175 [43]	Secukinumab	Phase 3	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Triple	745
NCT03713632 [44]	Secukinumab Placebo	Phase 3	•Allocation: N/A •Intervention Model: Parallel Assignment •Masking: Triple	471
NCT04092452 [45]	PF-06650833, Placebo PF-06700841 PF-06826647	Phase 2	•Allocation: Randomized •Intervention Model: Parallel Assignment •Masking: Triple	192
NCT04246372 [46]	Tofacitinib	Phase 2	•Allocation: N/A •Intervention Model: Single Group Assignment •Masking: None (Open Label)	46

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Review

Cytokine Pathways and Investigational Target Therapies in Hidradenitis Suppurativa

Ester Del Duca [1,*,†], Paola Morelli [1,†], Luigi Bennardo [1,†], Cosimo Di Raimondo [2] and Steven Paul Nisticò [1]

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2 Department of Dermatology, University of Rome Tor Vergata, 00133 Rome, Italy; cosimodiraimondo@gmail.com
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† These authors equally contributed.

Received: 7 September 2020; Accepted: 6 November 2020; Published: 10 November 2020

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HS'DE ARAŞTIRILAN HEDEF ILAÇLAR

Table 3. Recruiting interventional studies on target therapies.

Cytokines	Drugs	Quality of Evidence
anti-TNF-α	Adalimumab [33–38]	A
	Infliximab [20]	B
	Etanercept [26]	B
anti-IL-1	Anakinra [18]	B
	MEDI8968	Ongoing Trial
	Canakinumab	C
	Bermekimab [13]	B
anti-IL-12/23	Ustekinumab [30]	Ongoing Trial
anti-IL-23	Guselkumab [22]	Ongoing Trial
	Risankizumab [40]	Ongoing Trial
anti-IL-17	Secukinumab [43,44]	Ongoing Trial
	CJM112 [19]	Ongoing Trial
	Bimekizumab [42]	Ongoing Trial
	Brodalumab [14,16]	Ongoing Trial
anti-PDE-4	Apremilast [24]	B
anti-C5a	IFX-1 [31]	Ongoing Trial
anti-CD20	Rituximab	C
anti-CD40	Iscalimab [13]	Ongoing Trial
anti-JAK	Upadacitinib [41]	Ongoing Trial
	INCB054707 [15,16]	Ongoing Trial
	Tofacitinib [46]	Ongoing Trial

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Review

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[2] Department of Dermatology, University of Rome Tor Vergata, 00133 Rome, Italy; cosimodiraimondo@gmail.com
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Received: 7 September 2020; Accepted: 6 November 2020; Published: 10 November 2020

check for updates

Abstract: Background: Hidradenitis suppurativa (HS) is a chronic inflammatory skin disease affecting areas with a high density of apocrine glands and characterized by subcutaneous nodules that may evolve into fistulas with pus secretion. Methods: The aim of this review is to investigate all current knowledge on cytokine regulation in the pathogenesis of HS. A systematic literature research using the words "cytokine", "interleukin", "pathway", and "hidradenitis suppurativa" was performed in PubMed/Medline and Scopus/Embase databases. A search of the clinicaltrials.gov website for interventional recruiting and completed trials including the term "hidradenitis suppurativa" was also performed up to August 2020. We will discuss the pathogenetic role of various cytokines in HS and potential therapeutic targets for this debilitating disease. Results: The pathophysiology underlying this complex condition has not been clearly defined. An upregulation of various cytokines, such as tumor necrosis factor alpha (TNF-α), interleukin (IL)-1, IL-17, IL-23, and other molecules seems to be related to this inflammatory condition. Various cells, such as lymphocytes T Helper 1 and 17 and keratinocytes seem to be involved in the genesis of this condition. Conclusions: Several future studies and clinical trials are necessary in order to have new knowledge about HS and to properly treat this complex condition.

Türkiye Klinikleri Dermatoloji Dergisi
Turkiye Klinikleri Journal of Dermatology
Turkiye Klinikleri J Dermatol. 2021;31(1):57-80

BİLİMSEL OLAYLAR SCIENTIFIC EVENTS

DOI: 10.5336/dermato.2020-80699

Türkiye Hidradenitis Süpürativa Tanı ve Tedavi Kılavuzu

The Turkish Guideline for the Diagnosis and Management of Hydradenitis Suppurativa

Murat BORLU[a], Erkan ALPSOY[b], Nilgün ATAKAN[c], Emel Bülbül BAŞKAN[d], Burhan ENGİN[e], Beyza ÖZÇINAR[f], Fatma Figen ÖZGÜR[g], Metin ÇAKMAKÇI[h]

MEDIKAL TEDAVI & CERRAHI YÖNTEMLERI

- ✓ Hastalığın şiddetinin belirlenmesi ve ona göre tedavi rejimine karar verilmeli
- ✓ Şiddetli inflamasyonu baskılamak ve tekrarını önlemek
- ✓ İnflamasyon kontrolünün sağlanmasından sonra cerrahi tedavi
- ✓ Özellikle Hurley evre 2 ve evre 3 HS ’de cerrahi tedavilerden destek alınmalı
- ✓ Apse drenajı, unroofing ve geniş lokal eksizyon

Türkiye Klinikleri Dermatoloji Dergisi
Turkiye Klinikleri Journal of Dermatology
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HS tedavisi 3 basamakta planlanmıştır

1. Basamak tedaviler:
- Topikal klindamisin
- Oral klindamisin/rifampisin
- Oral tetrasiklin
- Adalimumab
- Cerrahi
- Lazer
- Yoğun Atımlı Işık [Intense Pulsed Light (IPL)]

2. Basamak tedaviler
- Asitretin
- İnfliksimab
- İntralezyonel kortikosteroid
- Rezorsinol
- Çinko glukonat

3. Basamak tedaviler
- Dapson
- Siklosporin
- Antiandrojenler
- Kolşisin
- Botulinum toksini

Hidradenitis Süpürativa Tanı ve Tedavi Kılavuzu

Klinik Yanıtın Değerlendirilmesi

TABLO 6: Hidradenitis süpürativa klinik yanıt.
Apse ve inflamatuar nodül sayısında başlangıca göre ≥%50azalma Ve apse ile drene fistül sayısında artış olmaması

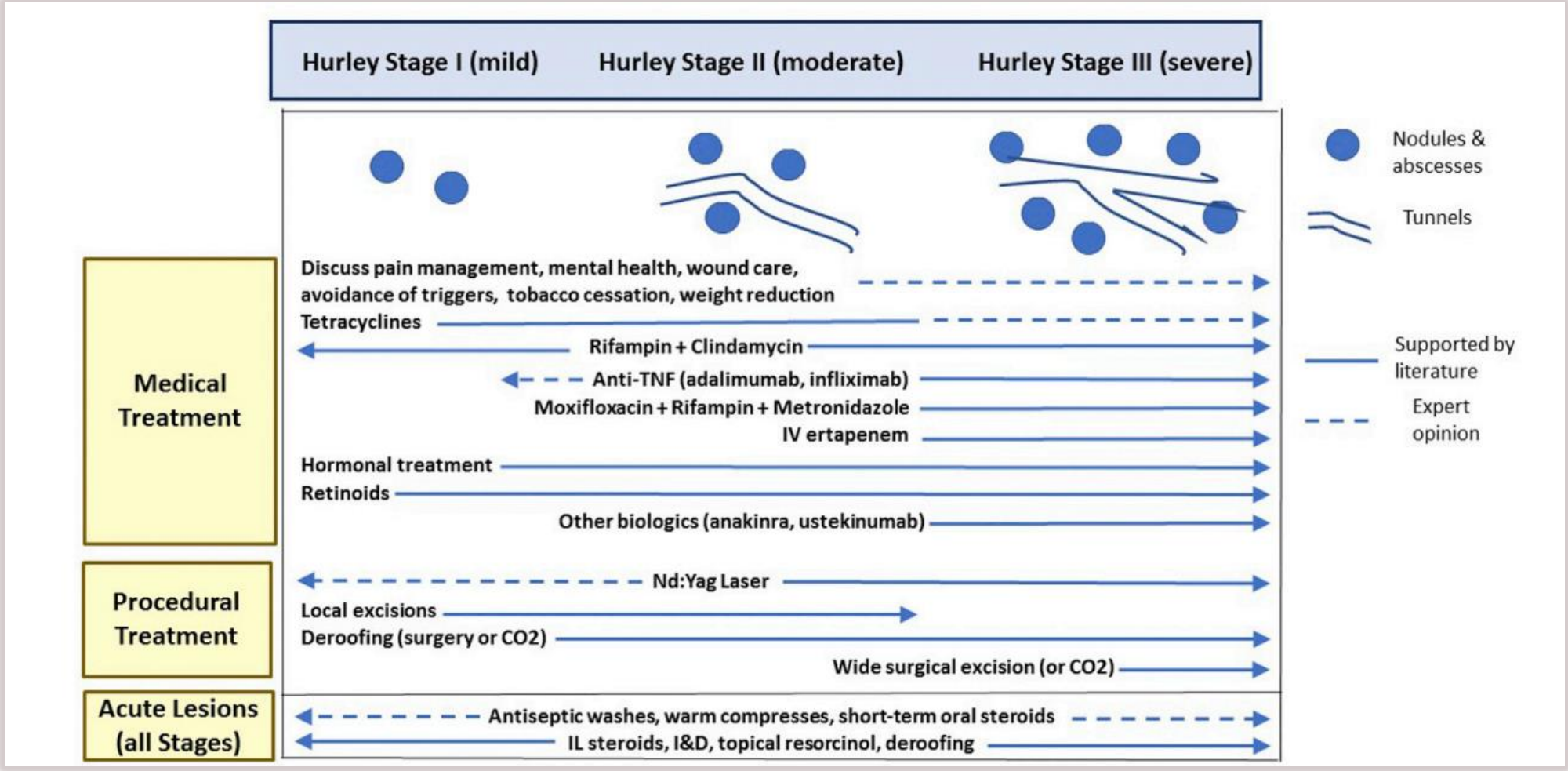
- Visual Analog Skala (VAS)
- Dermatolojik Yaşam Kalite İndeksi (DLQI)

Turkiye Klinikleri J Dermatol. 2021;31(1):57-80

Review > J Am Acad Dermatol. 2019 Jul;81(1):91-101. doi: 10.1016/j.jaad.2019.02.068. Epub 2019 Mar 11.

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

HS GÜNCEL TEDAVİ
Kuzey Amerika Kılavuzu



Review > J Am Acad Dermatol. 2019 Jul;81(1):76-90. doi: 10.1016/j.jaad.2019.02.067. Epub 2019 Mar 11.

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

Recommendations for grading and classification

Clinical performance, Hurley staging, and inflammatory lesion counts (abscesses and inflammatory lesions) are recommended.

Consider clinically following pain VAS and DLQI.

The recommended grading systems in research studies are the HiSCR, HS-PGA, Sartorius score, DLQI, and pain VAS; the HSIA and HSSA can also be considered.

DLQI, Dermatology Life Quality Index; *HiSCR*, Hidradenitis Suppurativa Clinical Response; *HSIA*, Hidradenitis Suppurativa Impact Assessment; *HS-PGA*, Hidradenitis Suppurativa Physician's Global Assessment; *HSSA*, Hidradenitis Suppurativa Symptom Assessment; *VAS*, visual analog scale.

Review > J Am Acad Dermatol. 2019 Jul;81(1):76-90. doi: 10.1016/j.jaad.2019.02.067.
Epub 2019 Mar 11.

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

Recommendations for screening for comorbidities

Perform a review of systems and a physical examination to screen for metabolic syndrome, depression, anxiety, diabetes, PCOS, and tobacco abuse.
Refer patients with additional risk factors for diabetes such as obesity, hypertension, hyperlipidemia, and acanthosis nigricans for HbA1c and/or fasting glucose testing.
Screen for depression, inflammatory bowel disease, autoinflammatory syndromes, and inflammatory arthropathy based on review of systems.

Strength of recommendations for the management and treatment of HS

Recommendations	Strength of recommendation	Level of evidence	References
Grading/classification system			
Hurley staging	B	II	1
HiSCR	A	I	2
HS-PGA	B	II	2
Sartorius	B	II	1
DLQI	A	I	1,3,4
Pain VAS	A	I	1,2,4,5
HSIA	B	II	6
HSSA	B	II	6
Microbiologic testing	C*	III	7-15
Biomarker/genetic testing	Not recommended	III	7,16-33
Comorbidity screening			
Smoking	A	I, II	34-38
Metabolic syndrome	A	I, II	34-38
Type II diabetes	A	I, II	34,35,38-41
Follicular occlusion tetrad	A	II	42
Acne	A	I	43
Depression/anxiety	A	I, II	34,35,37,38,44
Squamous cell carcinoma (of HS-affected skin)	C	II	45
Inflammatory bowel disease	A	II	42,46
Pyoderma gangrenosum and autoinflammatory syndromes†	B	II	37,42
Arthropathies†	B	II	42,45
Polycystic ovarian syndrome†	A	I, II	35,47,48
Impaired sexual health	A	I, II	49-51

Review > J Am Acad Dermatol. 2019 Jul;81(1):76-90. doi: 10.1016/j.jaad.2019.02.067.
Epub 2019 Mar 11.

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

Recommendations for lifestyle modifications and alternative treatments

Counsel smoking cessation.

Screen for obesity and counsel weight loss.

May recommend oral zinc supplements (weak evidence).

Insufficient evidence exists to recommend avoidance of dairy or brewer's yeast, vitamin D supplementation, avoidance of friction, deodorant, and depilation/shaving.

Review > Am J Lifestyle Med. 2021 Jul 2;17(1):152-160. doi: 10.1177/15598276211026592. eCollection 2023 Jan-Feb.

Diet in Dermatology: Review of Diet's Influence on the Conditions of Rosacea, Hidradenitis Suppurativa, Herpes Labialis, and Vitiligo

Marielle Jamgochian [1], Mahin Alamgir [1], Babar Rao [1]

Affiliations + expand

PMID: 36636389 PMCID: PMC9830249 DOI: 10.1177/15598276211026592

Table 1.

Grades of Recommendation.[52]

Grade of Recommendation	Level of Evidence	Type of Study
A	1a	Systematic review of (homogeneous) randomized controlled trials
A	1b	Individual randomized controlled trials (with narrow confidence intervals)
B	2a	Systematic review of (homogeneous) cohort studiesof "exposed" and "unexposed" subjects
B	2b	Individual cohort study/low-quality randomized control studies
B	3a	Systematic review of (homogeneous) case-control studies
B	3b	Individual case-control studies
C	4	Case series, low-quality cohort or case-control studies
D	5	Expert opinions based on non-systematic reviews of results or mechanistic studies

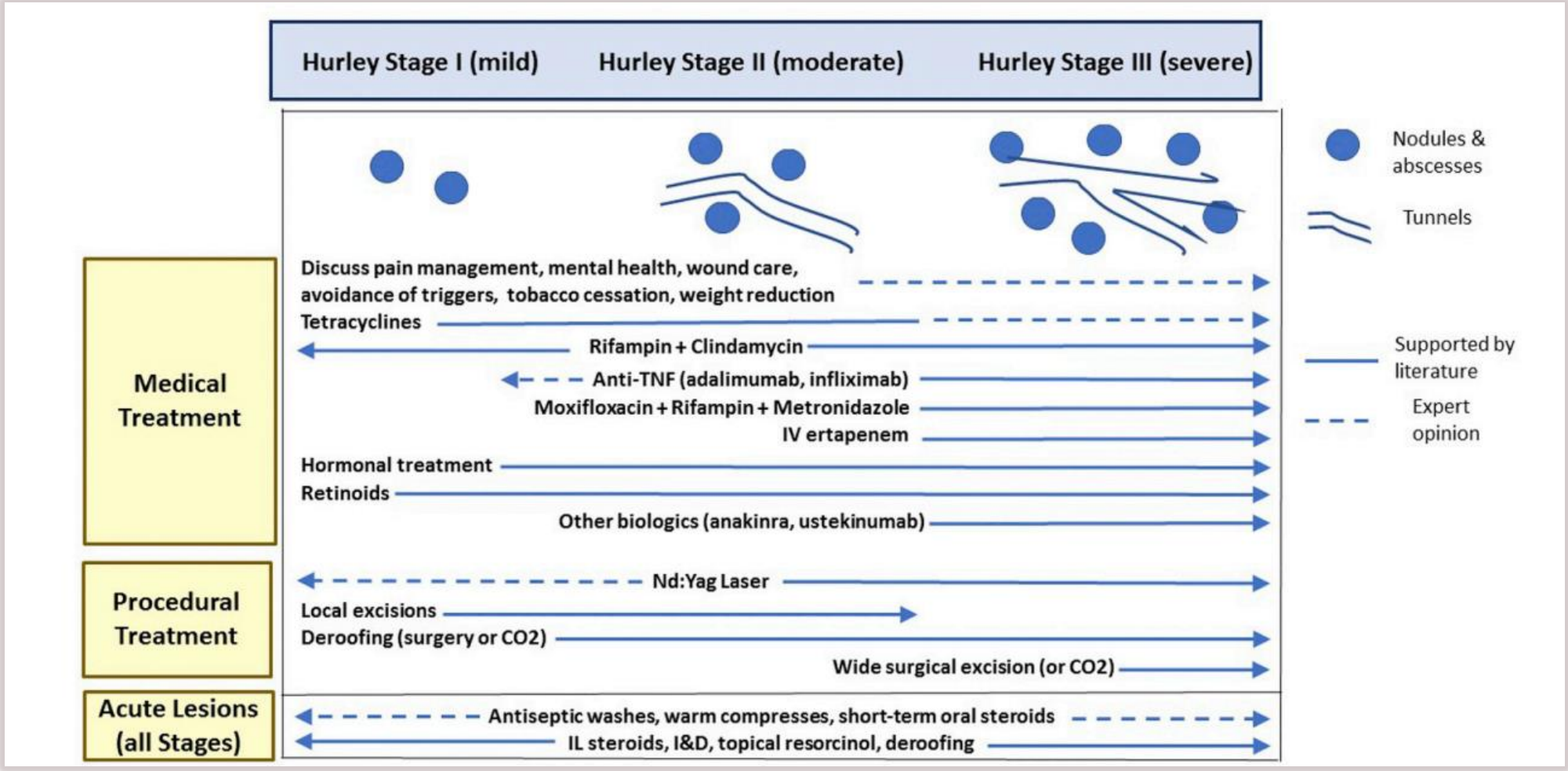
Recommendations for Hidradenitis Suppurativa.

