Journal of Medicine & Surgery Case Report
journal homepage: https://journal.jmscr.org/
E-ISSN xxxx-xxxx P-ISSN xxxx-xxxx
DOI:

Volume [1] | Page [01-09]

Conservative Management on Hidradenitis Supurativa Hurley III Bilateral

I Gusti Agung Ayu Pramasinthya Aguseny Yudana[1], Bayu Pramana Suryawan Putra[2]* Kadek Devi Indah Anggelina[3], Ketut Suteja Wibawa[4], Yufi Aulia Azmi[5]

[1,2] Faculty of Medicine Undiksha, Singaraja, Bali, Indonesia
[3,4,5] General Hospital Buleleng, Singaraja, Bali, Indonesia
*Correspondence author: pramasinthyayudana@gmail.com

Article History

Received	: 30 Oktober 2024	Revised	: 18 Desember 2024
Accepted	: 30 Januari 2024	Available Online	: 06 Februari 2025

ABSTRACT

Hidradenitis suppurativa (HS) is a skin disease caused by inflammation of hair follicles, characterized by perifollicular lymphocytic infiltrate followed by recurrent loss of sebaceous glands. Currently, the etiology of HS is still idiopathic; there are predisposing factors that can affect this disease, such as the immune system, hormones, obesity, smoking, and family history. It can cause occlusion and inflammation of hair follicles, which worsens the infection. Based on epidemiology, women are generally the largest population in HS. Hidradenitis suppurativa cases are rare and dependent on the population but can affect the patient's quality of life. Here in, we present a 21-year-old man complaining of pus coming out of both armpits 2 days before going to the clinic. The patient had complained of the same thing 6 years ago and had a history of frequent shaving of armpit hair. General and physical examinations were normal. The obtained dermatologogical status shows Hurley grade III hidradenitis suppurativa in the bilateral axilla. This patient was given a conservative management with a combination of oral antibiotics of Rifampicin and Clindamycin for 8 weeks, and fusidic acid as a topical antibiotic, then Paracetamol as an analgesic. After comparing cases and theories, it was found that there were variations in epidemiology and etiology. The first-line conservative management of HS is oral medications and can also involve operative management adjusted to the condition and severity of HS. In this case of Hidradenitis Suppurativa Hurley III Bilateral, it was treated with conservative management and has shown improvement.

Keywords: Hidradenitis suppurativa, Hurley Staging, Conservative Management, Case Report

1. Introduction

Hidradenitis suppurativa (HS) is a skin disease caused by inflammation of hair follicles characterized by perifollicular lymphocytic infiltrate followed by recurrent loss of sebaceous glands. This disease is also known as acne inversa, verneuil's, velpeau, and acne etiopia (1,2). The prevalence of this disease is very rare and highly dependent on the population. It is recorded that 0.05% to 4.1% in Europe and North America experience HS, which is most often experienced after puberty. Based on the population, women are more likely than men (2–4). The etiology of HS is still unclear to date, but according to research, immune status, hormones, obesity, smoking, and family history can also cause this condition (2–5). This condition can cause a decrease in the patient's quality of life. HS has lesions that are very pruritic and painful, and located in the intertriginous area or skin folds, smell bad and produce purulent secretions so that they can be disabled and cause social stigma; then, if it is in the inguinal area it can make a negative impact on the patient's sexual health (1). This patient will be prone to depression and at risk for suicide (3). Providing appropriate management is very important for HS patients to reduce disease progression and restore aesthetic elements (6).

This case report will focus on the conservative management of bilateral and recurrent hidradenitis suppurativa in a 21-year-old man. Conservative management is a combination of antibiotics and routine wound care.

2. Case Presentation

A 21-year-old man came to the Skin and Venereology Health Polyclinic of a Type B Regional Hospital in Singaraja, Bali, with chief complaints of pus coming out of his right armpit 2 days before being admitted to the hospital. The patient complained of pain in his right armpit that worsened when he raised his arm. The complaint began with a lump in his right armpit for 1 month and grew larger, then burst and discharged pus. The patient felt embarrassed because his condition caused an odor, so his social environment shunned him. The patient did not experience complaints like fever, headache, nausea and vomiting. The patient had a history of the same thing 6 years ago in his left armpit, which improved with medication and ointment. However, the wound reappeared after the patient's friend accidentally lifted his arm. So it was decided to have surgery. After that, the patient did not have a check-up on his left armpit after surgery. A history of previous illnesses such as diabetes mellitus, hypertension, or metabolic syndrome was denied. The patient's family had never experienced the same complaint. The patient has an irregular bathing habit and often shaves his armpit hair. No treatment has been given for the complaint in his right armpit.

Physical examination found vital and general signs within normal limits. Body weight 70 kg, height 165 cm. The patient's body mass index is 25.7 (obesity grade I). In dermatological status, multiple ulcers were in the left axillary region with clear boundaries, with some merging to geographic form measuring 2x3 cm to 4x6 cm spread regionally. In some parts, multiple round pustules measured 0.2-0.4 cm in diameter, and around the ulcer appeared hyperpigmentation. There was 1 sinus measuring 1x4 cm (Figure 1A), and in the right axillary region, two pustules with clear boundaries measuring 1x2 cm and 3x4 cm spread regionally. There was one sinus measuring 2x3 cm around it appeared hyperpigmentation. (Figure 1B).