Dietary Modification	Recommendation	Grade and Level of Evidence
Dairy elimination	Insufficient evidence for recommendation	Grade D, level 5
Low glycemic index/Glycemic load diet	Insufficient evidence for recommendation	Grade D, level 5
Brewer's yeast free	Insufficient evidence for recommendation for patients without yeast sensitivity	Grade C, level 4
Weight loss—Bariatric surgery	Insufficient evidence for recommendation	Grade B, level 2b
Zinc supplementation	Yes	Grade B, level 2a
Vitamin D supplementation	Yes, if vitamin D deficient	Grade B, level 2b

Review > J Am Acad Dermatol. 2019 Jul;81(1):91-101. doi: 10.1016/j.jaad.2019.02.068. Epub 2019 Mar 11.

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

HS GÜNCEL TEDAVİ
Kuzey Amerika Kılavuzu



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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

Table II. Recommendations for topical and intralesional therapies

Topical clindamycin may reduce pustules in HS, but it carries a high risk of bacterial resistance.

Resorcinol 15% cream is recommended but may induce contact dermatitis.

Washing with chlorhexidine, zinc pyrithione, or other antibacterial washes is supported by expert opinion.

Intralesional corticosteroid for inflamed lesions is recommended on the basis of weak evidence for short-term control of HS flares.

Table III. Recommendations for systemic antibiotics

Tetracyclines are recommended in mild-to-moderate HS for a 12-week course or as long-term maintenance when appropriate.

Clindamycin and rifampin in combination is effective as a second-line treatment for mild-to-moderate disease or as a first-line or adjunct treatment in severe disease.

Moxifloxacin, metronidazole, and rifampin in combination are recommended as second- or third-line treatment in moderate-to-severe disease.

Dapsone may be effective for a minority of patients with Hurley stage I or II disease as long-term maintenance therapy.

IV ertapanem is recommended for severe disease as a 1-time rescue therapy or as a bridge to surgery or other long-term maintenance.

Determining the duration and frequency of antibiotic use should balance the benefit received by each patient with the risk of antibiotic resistance. Recurrence following cessation is frequent.

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Table IV. Recommendations for hormonal agents

Hormonal agents, including estrogen-containing combined oral contraceptives, spironolactone, cyproterone acetate, metformin, and finasteride, should be considered in appropriate female patients, either as monotherapy for mild-to-moderate HS or in combination with other agents for more severe disease.

Anecdotal data suggest that progestogen-only contraceptives may worsen HS and should potentially be avoided.

Small samples sizes, variable outcome measures and methods, and reporting bias are major limitations in all described evidence of hormonal therapies.

Table V. Recommendations for retinoids

Results from isotretinoin studies have been mixed. Its use should be considered only as a second- or third-line treatment or in patients with severe concomitant acne.

Acitretin may be superior to isotretinoin for the treatment of HS, but robust comparative studies are lacking. It should be considered a second- or third-line treatment.

Alitretinoin is supported by a single study in women. It is available in Canada and many other countries but not in the United States.

Review > J Am Acad Dermatol. 2019 Jul;81(1):91-101. doi: 10.1016/j.jaad.2019.02.068. Epub 2019 Mar 11.

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

Table VI. Recommendations for immunosuppressants

The available limited evidence does not support the use of methotrexate or azathioprine in the treatment of HS.
Weak evidence supports the use of colchicine in combination with minocycline in refractory mild-to-moderate disease, but not colchicine monotherapy.
Cyclosporine can be considered in patients with recalcitrant moderate-to-severe HS who have failed or are not candidates for standard therapy.
Short-term pulse steroid therapy can be considered for acute flares or to bridge patients to other treatment.
Long-term systemic corticosteroids tapered to the lowest possible dose can be considered in cases of severe HS, as an adjunct therapy in patients with suboptimal response to standard therapy.

Table VII. Recommendations for biologics

Adalimumab at the approved HS dosing is recommended to improve disease severity and quality of life in patients with moderate-to-severe HS.
Infliximab is recommended for moderate-to-severe disease; however, dose-ranging studies are needed to determine the optimal dosage for management.
Anakinra, 100 mg daily, may be effective for HS; however, dose-ranging studies are needed to determine the optimal dosage for management.
Ustekinumab, 45 to 90 mg administered every 12 weeks, may be effective for HS; however, placebo-controlled dose-ranging studies are needed to determine the optimal dosage for management.
The limited available evidence does not support etanercept for the management of HS.

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HS GÜNCEL TEDAVİ
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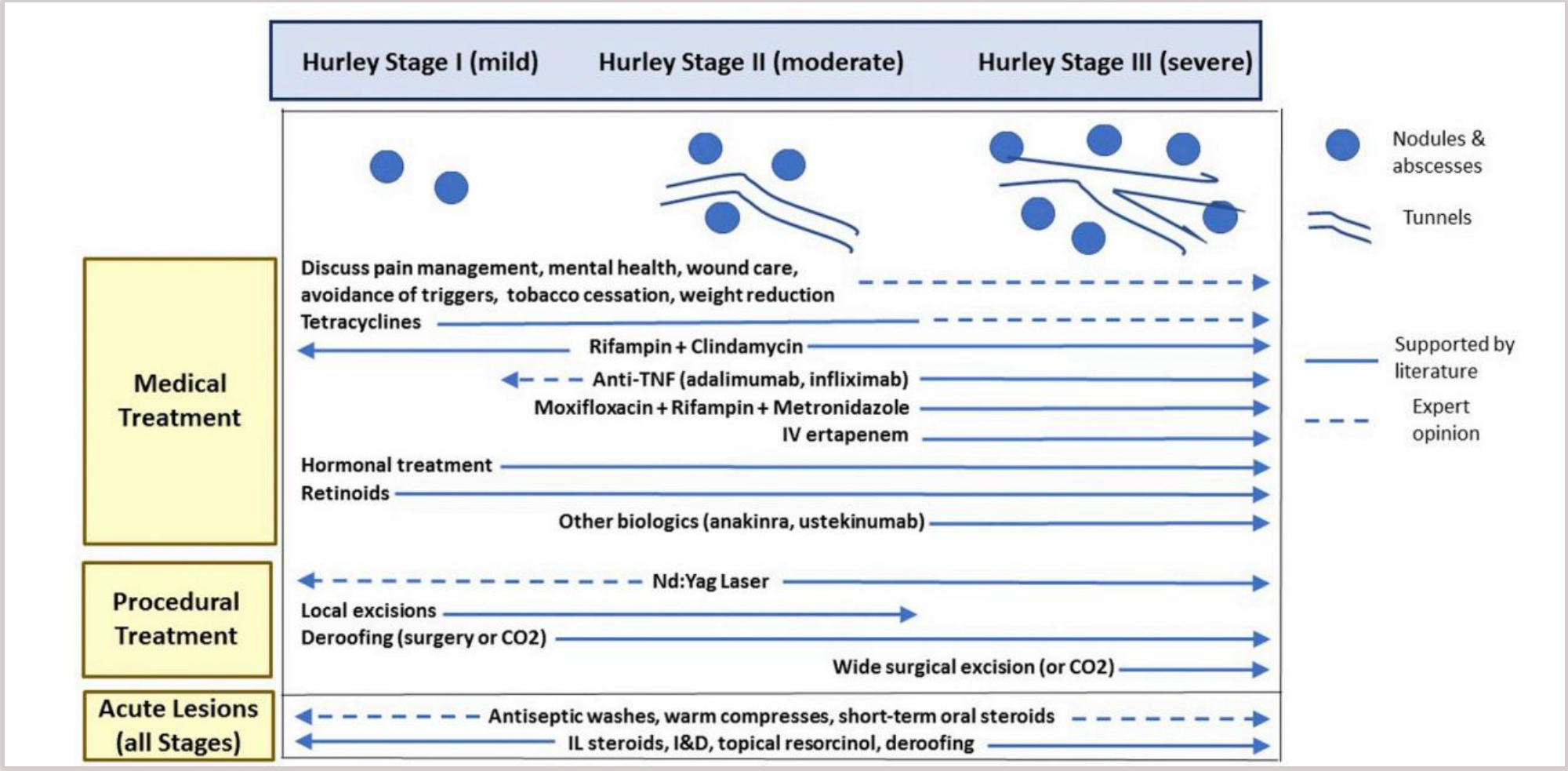


Review > J Am Acad Dermatol. 2019 Jul;81(1):76-90. doi: 10.1016/j.jaad.2019.02.067. Epub 2019 Mar 11.

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

Recommendations for surgical modalities

Recurrent nodules and tunnels may be best treated with deroofing or excision.

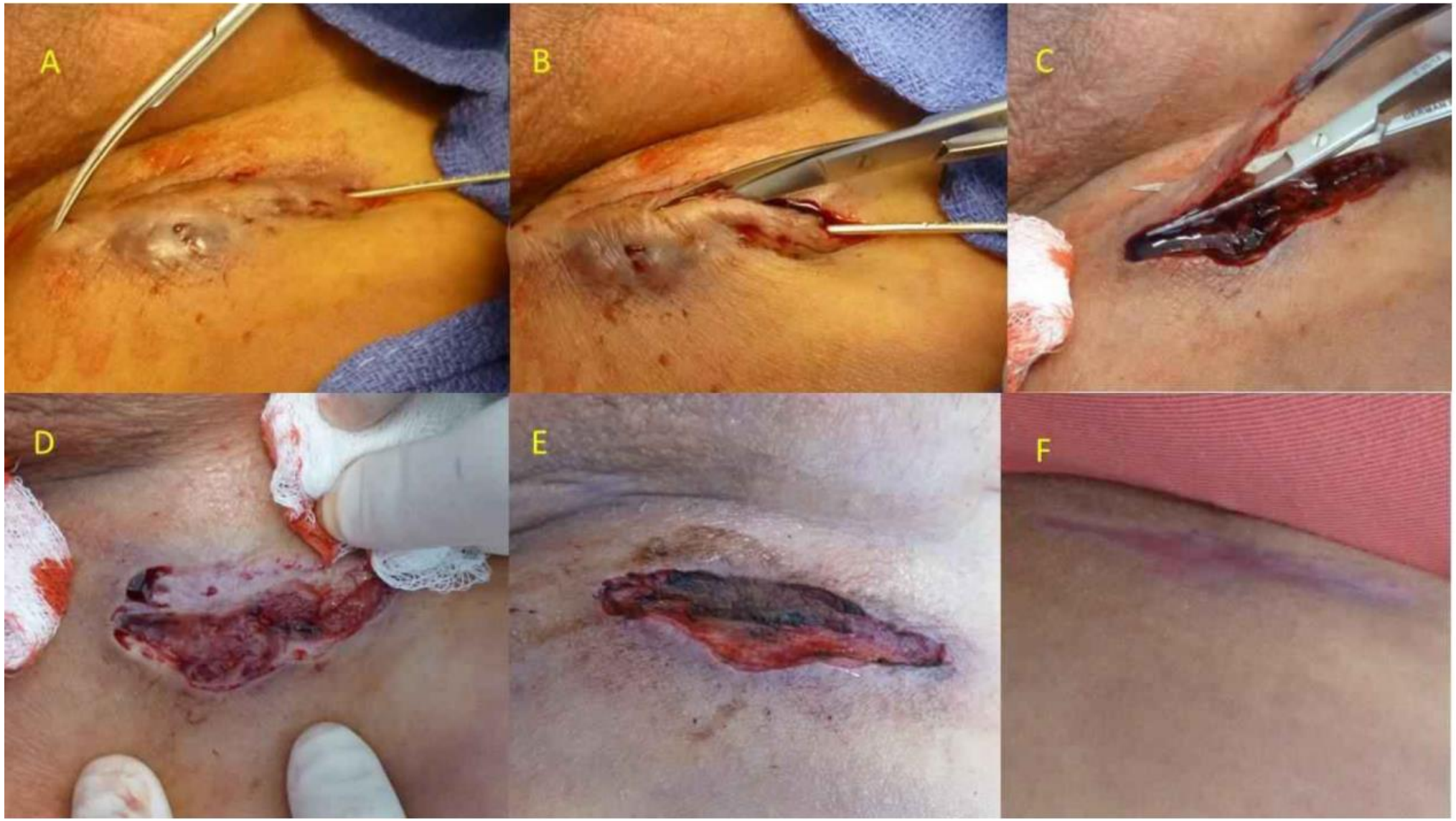
Incision and drainage is recommended only for acute abscesses to relieve pain.

Wide local scalpel, CO_2, or electrosurgical excision (with or without reconstruction) is appropriate for extensive chronic lesions.

Wound healing following surgery may be through secondary intention, primary closure, delayed primary closure, flaps, grafts, and/or skin substitutes.

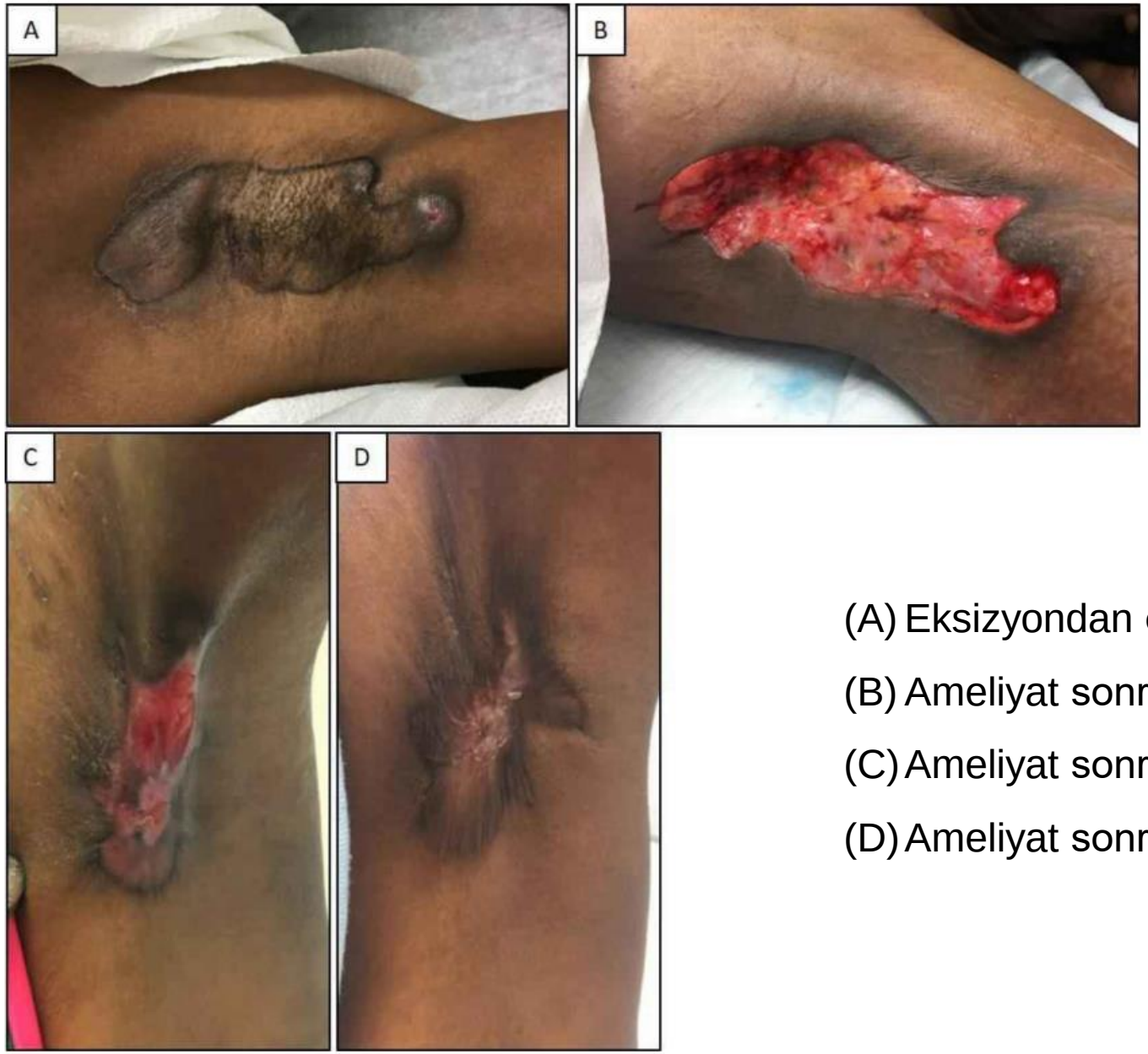
Experience suggests that continuing medical therapy in the perioperative period is likely to be beneficial and poses minimal risk of increased postoperative complications.

Deroofing işlemi



Dermatology. 2020 ; 236(5): 393–412. doi:10.1159/000507323.

HS sinüs traktının cerrahi eksizyonunu ve yara iyileşmesi



(A) Eksizyondan önce

(B) Ameliyat sonrası 4. gün

(C) Ameliyat sonrası 6. hafta

(D) Ameliyat sonrası 4. ay

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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

Recommendations for light, laser, and energy sources

An Nd:YAG laser is recommended in patients with Hurley stage II or /III disease on the basis RCT and case series data and in patients with Hurley stage I disease on the basis of expert consensus.

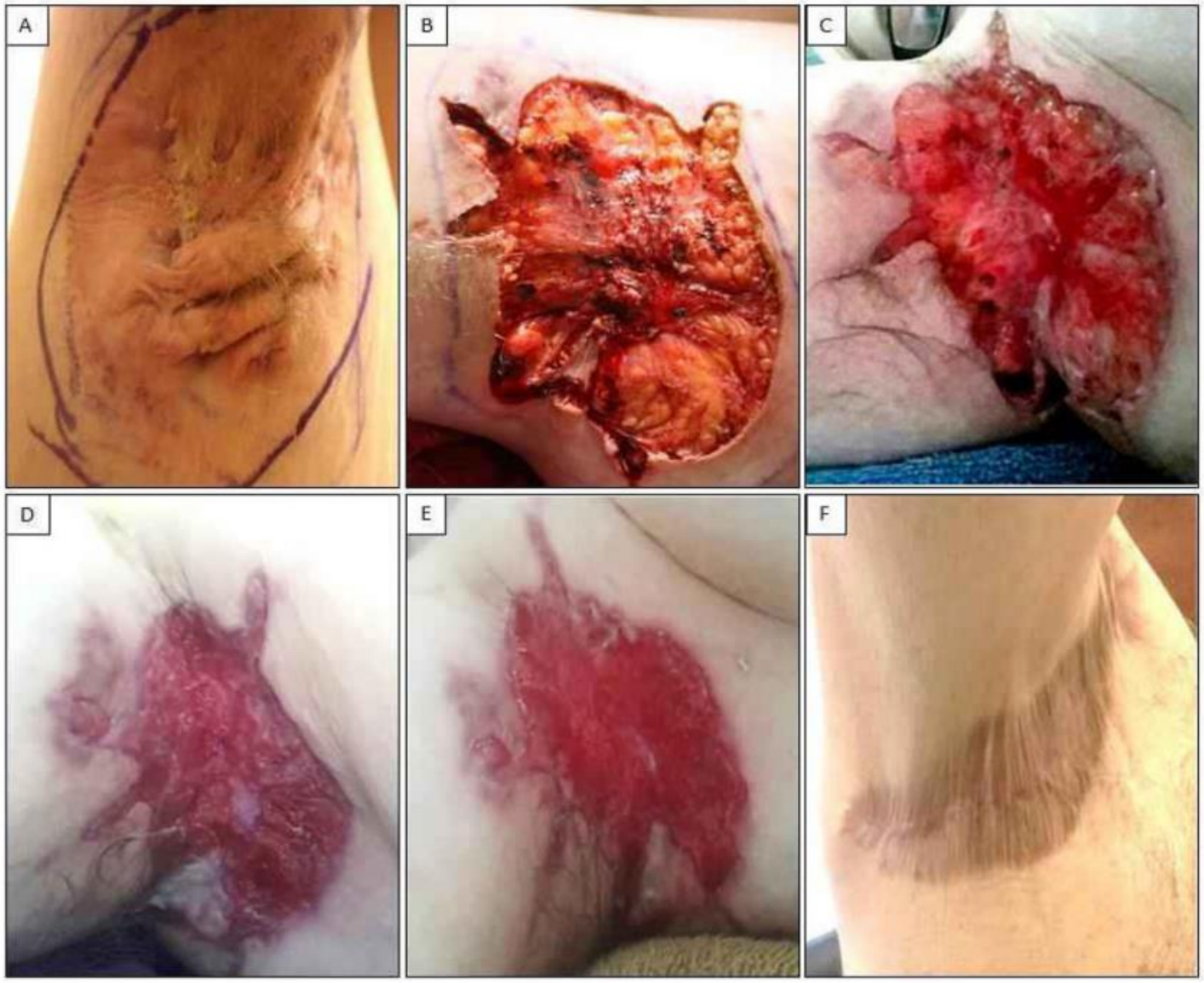
Other wavelengths that are used for follicular destruction are recommended on the basis of lower-quality evidence.

CO_2 laser excision is recommended in patients with Hurley stage II or III disease with fibrotic sinus tracts.

External beam radiation and PDT have a limited role in the management of patients with HS.

HS, Hidradenitis suppurativa; *Nd:YAG*, neodymium-doped yttrium-aluminum-garnet; CO_2, carbon dioxide; RCT, randomized controlled trial; PDT, photodynamic therapy.

Sağ aksiller CO2 eksizyonu ve yara iyileşmesi



(A) Eksizyondan önce

(B) Ameliyattan hemen sonra

(C) Ameliyat sonrası 3. gün

(D) Ameliyat sonrası 2. hafta

(E) Ameliyat sonrası 3. hafta

(F) Ameliyat sonrası 30. hafta

Dermatology. 2020 ; 236(5): 393–412. doi:10.1159/000507323.

Review > J Am Acad Dermatol. 2019 Jul;81(1):91-101. doi: 10.1016/j.jaad.2019.02.068. Epub 2019 Mar 11.

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

Table VIII. Recommendations for pediatric and pregnant patients

Perform laboratory evaluation for precocious puberty in pediatric patients with HS who are age 11 or younger when other suspicious physical examination findings are present.
Avoid tetracyclines in children younger than 9 years and acitretin in female patients during the childbearing years.
Avoid retinoids, hormonal agents, most systemic antibiotics, and most immunosuppressive medications in pregnant patients.
Use topical treatments, procedures, and safe systemic agents in pregnant patients.

Review > J Am Acad Dermatol. 2021 Jul;85(1):187-199. doi: 10.1016/j.jaad.2020.09.039. Epub 2020 Sep 17.

Pain management in hidradenitis suppurativa and a proposed treatment algorithm

Kevin T Savage [1], Vinita Singh [2], Zarine S Patel [3], Christine A Yannuzzi [4], Anne Marie McKenzie-Brown [2], Michelle A Lowes [5], Lauren A V Orenstein [6]

Affiliations + expand

PMID: 32950543 PMCID: PMC8176324 DOI: 10.1016/j.jaad.2020.09.039

Acute Pain

Pain Severity/Refractoriness

- Acetaminophen 500 mg q4-6h prn
- Topical NSAID

Offer above therapies plus:

- Systemic NSAID
- Intralesional triamcinolone
- Incision and drainage of abscesses‡

‡For symptomatic relief only, as lesions will recur.

Offer above therapies plus:

- Tramadol* (1st line opioid) or
- Other short acting opioid* (2nd line) for breakthrough

*Usually, maximum of 20 pills/episode

Chronic Pain

Pain Refractoriness

HS Disease-Directed Therapy
and
Screen for pain severity & psychological comorbidities

Non-Pharmacologic Pain Management
Physical therapy Wound Care Behavioral Health

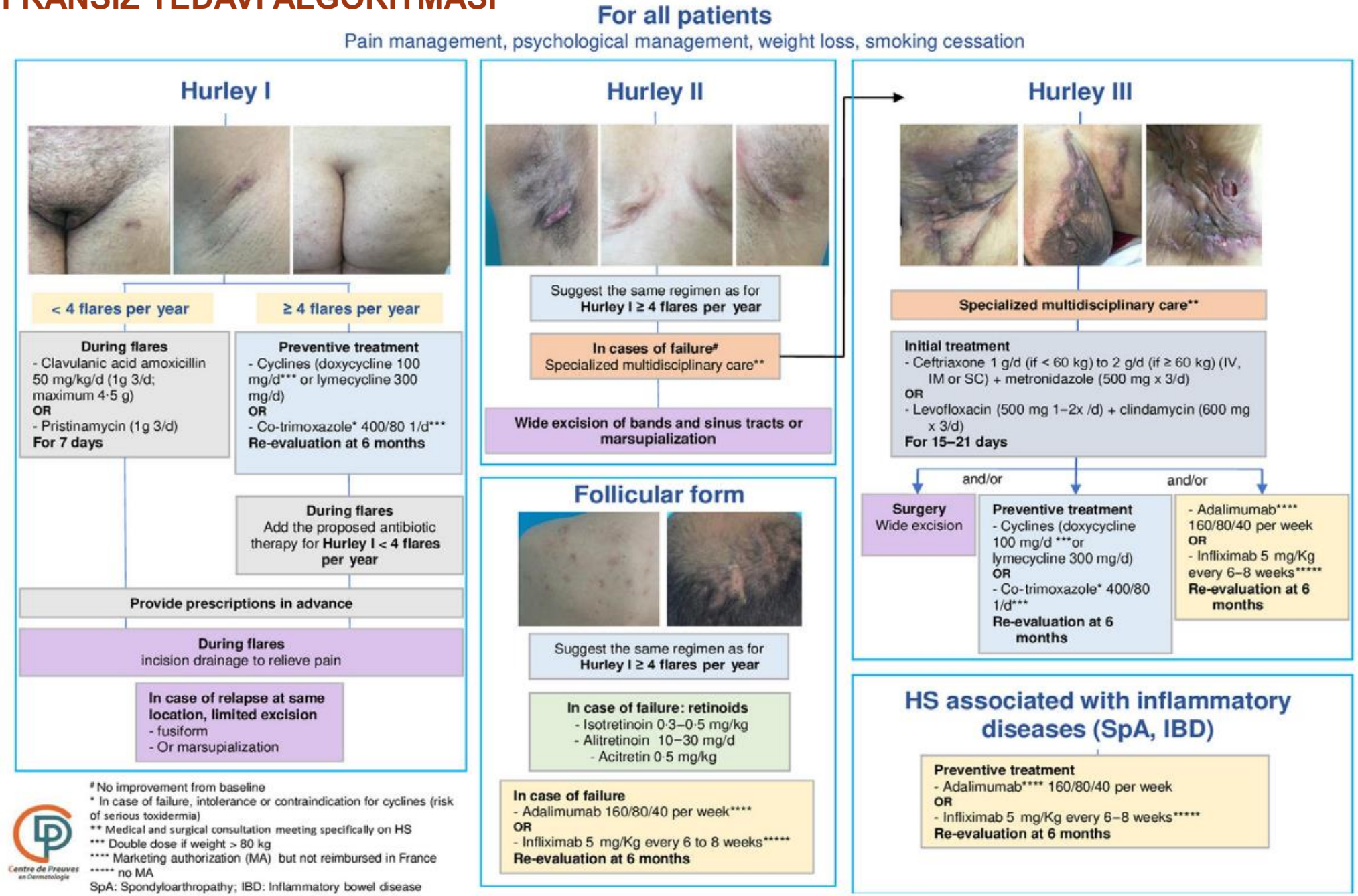
Pharmacologic Analgesia

Nociceptive Pain	Neuropathic Pain
NSAID *May add acetaminophen*	Gabapentin and/or Duloxetine
Duloxetine Nortriptyline	Pregabalin Venlafaxine Nortriptyline

Adjunctive Therapies
For mild pain or as add on to 1st or 2nd line systemic therapy
Topical NSAIDs Topical Lidocaine

Pain Specialist Referral
Failed ≥2 pharmacologic agents
Medically refractory HS with debilitating pain
Ongoing chronic opioid use

FRANSIZ TEDAVİ ALGORİTMASI



British Journal of Dermatology (2021) 184, pp954–983.

Review > Dermatology. 2021;237(1):81-96. doi: 10.1159/000503605. Epub 2019 Oct 23.

A Comparison of International Management Guidelines for Hidradenitis Suppurativa

Aleksi J Hendricks [1], Jennifer L Hsiao [2], Michelle A Lowes [3], Vivian Y Shi [4]

Affiliations + expand

PMID: 31645040 DOI: 10.1159/000503605

Free article

Table 1. Hidradenitis suppurativa management guideline publications

Organization	Year	Publication	In-text abbreviation
European Academy of Dermatology and Venereology	2015	European S1 guideline for the treatment of hidradenitis suppurativa/ acne inversa [25]	European S1
European HS Foundation	2016	Evidence-based approach to the treatment of hidradenitis suppurativa/acne inversa, based on the European guidelines for hidradenitis suppurativa [24]	European HS Foundation
Swiss consensus group	2017	Swiss practice recommendations for the management of hidradenitis suppurativa/acne inversa [26]	Swiss
Canadian Dermatology Association consensus group	2017	Approach to the management of patients with hidradenitis suppurativa: a consensus document [23]	Canadian consensus
British Association of Dermatologists	2018	British Association of Dermatologists guidelines for the management of hidradenitis suppurativa (acne inversa) 2018 [18]	British
Canadian Dermatology Association	2018	Hidradenitis suppurativa: A novel model of care and an integrative strategy to adopt an orphan disease [22]	Canadian Dermatology Association
HS ALLIANCE	2019	Hidradenitis suppurativa/acne inversa: a practical framework for treatment optimization - systematic review and recommendations from the HS ALLIANCE working group [21]	HS ALLIANCE
US and Canadian HS Foundations	2019	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 [19] Part II: topical, intralesional, and systemic medical management [20]	North American
Brazilian Society of Dermatology	2019	Consensus on the treatment of hidradenitis suppurativa – Brazilian Society of Dermatology [27]	Brazilian

Table 2. Topical and intralesional therapy for HS: guideline recommendations

Modality	Recommendations per guideline								
	British Association of Dermatologists [18]	North American (US and Canadian HS Foundations) [20]	HS ALLIANCE [21]	Canadian Dermatology Association [22]	Canadian consensus group [23]	European HS Foundation [24]	European S1 [25]	Swiss consensus group [26]	Brazilian Society of Dermatology [27]
Resorcinol 15% cream	–	Recommended (may induce contact dermatitis)	–	2nd line	Resolve/prevent follicular blockage in mild HS	2nd line	For recurrent lesions in Hurley stage I/II HS BID application during flares	–	Can be useful to shorten mean duration of painful nodule or abscess
Antiseptics	–	Chlorhexidine, benzoyl peroxide zinc pyrithione supported by expert opinion	–	–	–	–	–	Triclosan, ammonium bituminosulfate for all Hurley stages	Advise on adequate local hygiene; no need for soaps with high concentrations of chlorhexidine
Clindamycin 1% solution	Consider in patients with HS	May reduce pustules, carries risk of bacterial resistance	Recommended BID × 3 months in Hurley I/II with localized lesions, especially without deep inflammatory lesions	1st line tx for mild HS; 1% lotion applied BID × 12 weeks	Use as topical anti-inflammatory agent and to prevent secondary infection[1]	Recommended BID × 3 months as 1st line tx in Hurley stage I/ mild stage II, especially without deep inflammatory lesions[1]	BID × 3 months in localized Hurley stage I or mild stage II; can be prolonged if clinically indicated[1]	Recommended in Hurley I/II HS to avoid bacterial superinfection and reduce inflammation	Recommended for Hurley stage I or in cases of superficial lesions during exacerbation
Intralesional corticosteroid injections	Consider for individual lesions in the acute phase	Injection of inflamed lesions or short-term control of flares	May be helpful for acute inflammatory nodules in combination with other tx at all Hurley stages	2nd line	TAC 5–10 mg/mL for rapid reduction of inflammation in acute flares or as rescue therapy adjunctive to systemic tx	2nd line	TAC 5–10 mg/mL for rapid reduction of inflammation in acute flares and for recalcitrant nodules and sinus tracts	Injection of inflamed nodules in Hurley I/II HS	TAC 5–10 mg/mL for tx of acute inflammation and abscesses, refractory nodules, tunnels

BID, twice daily; HS, hidradenitis suppurativa; TAC, triamcinolone acetonide; tx, treatment; –, not specifically mentioned. [1] Recommendation based on randomized controlled trial(s) in HS.

Table 3. Systemic therapy for HS: guideline recommendations

Modality	Recommendations per guideline								
	British Association of Dermatologists [18]	North American (US and Canadian HS Foundations) [20]	HS ALLIANCE [21]	Canadian Dermatology Association [22]	Canadian consensus group [23]	European HS Foundation [24]	European S1 [25]	Swiss consensus group [26]	Brazilian Society of Dermatology [27]
Antibiotics Tetracyclines	Doxycycline or lymecycline for ≥12 weeks. Consider tx breaks to assess efficacy and decrease risk of antimicrobial resistance	In mild-moderate HS × 12 weeks or as long-term maintenance[1]	Recommended in Hurley I/II × 12 weeks[1]	500 mg BID × 4 months for mild HS (1st line)[1]	500 mg BID[1]	500 mg BID as 1st line tx in moderate HS or widespread Hurley I/II for up to 4 months[1]	500 mg BID × 4 months; can be prolonged if clinically indicated[1]	Doxycycline 50–200 mg daily × 3–6 months in Hurley I/II HS	500 mg BID × 10–12 weeks, 1–2 courses
Clindamycin + rifampicin	Clindamycin 300 mg BID and rifampicin 300 mg BID × 10–12 weeks for patients unresponsive to oral tetracyclines[1]	2nd line for mild-moderate HS, 1st line or adjunct for severe HS[1]	Clindamycin and rifampicin 300 mg each BID × 10 weeks[1]	Clindamycin 300 mg BID + rifampicin 600 mg daily × 10 weeks in moderate HS or mild-moderate HS unresponsive to tetracyclines (1st line)[1]	Clindamycin 300 mg BID + rifampicin 600 mg once daily or 300 mg BID × 10 weeks[1]	Clindamycin 300 mg BID + rifampicin 600 mg once daily or 300 mg BID × 10 weeks as 1st line tx for moderate PGA[1]	Clindamycin 300 mg BID + rifampicin 600 mg once daily or 300 mg BID ×10 weeks[1]	Clindamycin and rifampicin each 300 mg BID × 3 months	Clindamycin 300 mg BID + rifampicin 600 mg daily × 10 weeks
Metronidazole/ moxifloxacin/ rifampin	–	2nd/3rd line in moderate-severe HS	Rifampicin 10 mg/kg once daily + moxifloxacin 400 mg once daily + metronidazole 500 mg TID (× 6 weeks only) may have efficacy in Hurley I/II patients	–	–	–	Effective in tx-resistant Hurley stage II/III HS at 12 weeks	–	–
Dapsone	Consider in HS unresponsive to abx therapies	May be effective for minority of Hurley I/II patients as long-term maintenance	Evidence from single study	3rd line	Efficacy in HS reported in case reports	3rd line	Reserve for patients with mild-moderate HS when standard 1st and 2nd line agents fail	50–150 mg daily in refractory Hurley II/III disease	May be considered after failure of 1st or 2nd line abx
Ertapenem	–	For severe disease as one-time rescue, bridge to surgery or maintenance tx	IV ertapenem 1 g/day in selected patients with severe HS × 6 weeks	–	–	–	–	–	–
Supplements Zinc	Insufficient evidence	–	Combination tx of oral zinc gluconate 30 mg TID + topical triclosan 2% in Hurley I/II	Zinc gluconate as 2nd line tx	Zinc sulfate recommended as adjuvant therapy	Zinc gluconate as 2nd line tx	Zinc gluconate initiated at 90 mg/day as maintenance tx in Hurley I/II	Zinc gluconate 30 mg TID as adjunct to abx in Hurley I/II HS	30mg TID as maintenance tx in Hurley stage I/II HS Long-term use limited by zinc-induced impairment of iron and copper absorption

Table 3. Systemic therapy for HS: guideline recommendations

Modality	Recommendations per guideline								
	British Association of Dermatologists [18]	North American (US and Canadian HS Foundations) [20]	HS ALLIANCE [21]	Canadian Dermatology Association [22]	Canadian consensus group [23]	European HS Foundation [24]	European S1 [25]	Swiss consensus group [26]	Brazilian Society of Dermatology [27]
Retinoids									
Acitretin	0.3–0.5 mg/kg daily in men and nonfertile women unresponsive to abx	Consider as 2nd/3rd line tx; contraindicated in women of reproductive potential	3rd line tx for mild-moderate HS	2nd line	0.25–0.88 mg/kg daily can be initiated in early HS stages, may be used in chronic stages with sinus tracts and scarring	2nd line	Can be initiated in early HS stages, may be used in chronic stages with sinus tracts and scarring Dosing ranges from 0.25 to 0.88 mg/kg daily × 3–12 months	0.2–0.5 mg/kg daily in Hurley II/III HS refractory to abx	Preferred over isotretinoin due to higher response rates, but not appropriate in women of childbearing age
Isotretinoin	Do not offer unless concomitant moderate-severe acneiform lesions of face or trunk	Consider only as 2nd/3rd line tx or in patients with severe concomitant acne	–	3rd line	Not proven effective in HS even with concomitant acne	3rd line	Not recommended for use in tx of HS	–	Use of isotretinoin over acitretin justified in women of childbearing age
Biologics									
Adalimumab (anti-TNF-α)	40 mg SC weekly for patients ≥12 years old with moderate-severe HS unresponsive to conventional systemic tx[1]	Recommended at 40 mg SC weekly to improve HS severity and QoL in moderate-severe HS[1]	First choice biologic in moderate-severe HS after failure of conventional tx[1]	160 mg SC week 0, 80 mg week 2, then 40 mg weekly for moderate-severe HS unresponsive to abx (1st line)[1]	40 mg SC weekly for patients with moderate-severe HS[1]	160 mg SC week 0, 80 mg week 2, then 40 mg weekly as 1st line tx for moderate-severe HS[1] Consider other tx modalities if HiSCR not achieved by 16 weeks	40 mg SC weekly for moderate-severe HS[1]	160 mg SC week 0, 80 mg week 2, then 40 mg weekly for Hurley II/III HS refractory to abx	160 mg SC week 0, 80 mg week 2, then 40 mg weekly[1] Once inflammation controlled, consider excision of residual active areas or scarring
Infliximab (anti-TNF-α)	Consider at 5 mg/kg q8 weeks in moderate-severe HS unresponsive to adalimumab	Recommended for moderate-severe HS Dose ranging studies needed to determine optimal dosage	Consider as 2nd line biologic for moderate-severe HS	2nd line[1]	No significant difference vs. placebo in HiSCR[1]	5 mg/kg IV at weeks 0, 2, 6 and q2 months thereafter × 12 weeks as 2nd line in moderate-severe HS unresponsive to adalimumab	5 mg/kg IV at weeks 0, 2, 6, then q2 months[1]	–	5 mg/kg IV at weeks 0, 2, 6, then q2 months[1]

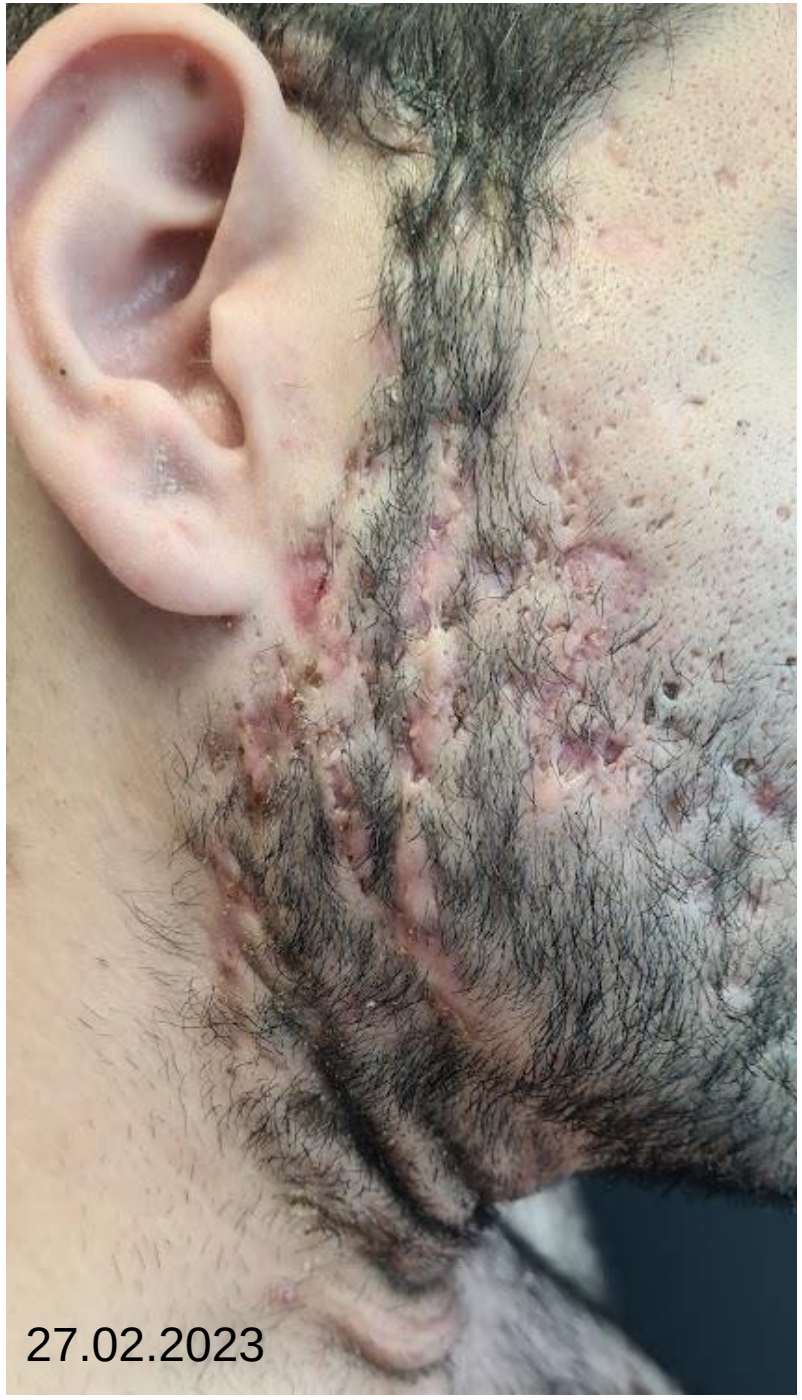
Table 3 (continued)

Modality	Recommendations per guideline								
	British Association of Dermatologists [18]	North American (US and Canadian HS Foundations) [20]	HS ALLIANCE [21]	Canadian Dermatology Association [22]	Canadian consensus group [23]	European HS Foundation [24]	European S1 [25]	Swiss consensus group [26]	Brazilian Society of Dermatology [27]
Anakinra (anti-IL-1)	Insufficient evidence	100 mg daily may be effective; dose ranging studies needed to determine optimal dosage	Consider as 3rd line biologic for moderate-severe HS	–	Significant improvement in disease severity score and HiSCR[1]	–	–	–	Not available in Brazil
Canakinumab (anti-IL-1β)	–	–	–	–	–	–	–	–	Used successfully in sparse care reports
Ustekinumab (anti-IL-12/23)	Insufficient evidence	45–90 mg q12 weeks may be effective; dose ranging studies needed to determine optimal dosage	Potentially effective tx for moderate-severe HS	–	–	–	Three 45 mg SC injections at 0, 4, and 16 weeks with cumulative 33% response rate in 3-patient case series	–	45–90 mg SC q12 weeks; higher dose may be needed for HS tx
Secukinumab (anti-IL-17A)	–	–	–	–	–	–	–	–	Success in a case of severe tx-refractory HS
Etanercept (anti-TNF-α)	Do not offer[1]	Limited evidence does not support use in HS management[1]	Not effective[1]	–	No significant difference vs. placebo[1]	–	No significant difference vs. placebo[1]	–	Variable data on efficacy in HS; unable to draw conclusions about its potential utility
Immunosuppressive agents									
Systemic corticosteroids	–	Short-term steroid pulse can be considered for acute flares or bridge to other tx Long term: taper to lowest possible dose in severe HS	Low-dose prednisolone 10 mg/day (or equivalent) may be effective adjunct tx in recalcitrant HS Use with caution long term	2nd line	–	2nd line	Recommend dose of 0.5–0.7 mg/kg oral prednisolone for short-term use in acute flares, taper over following weeks	Prednisolone 0.5–0.7 mg/kg daily in refractory disease	Short course may be indicated for tx of flares
Cyclosporine					Efficacy in HS reported in case reports	3rd line	Reserved for cases unresponsive to standard 1st, 2nd, or 3rd line tx Reported dosing in HS varies from 2 to 6 mg/kg for 6 weeks to 7 months	2–6 mg/kg daily in refractory disease	Data not robust; consider only as 3rd line option for long-term control of inflammation

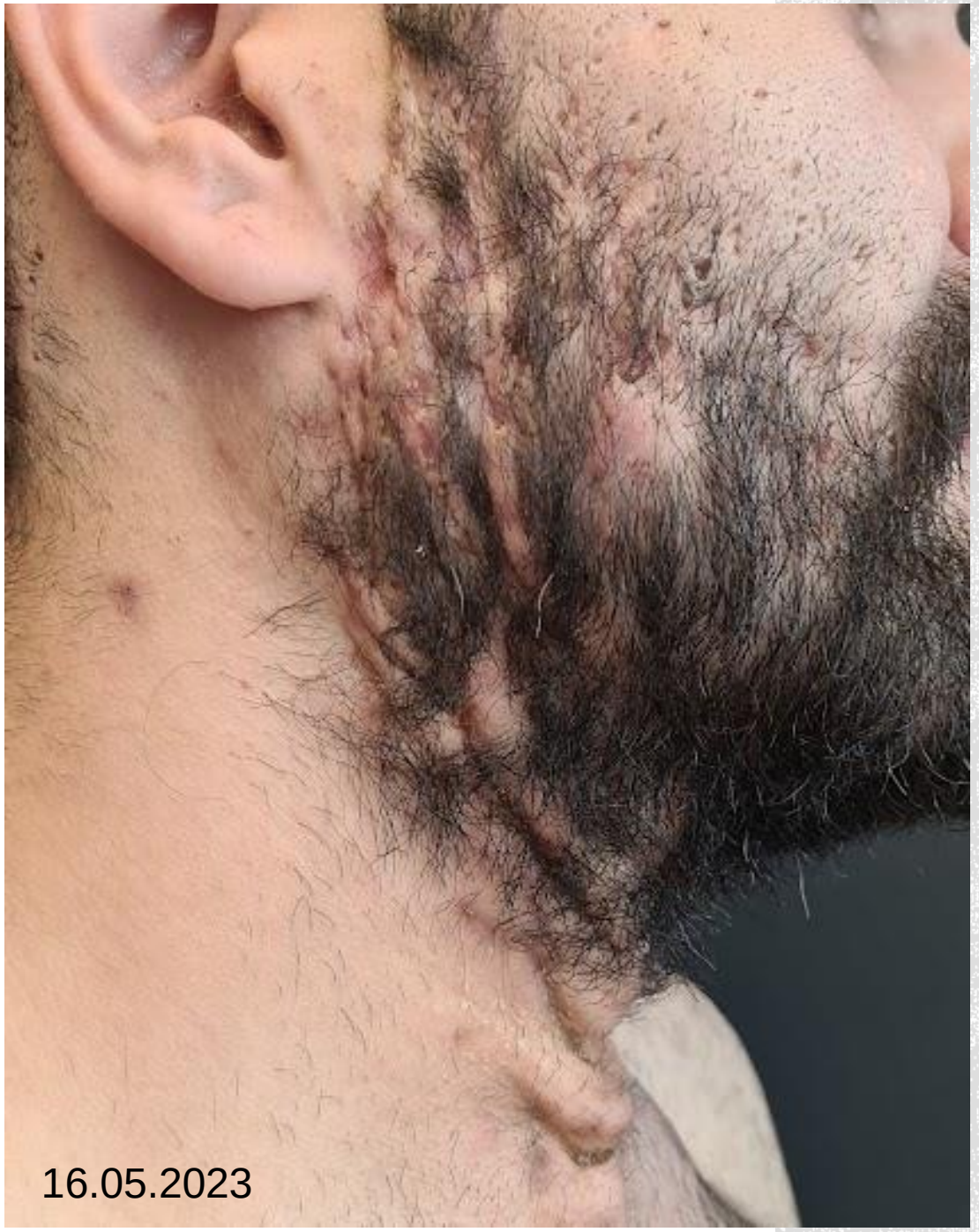
Table 3 (continued)

Modality	Recommendations per guideline								
	British Association of Dermatologists [18]	North American (US and Canadian HS Foundations) [20]	HS ALLIANCE [21]	Canadian Dermatology Association [22]	Canadian consensus group [23]	European HS Foundation [24]	European S1 [25]	Swiss consensus group [26]	Brazilian Society of Dermatology [27]
Hormonal agents									
Metformin	Consider in HS patients with concomitant DM, PCOS or pregnancy	Consider metformin 500 mg BID-TID in appropriate female patients as monotherapy for mild-moderate or as adjunctive tx in severe HS	–	–	May be beneficial in patients with HS and PCOS	–	–	500–1,500 mg daily in refractory disease	May consider in women of childbearing age who have failed systemic abx
Cyproterone acetate + ethinyl estradiol	Insufficient evidence	Consider in appropriate female patients as monotherapy for mild-moderate or as adjunctive tx in severe HS[1]	–	–	~1/2 of patients exhibited clearance No significant difference in PaGA between cyproterone acetate + ethinyl estradiol vs. ethinyl estradiol + norgestrel at 6 months[1]	3rd line	100 mg cyproterone acetate daily for female patients with menstrual abnormalities, signs of hyperandrogenism, or high levels of DHEA, androstenedione or SHBP	–	May consider in women of childbearing age for whom systemic abx has failed
Finasteride	Insufficient evidence	Consider 1.25–5 mg/day in appropriate female patients as monotherapy for mild-moderate or as adjunctive tx in severe HS	–	–	–	–	–	–	1–5 mg/day in children <12 years old with HS refractory to topical/ oral abx
Spironolactone	Insufficient evidence	Consider spironolactone 100–150 mg daily as monotherapy in women with mild-moderate HS or as adjunctive tx in severe HS	–	–	–	–	–	–	Consider in female HS patients for whom systemic abx has failed

Abx, antibiotics; BID, twice daily; DHEA, dehydroepiandrosterone; DLQI, Dermatology Life Quality Index; DM, diabetes mellitus; HS, hidradenitis suppurativa; IV, intravenous; PGA, Physician's Global Assessment; PaGA, Participant's Global Assessment; PCOS, polycystic ovary syndrome; QoL, quality of life; SC, subcutaneously; SHBP, sex hormone-binding protein; TID, three times daily; tx, treatment; –, not specifically mentioned. [1] Recommendation based on randomized controlled trial(s) in HS.



27.02.2023

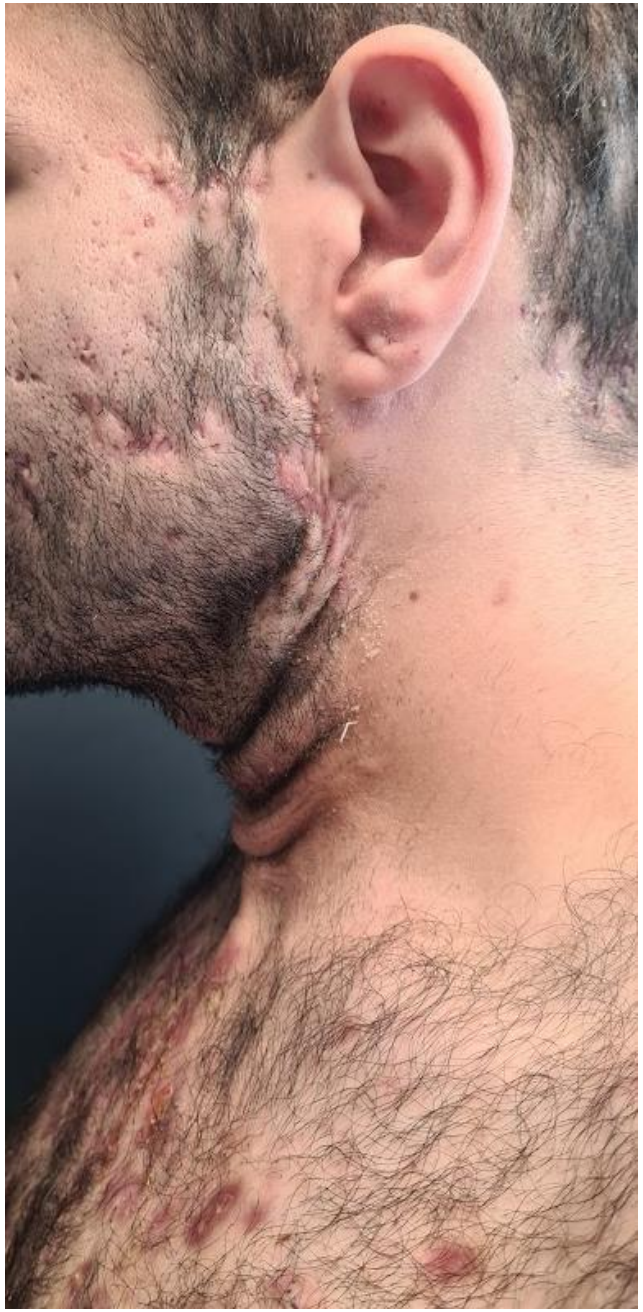


16.05.2023

OLGU 2

- ✓ 25 Y, E
- ✓ 8 yıllık HS, 1 yıldır çok şiddetli
- ✓ Pilonoidal sinüs op
- ✓ 3 yıl önce diyabet için cerrahi operasyon
- ✓ Operasyon sonrası 7-8 ayda 40 kilo kaybı
- ✓ Sistemik antibiyotik yanıtsızlık
- ✓ Adalimumab yanıtsız
- ✓ 27.02.2023'de Secukinumab başlandı

Prof. Dr. Hüseyin Serhat İnalöz Hocamıza teşekkürler



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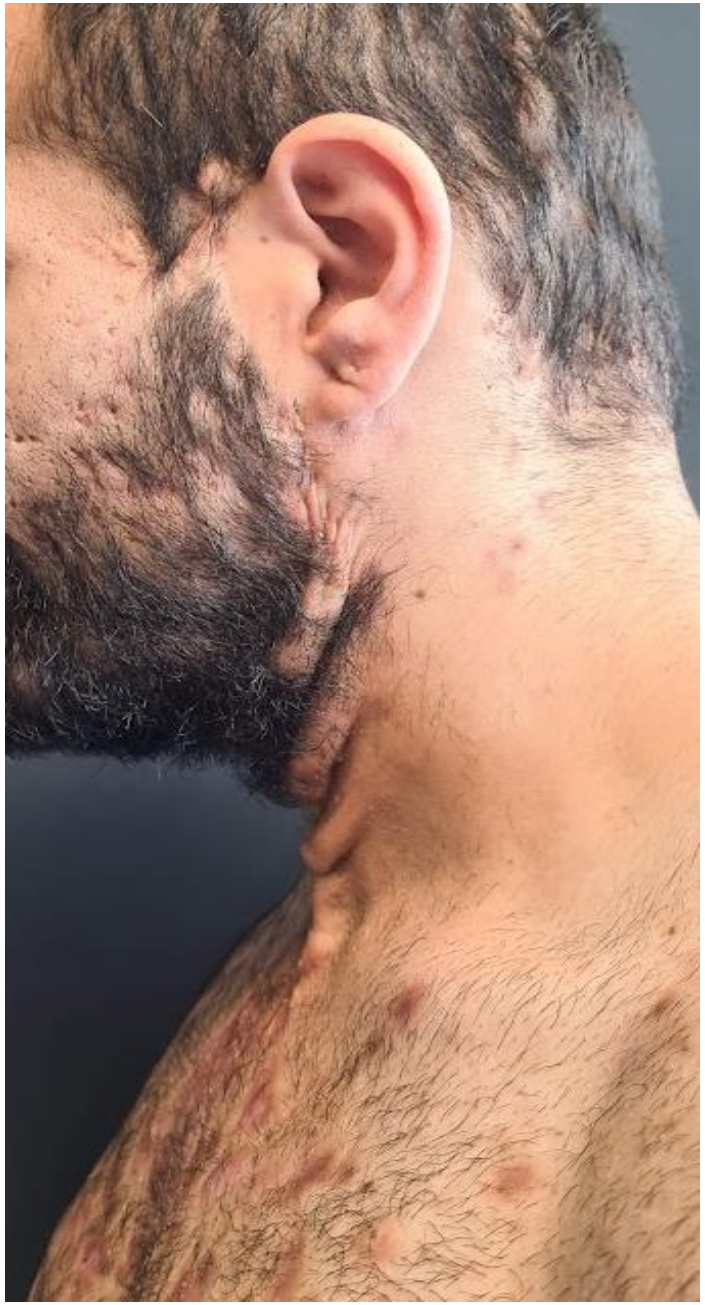

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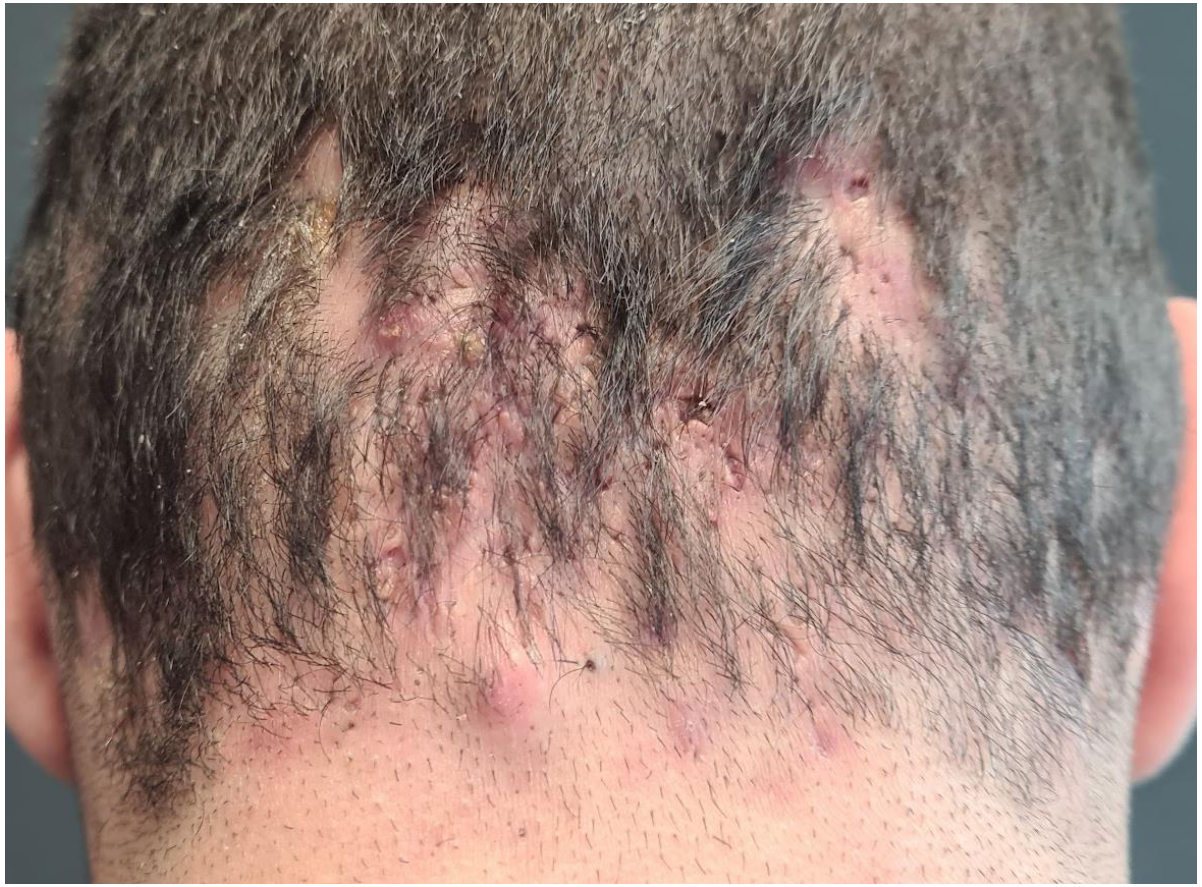

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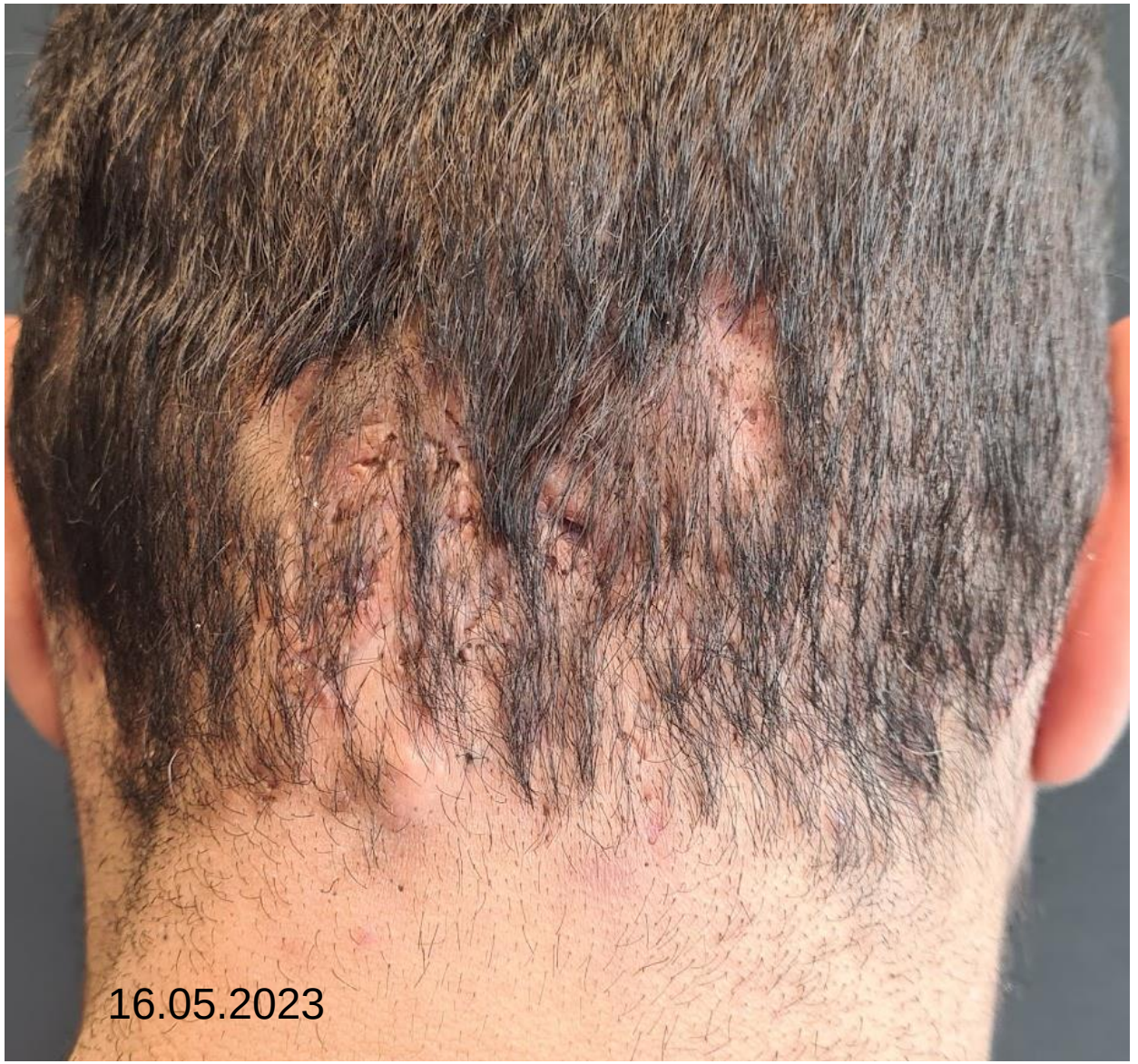

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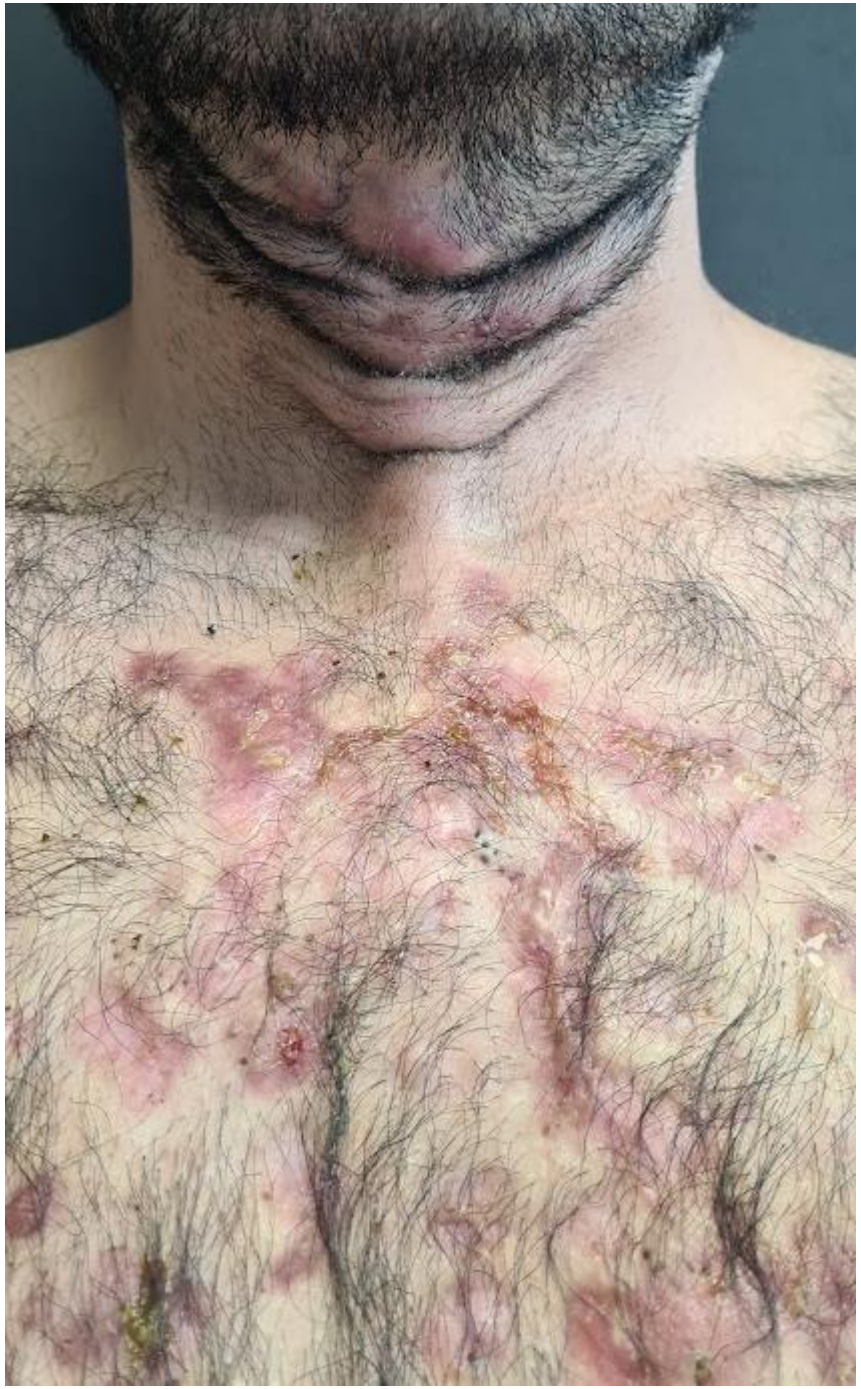

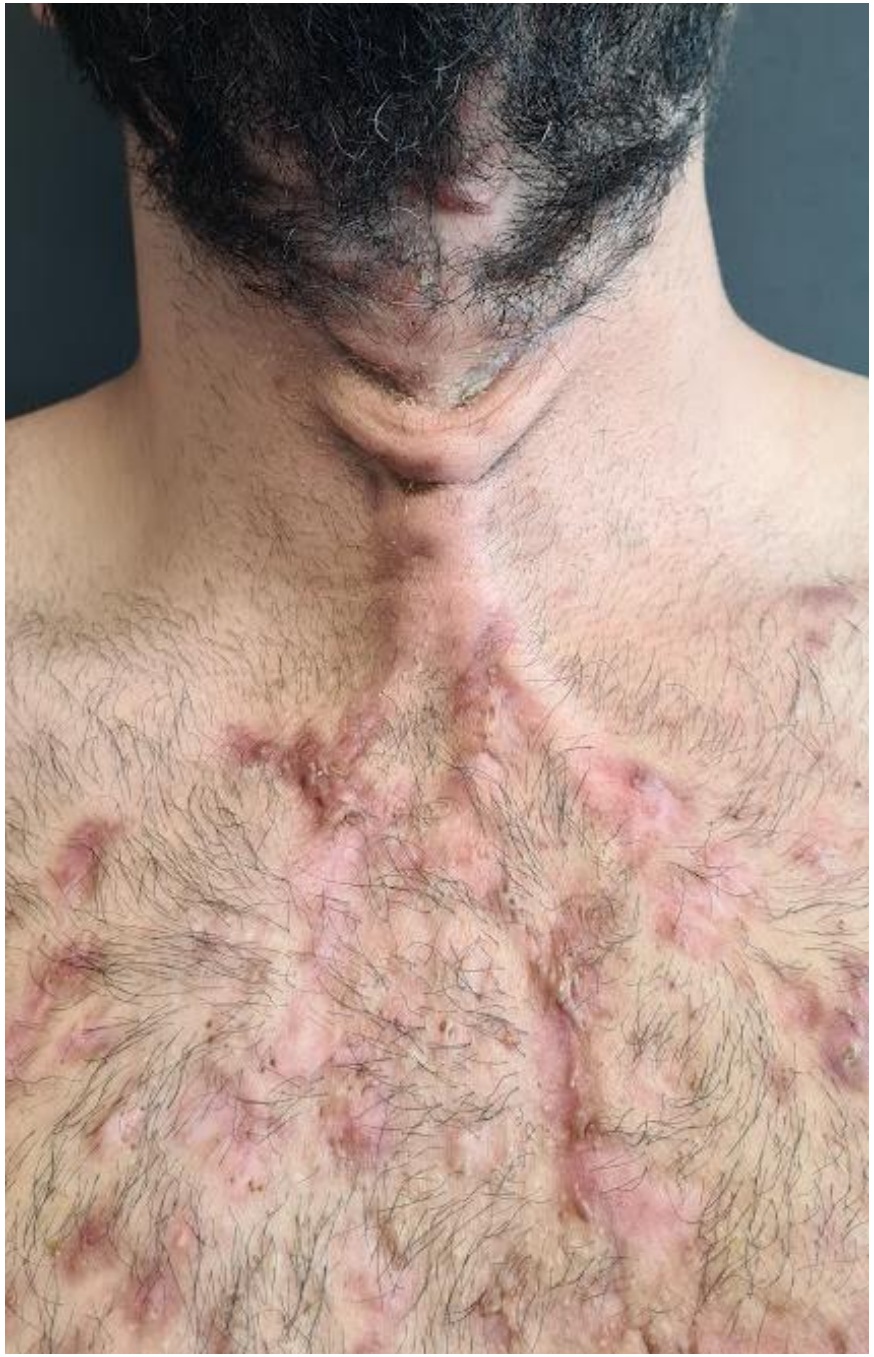

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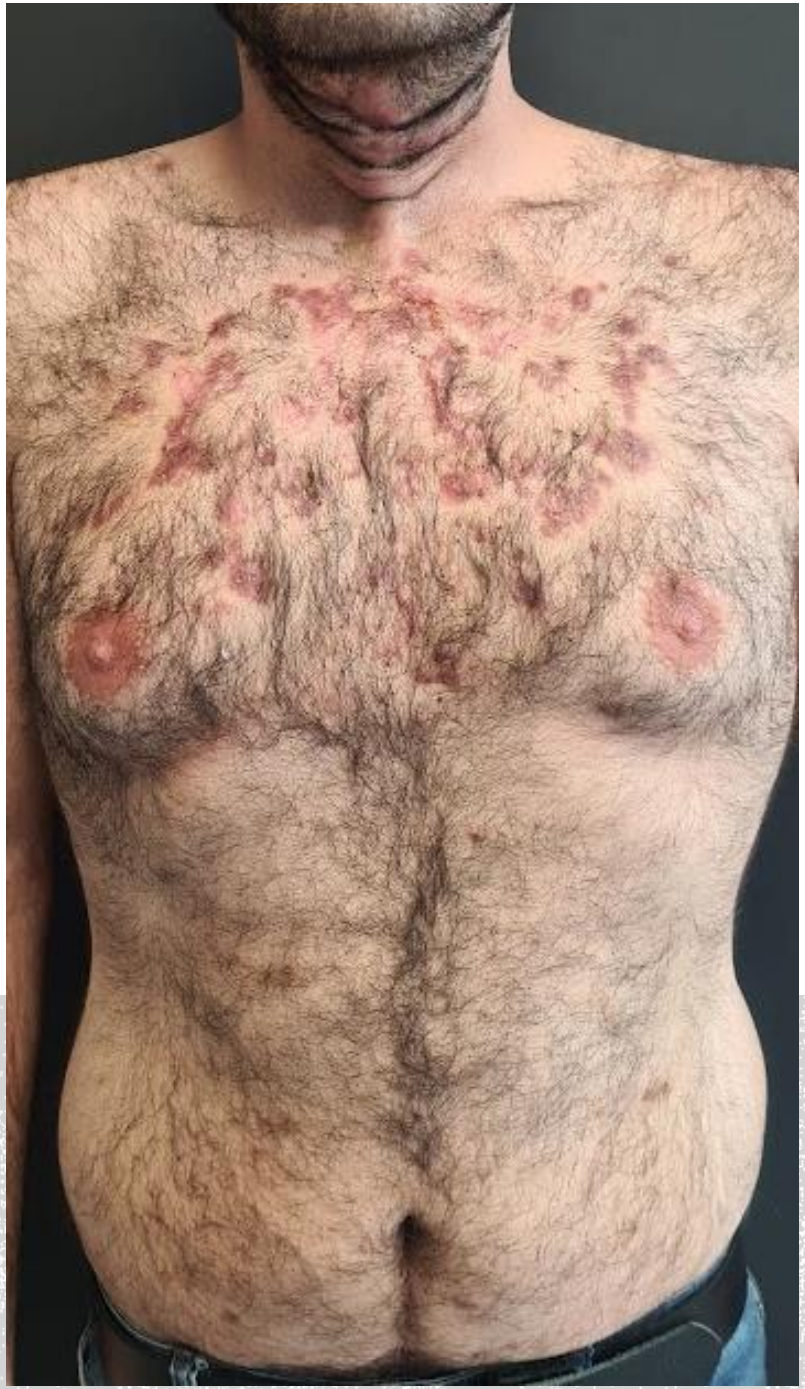

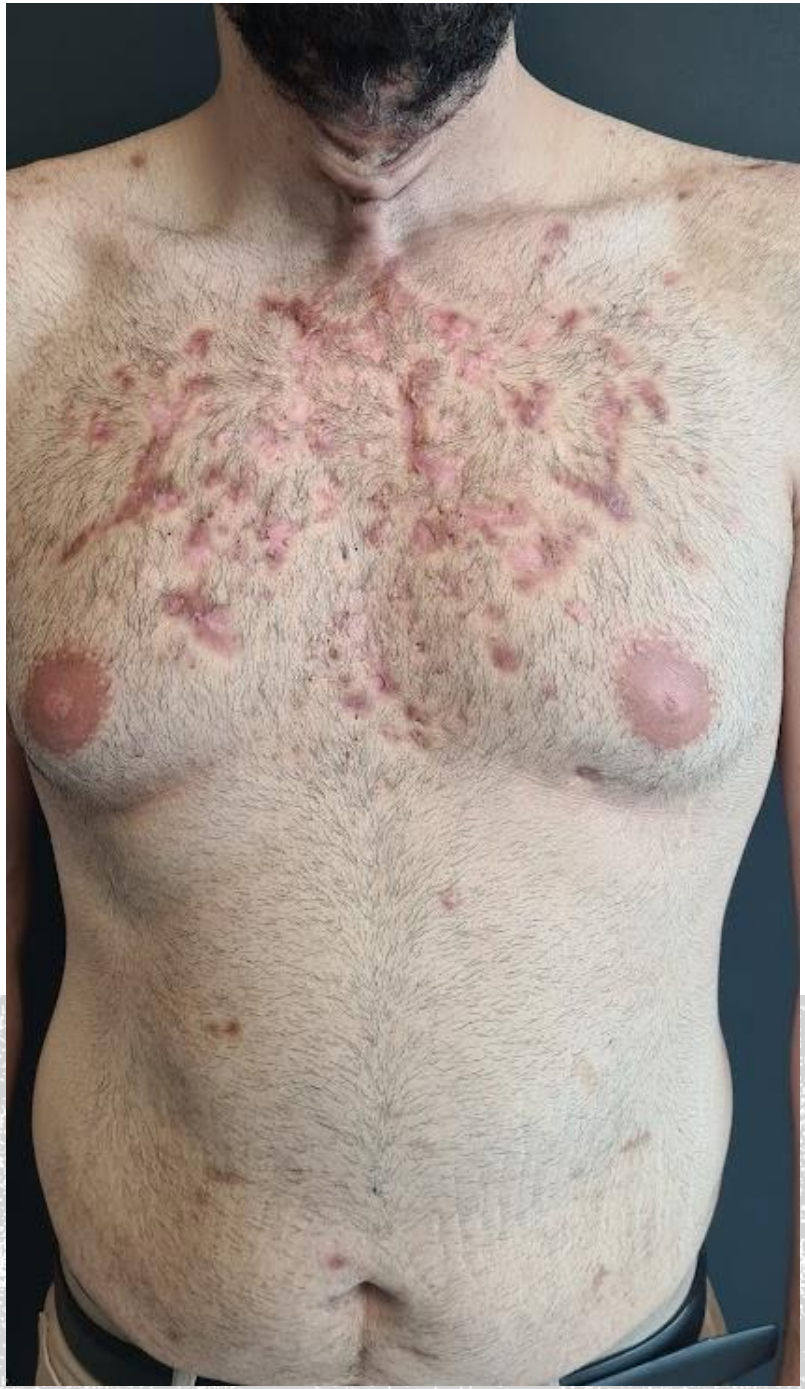

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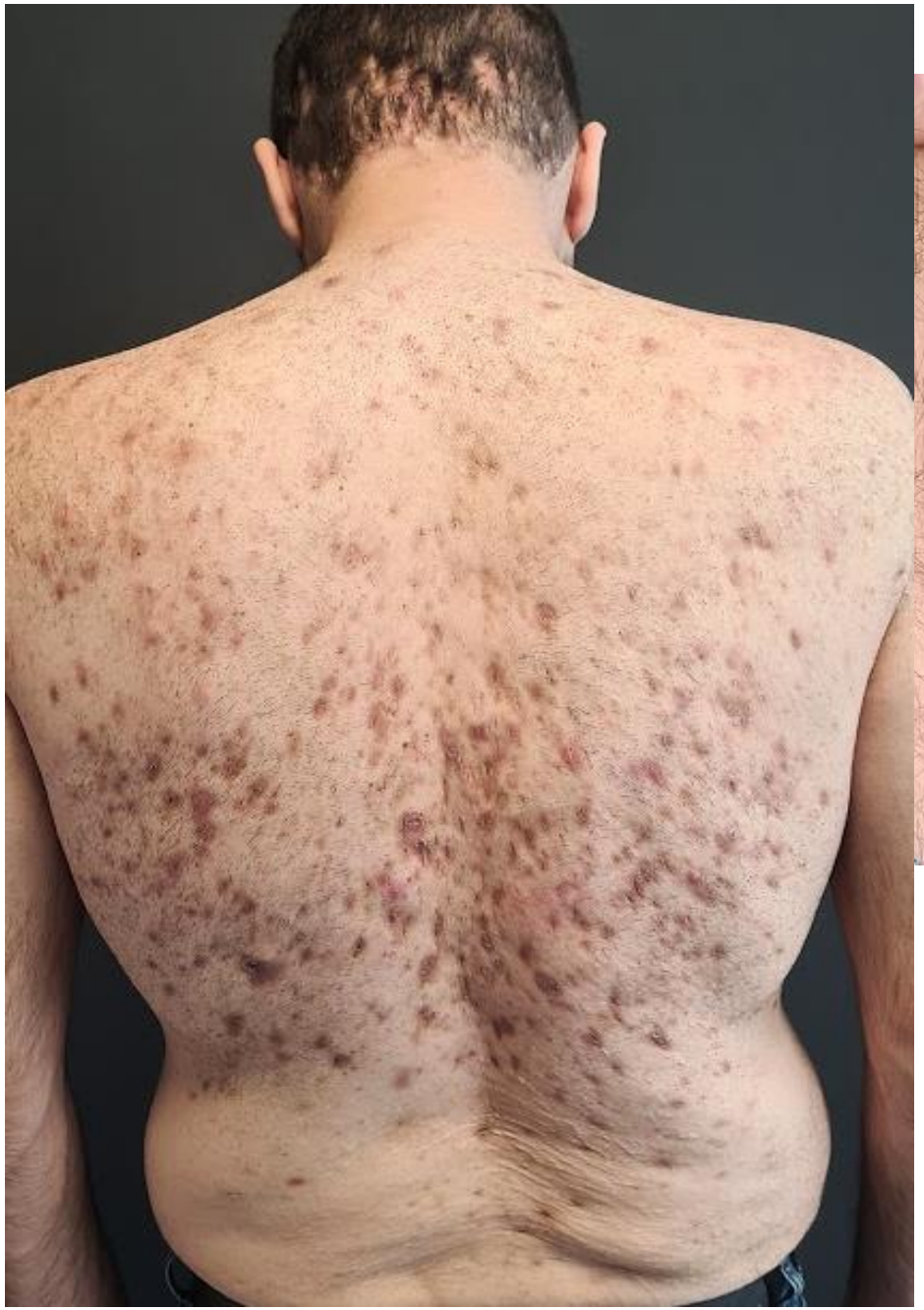

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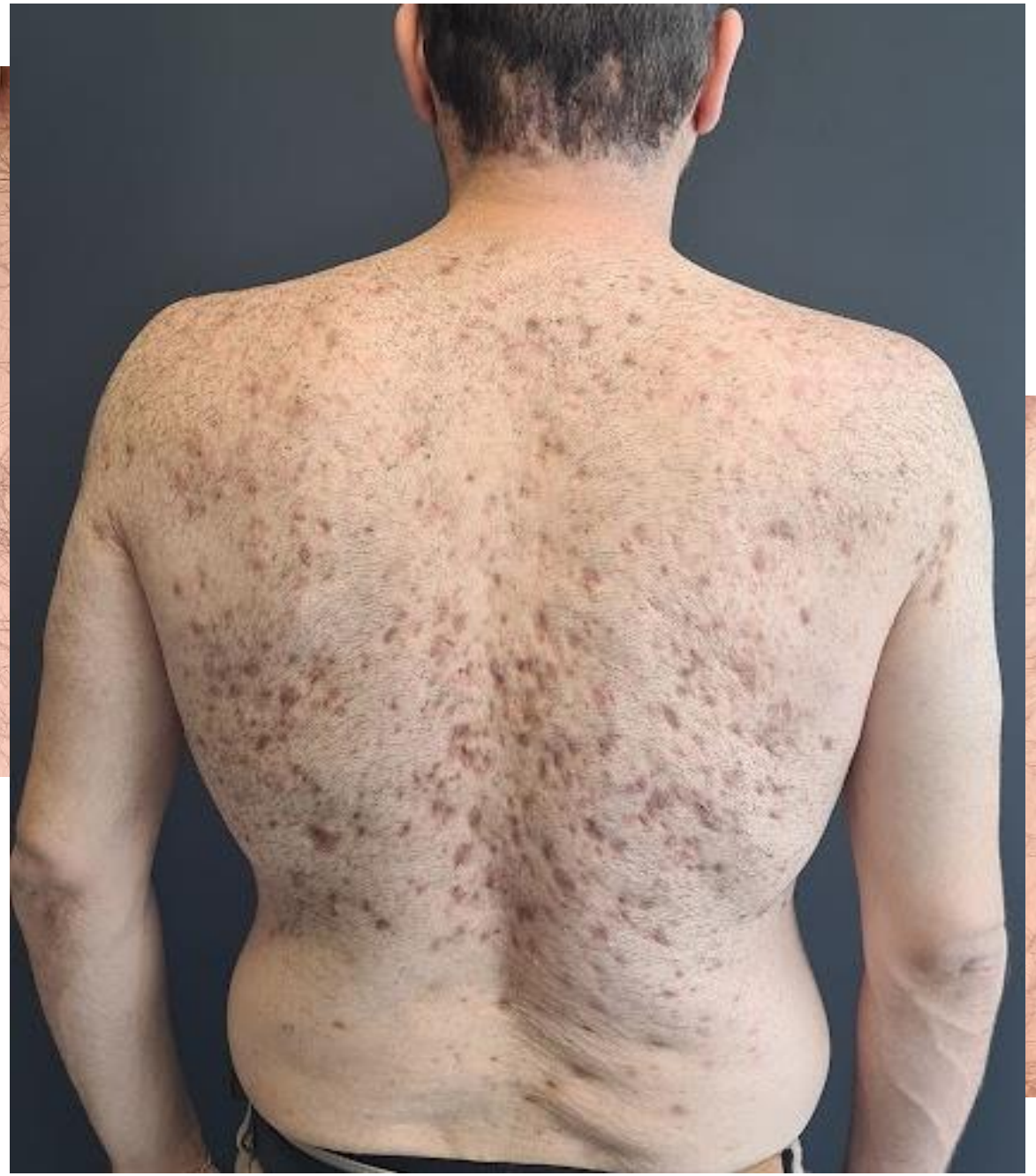

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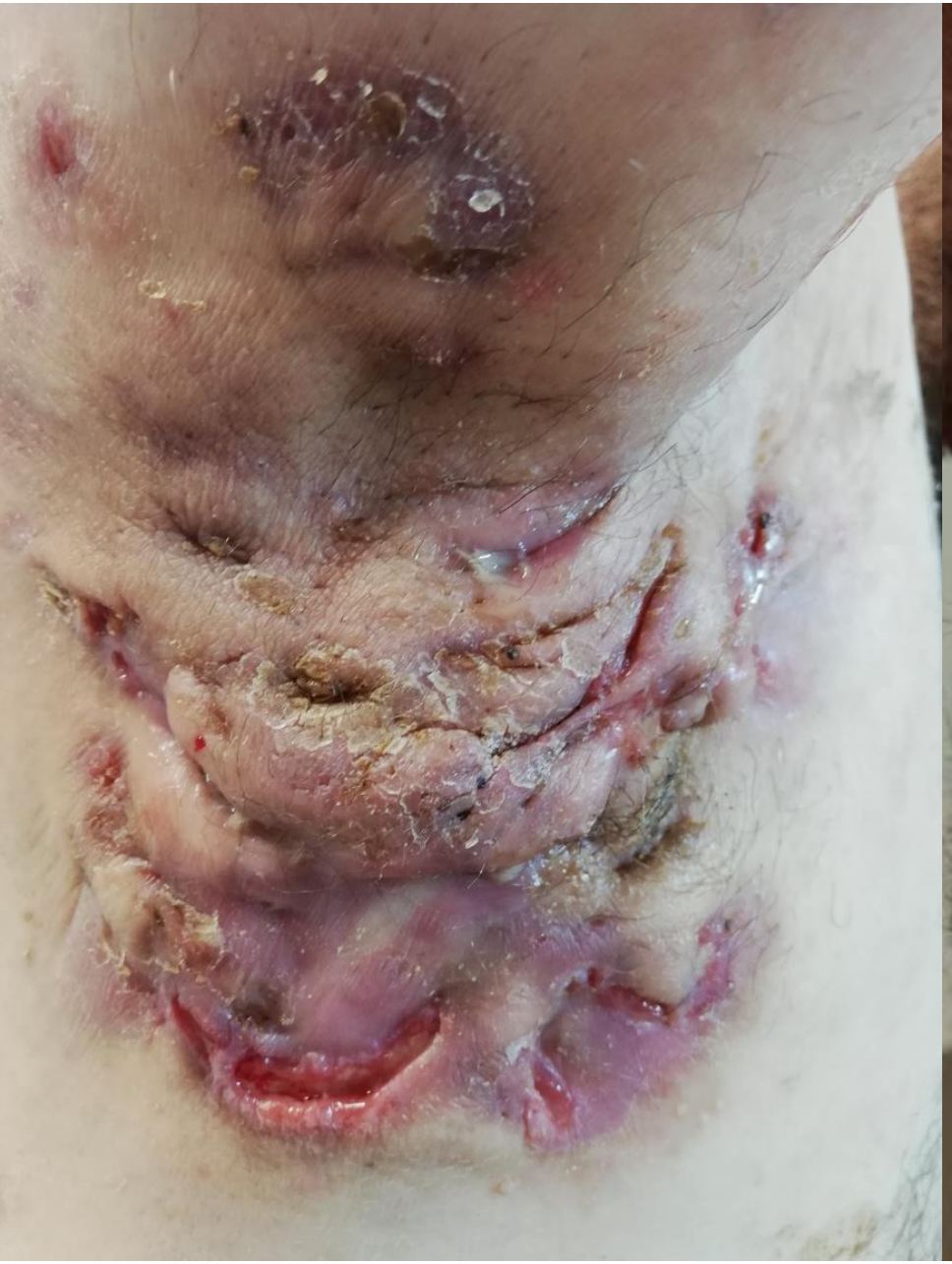
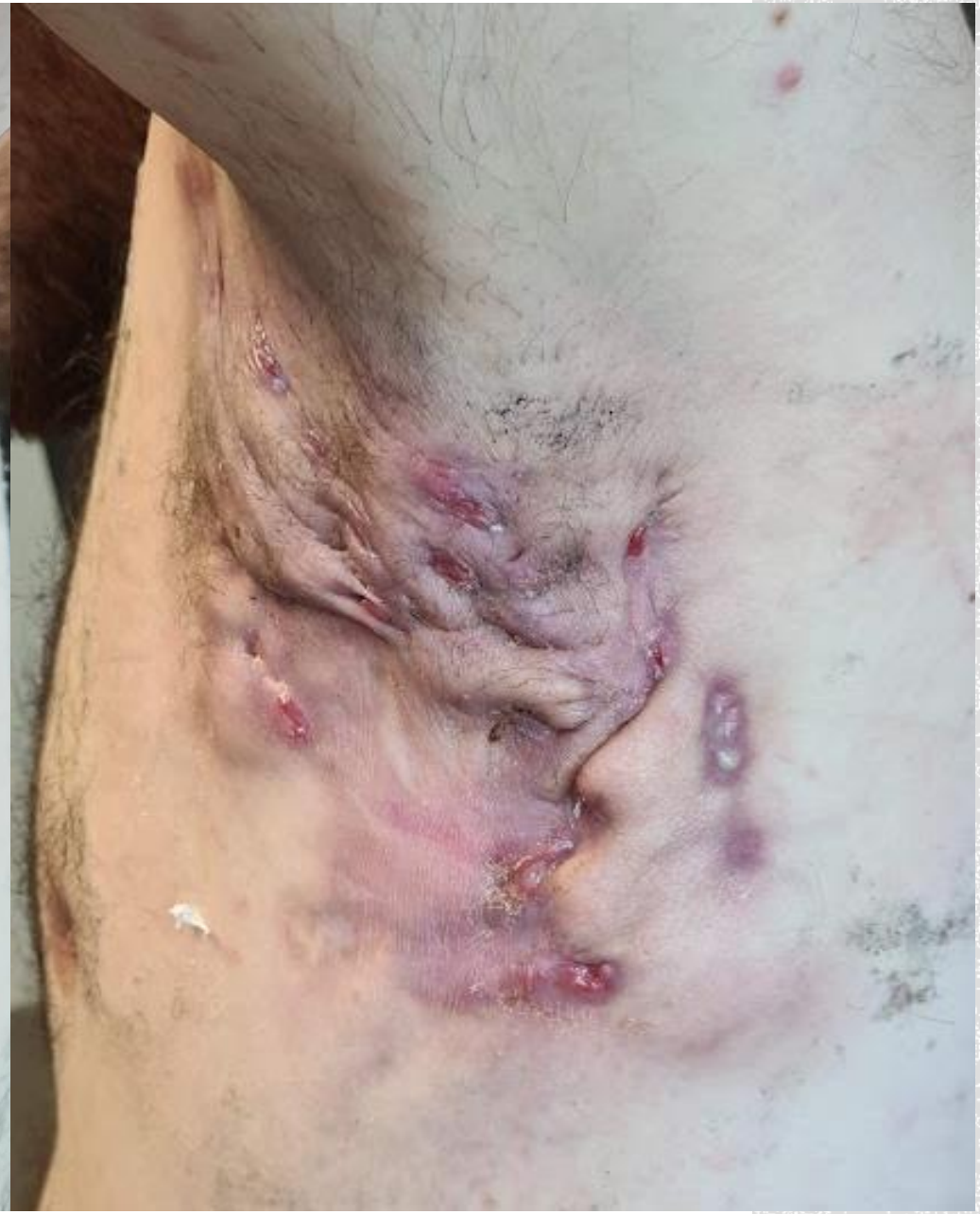
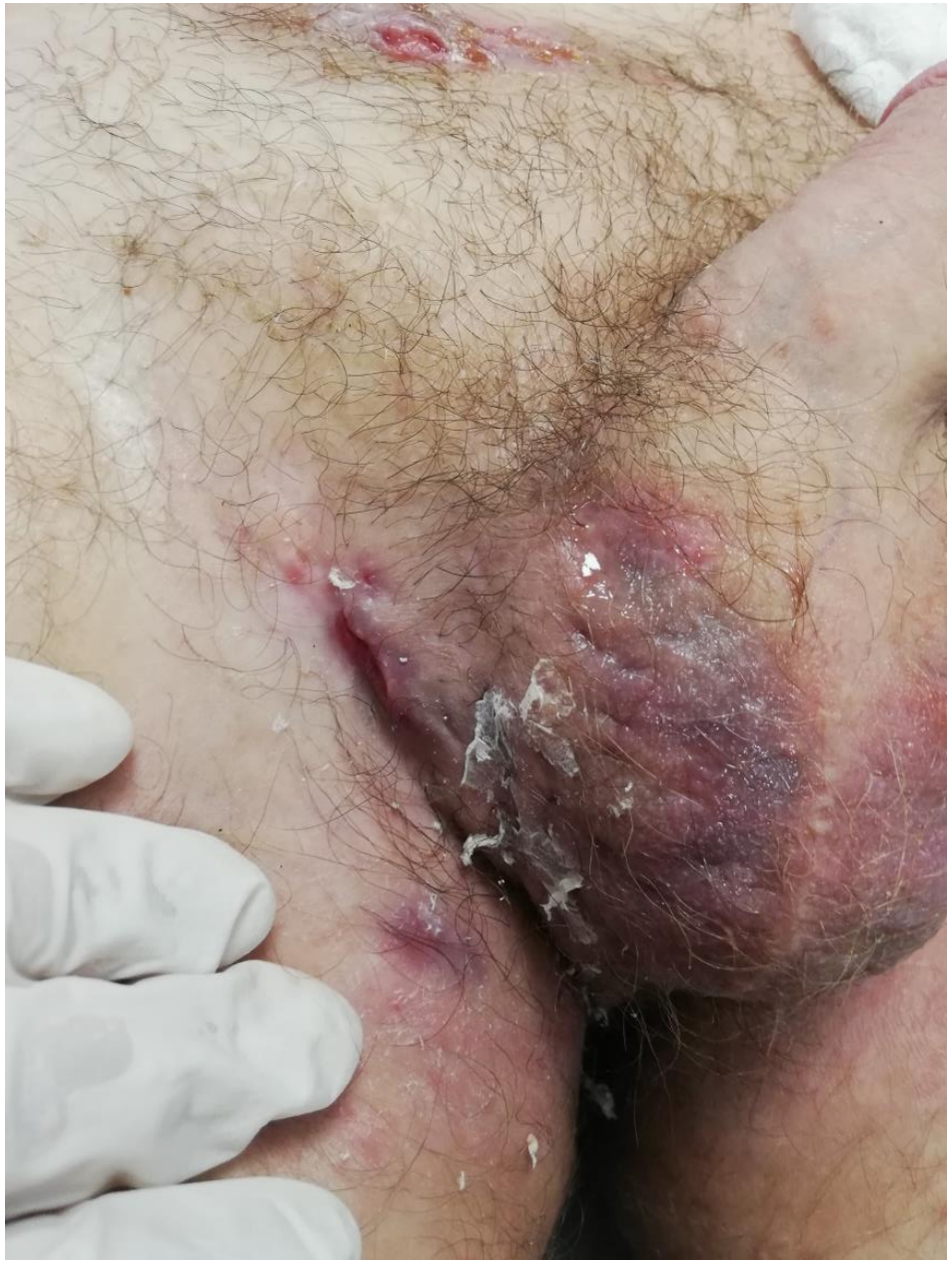
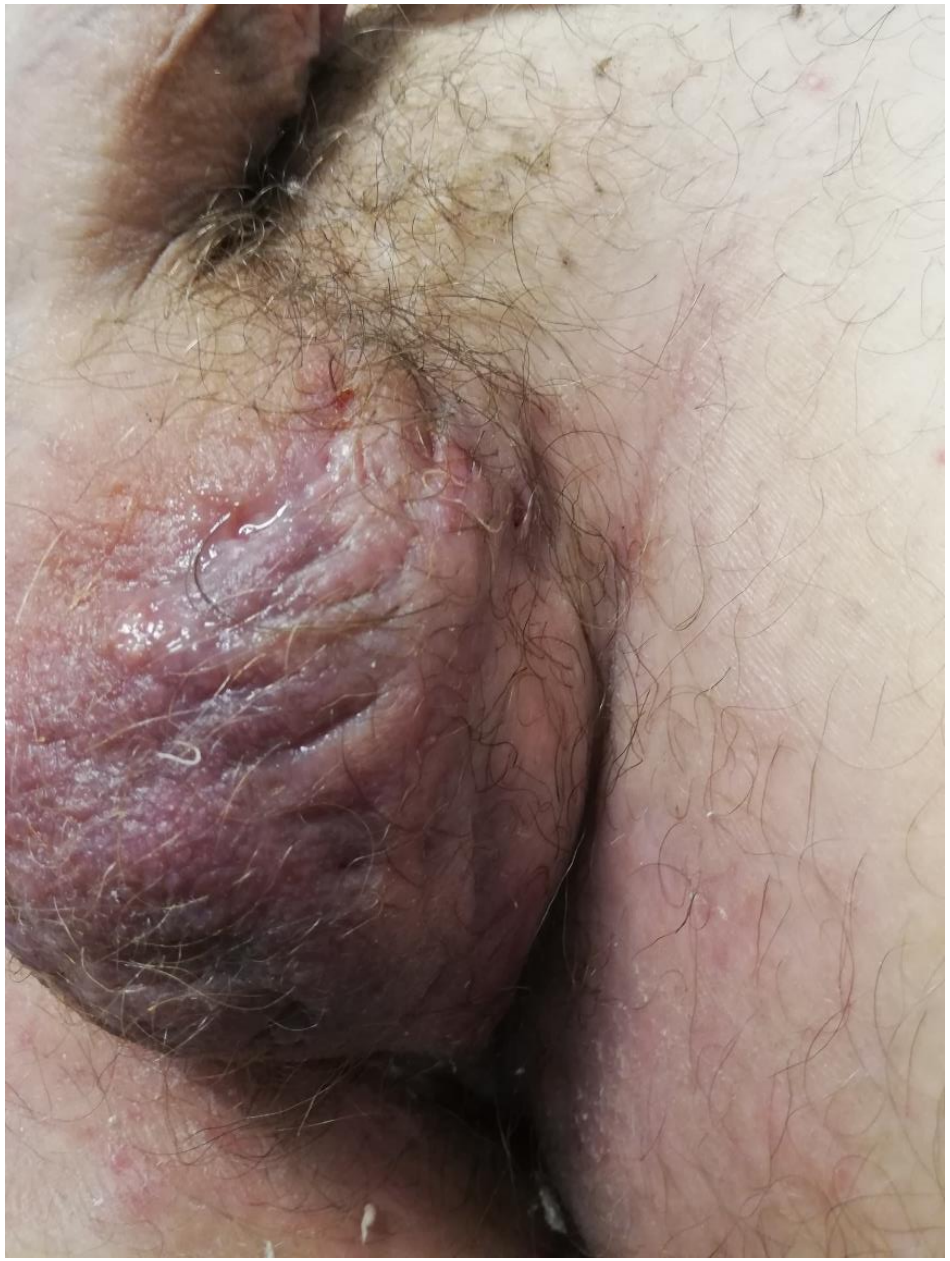




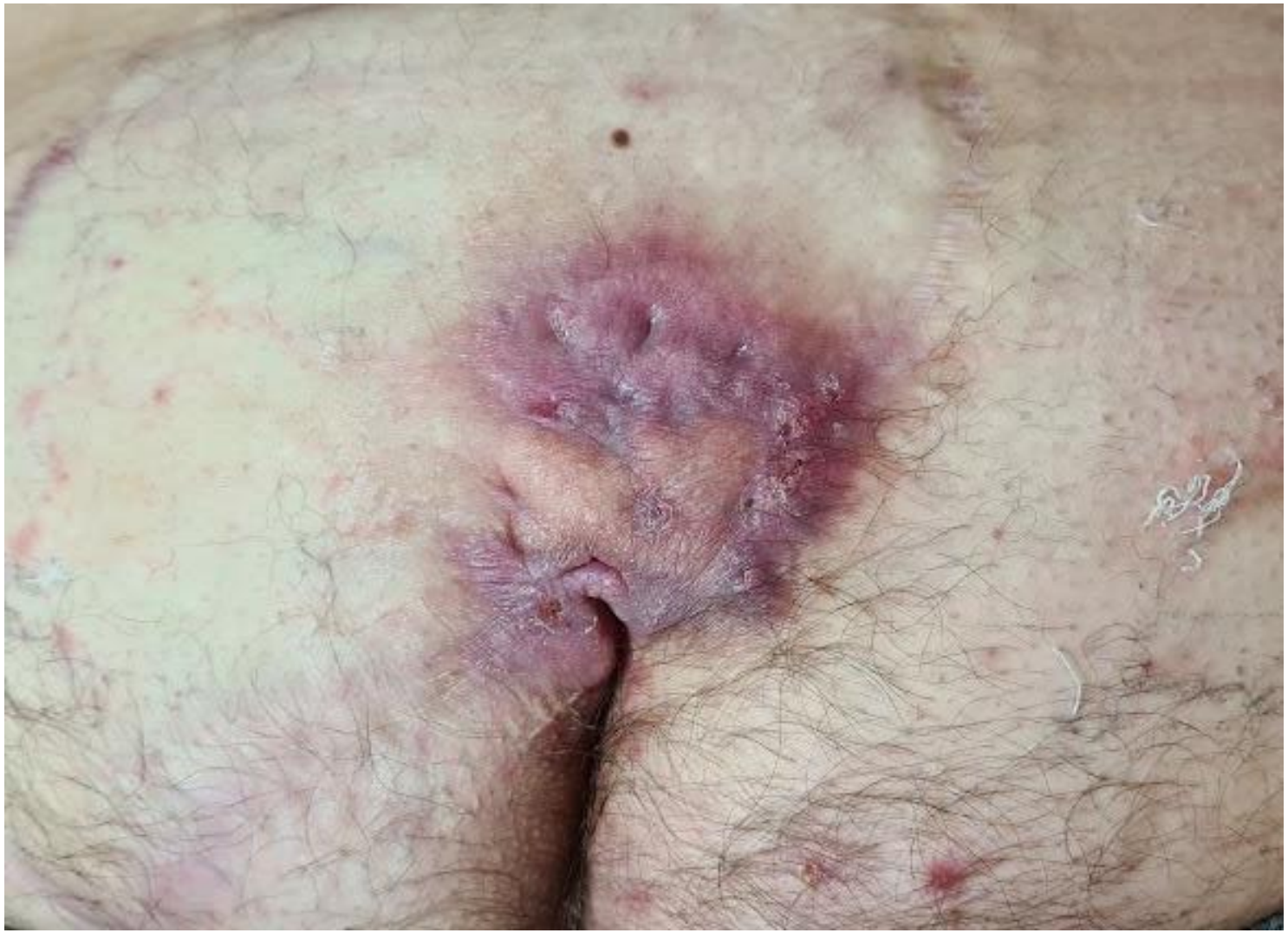
OLGU 1

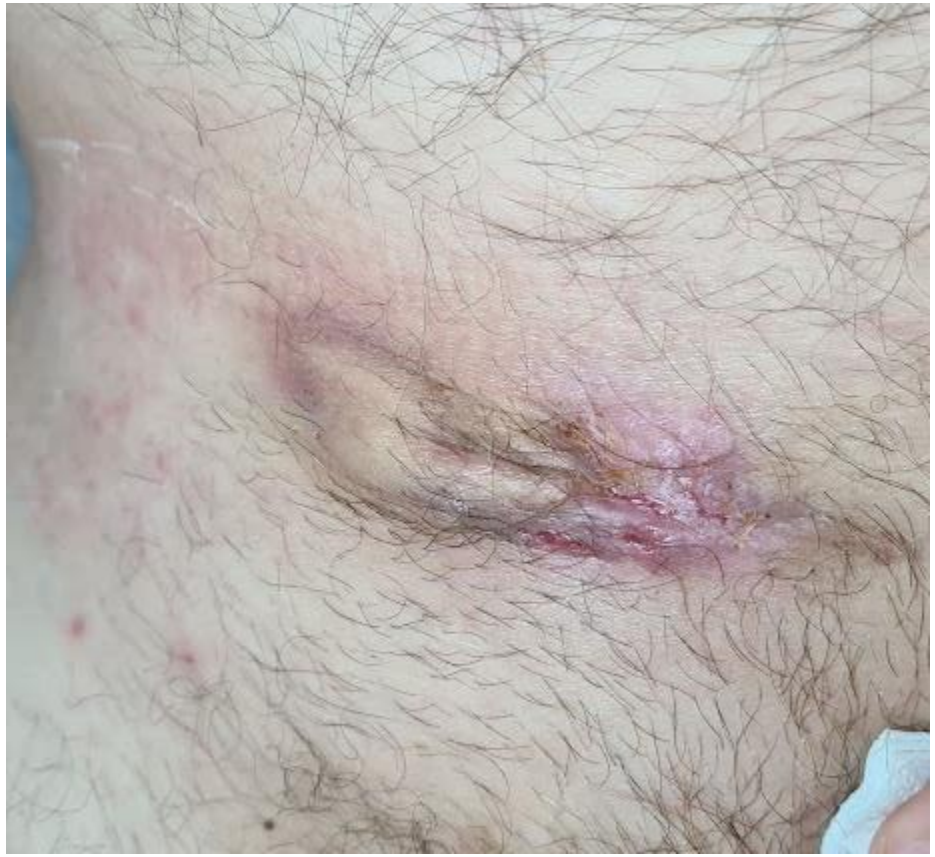
- ✓ 27 Y, E
- ✓ Pilonoidal sinüs operasyonu 2014
- ✓ 2015’ten itibaren HS
- ✓ Kronik hastalık anemisi
- ✓ Hipotiroidi
- ✓ Diyare-glüten enteropatisi
- ✓ Sigara(+)
- ✓ BMI = 31.3 kg/m2
- ✓ Grade 1 obez
- ✓ Sistemik antibiyotiklere yanıtsızlık
- ✓ Adalimumab yanıtsız (2021-2022)
- ✓ Temmuz 2022’de Secukinumab başlandı





28 Temmuz 2022





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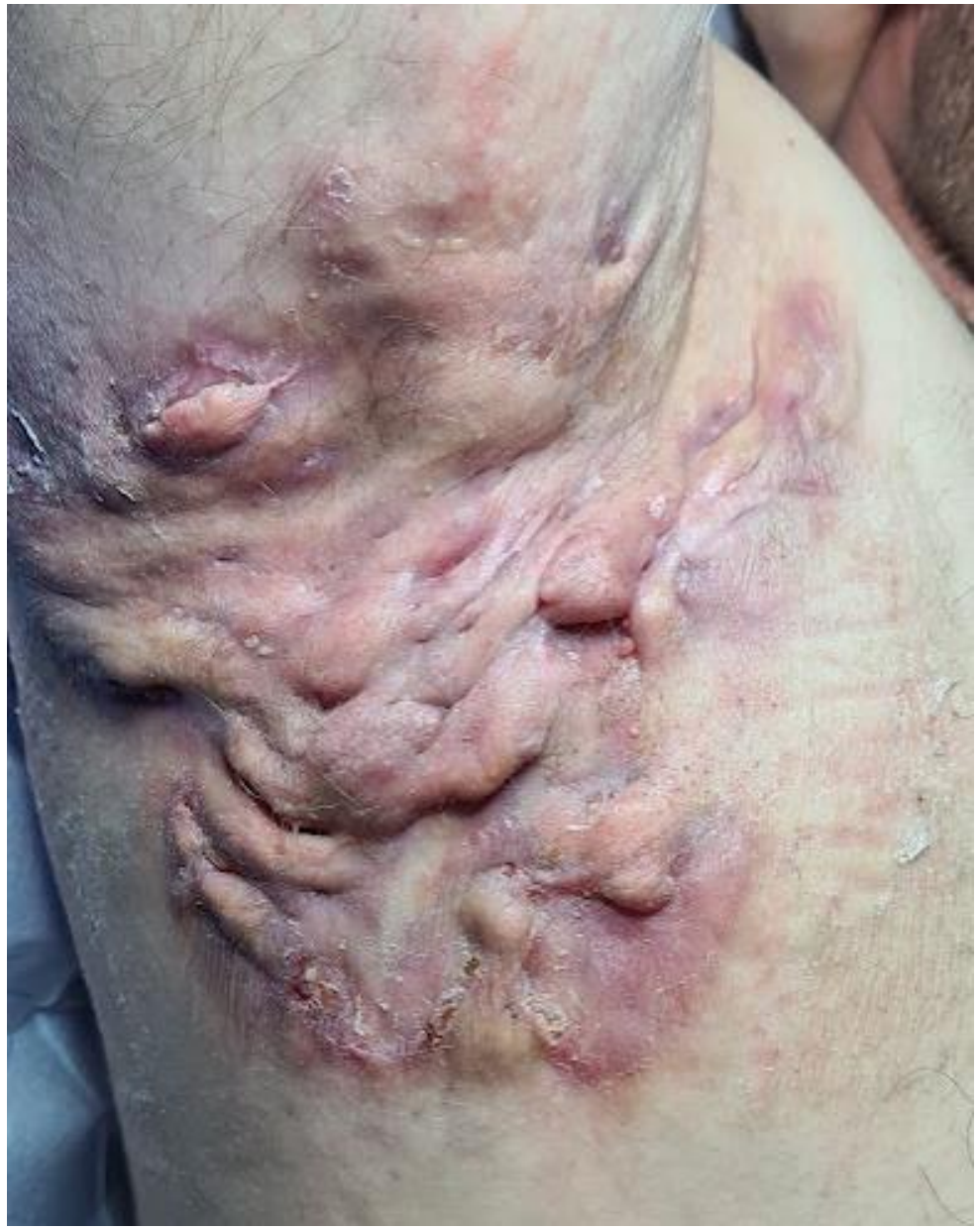
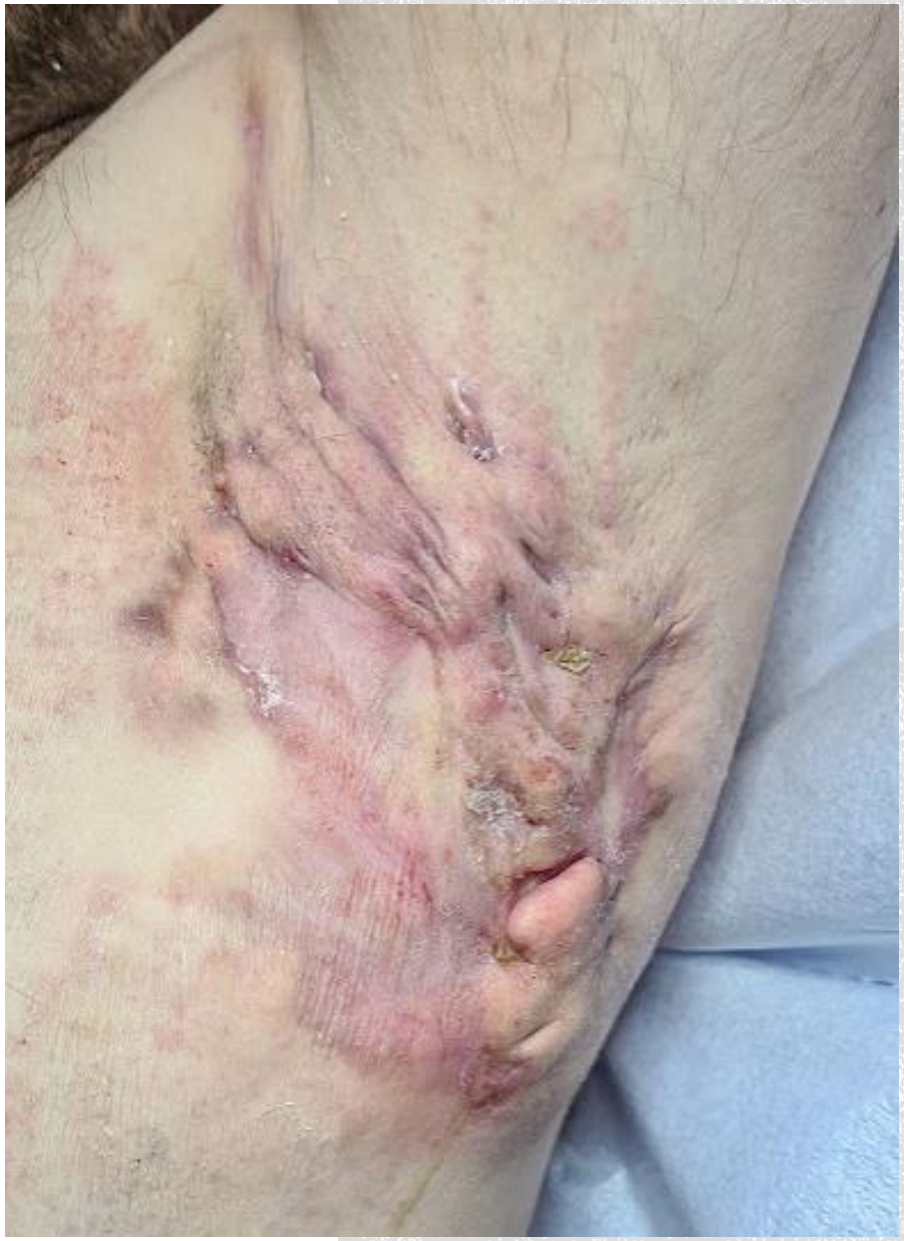
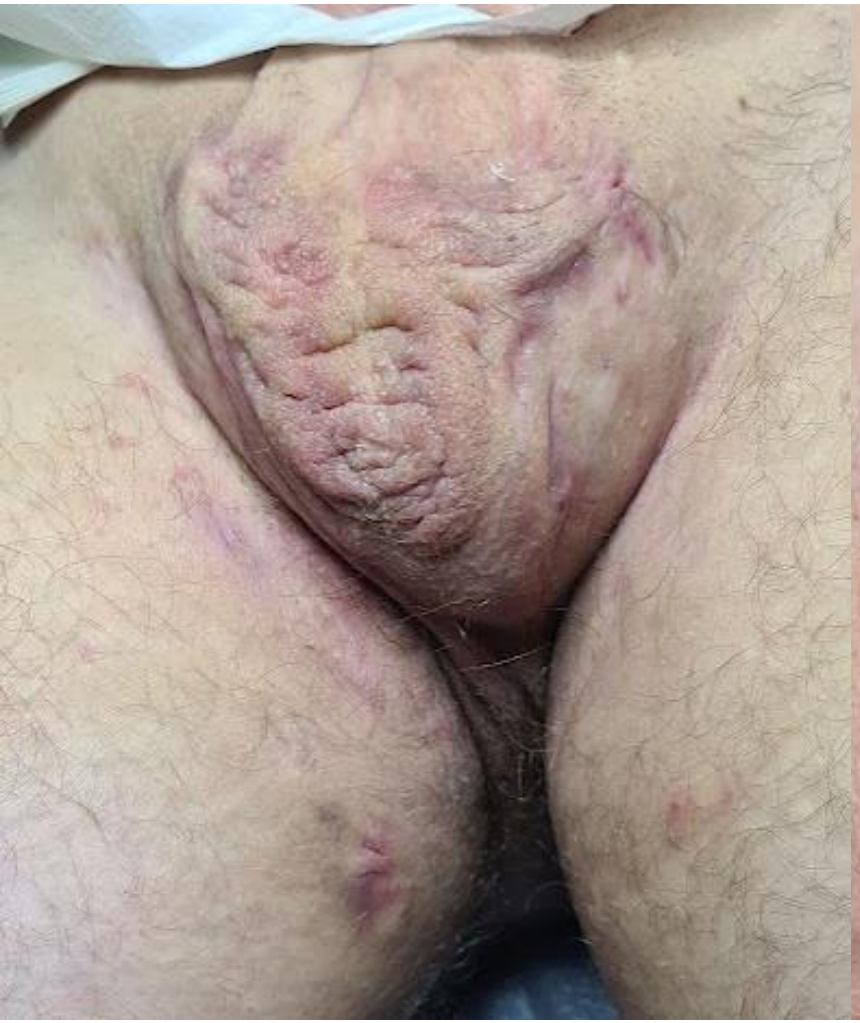
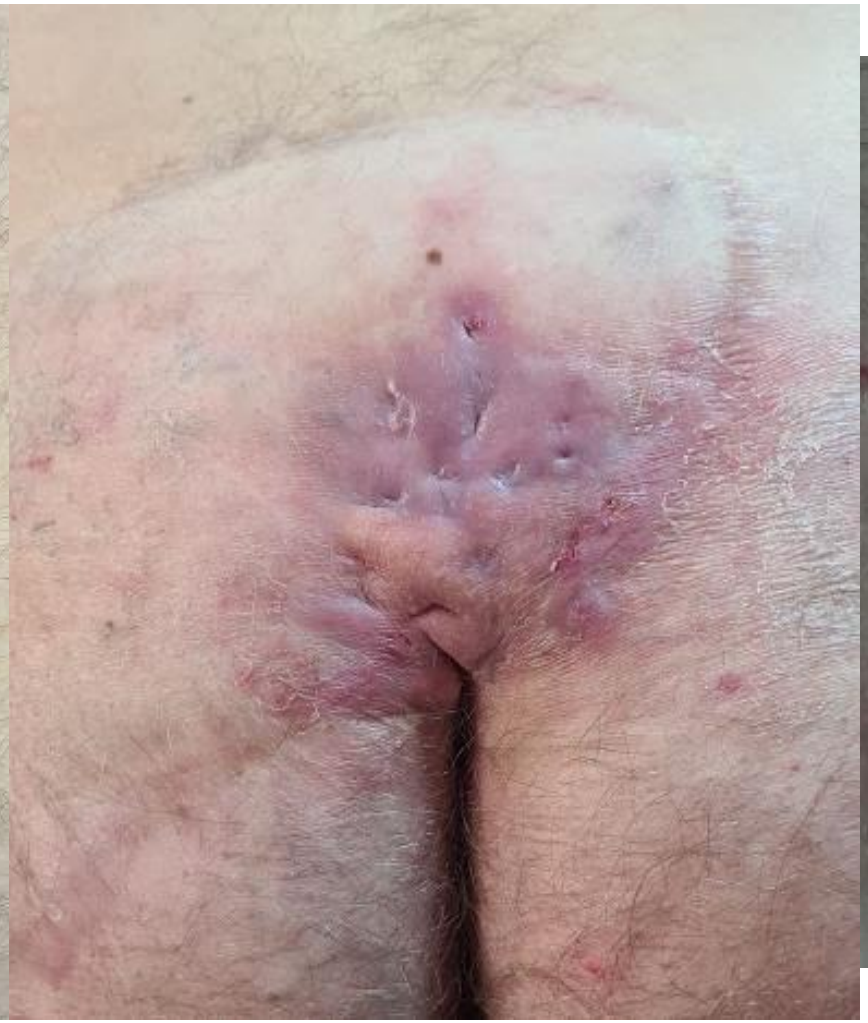
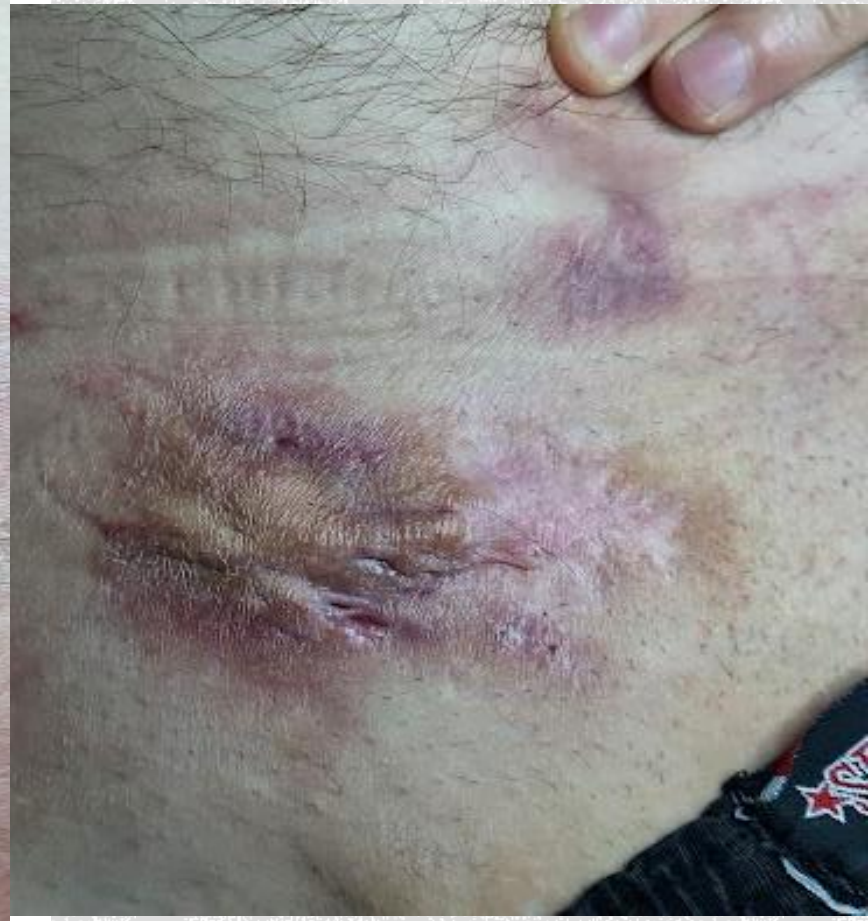




8 Şubat 2023







8 Şubat 2023

SONUÇ OLARAK:

HS yönetimi genellikle karmaşıktır ve hastalığa eşlik eden ilişkili ağrı ve psikiyatrik ve tıbbi komorbiditelerin ele alınmasına ek olarak medikal ve cerrahi tedavi seçeneklerinin dengelenmesi gerekmektedir

TEŞEKKÜRLER