Figure 1. Axillary Hidradenitis Suppurativa Right (A), Left (B)

The patient was diagnosed with Hidradenitis suppurativa hurley III axillaris bilateral. The patient was treated pharmacologically and non-pharmacologically. Pharmacological management was given a combination therapy of clindamycin 300 mg tablets every 12 hours and rifampicin 300 mg tablets every 12 hours for 8 weeks, fusidic acid 5 grams of topical cream every 12 hours, and paracetamol 500 mg every 8 hours if the patient felt pain. Non-pharmacological management was performed in wound care using 0.9% sodium chloride compresses.

Patients were taught to implement a healthy lifestyle for weight loss, keep wounds from getting wet, bath regularly, and not apply moisturizing oils or herbal concoctions to lesions to avoid secondary infections. The patient underwent a check-up at the Polyclinic every 3 days to carry out wound care in the first 4 weeks. Furthermore, wound care was carried out once a week for the next 4 weeks. Wound care was performed with 0.9% sodium chloride compresses, which were then covered with dry gauze to prevent irritation due to friction against clothing. In the 6th week in the left axillary region, multiple ulcers appeared, some of which merged to form a 1x2 cm to 2x3 cm geographic area that dried up, and hyperpigmentation was seen around the ulcer. However, there was still one sinus that was starting to shrink. In the right axillary region, hyperpigmentation was seen without pustules, and the sinus was shrinking. In the 7th week, the wound appeared dry.

3. Discussion

In this case, the patient is a male where based on epidemiology, HS tends to be experienced by women up to twice as much as men, so there is variation when viewed from gender (2-4). However, based on the latest case reports, HS is more often reported to occur in men (7-16). In this case, the patient was 21 years old and had suffered from HS for 6 years, since the patient was 15 years old. Based on the data, the average age of HS sufferers is 21 to 39 years and generally occurs at puberty (3.5). Several other case reports also revealed that the initial onset of HS was mostly in adolescents to young adults (8,9,11-14,17-20). However, there are several case reports that state that HS can also occur in children aged 9 to 11 years (8,11,20). Other case reports related to Hidradenitis Suppurativa in the last 10 years are described in Table 1.

The etiology of HS is still idiopathic, but many predisposing factors such as immune, hormonal, obesity, smoking, and family history can also be a risk. This can be at risk of causing occlusion and inflammation of the hair follicles, which is worsened by infection (5,6). Two case reports by Laroche et al. and Thorlacius et al. reported that HS occurred in patients who were overweight and obese (10,18). In this case, the patient also had obesity, with a body mass index of

25.7 kg/m2. Obesity causes changes in the skin, where obesity can widen skin folds, resulting in increased mechanical pressure and anaerobic conditions in the skin folds. Obesity can also induce systemic inflammation and changes in the metabolic system. Inflammatory cells in hypertrophic adipose tissue can produce proinflammatory cytokines and induce adipokines that adversely affect skin cells (5). In addition, other risk factors in the case include patient habits, namely irregular bathing and routine shaving of underarm hair, where these habits will cause thinning of the skin barrier, which triggers hyperkeratinization and follicle occlusion, causing pilosebaceous rupture, which makes it easier for bacteria to enter the dermis and trigger a local inflammatory response. Colonies of bacteria that are difficult to eradicate form biofilms that bind irreversibly to the epithelium of the sinus tract and hair follicles, causing chronic inflammation (2). In cases of HS with pustules, microbiological examination can be carried out to determine the causative agent of inflammation. Still, in this case, microbiological examination of the pus was not carried out due to cost constraints. Based on cultures performed in previous cases, the causes of secondary infections in HS vary, including *Staphylococcus aureus* bacteria, *Staphylococcus epidermidis*, *Escherichia coli*, and *Candida glabrata* fungal species found in HS patients (9,14–16,19).

The Hurley stage is the simplest and most widely used for HS classification. It classified HS into three stages. Stage I: Abscess formation, single or multiple, without sinus tract and cicatrization. Stage II: Recurrent abscess with tract formation and cicatrization, single or multiple, widely separated lesions. Stage III: Diffuse or near diffuse involvement or multiple interconnected tracts and abscesses across the entire area. This patient was diagnosed with HS Hurley Stage III, characterized by diffuse involvement and lesions with sinus tracts and destruction of axillary skin due to ulcers in the right axillary region, as well as near-diffuse involvement with some pustules and sinuses in the left axillary region (6).

First-line therapy for Hidradenitis Suppurativa is conservative therapy using medication and can be in the form of operative action adjusted to the condition and severity of HS (21). Previous case reports also showed the provision of various therapies and adjusted to the patient's clinical condition (7,8,17,18,22–24). Godiwalia et al., Noah Scheinfield, and Patrut et al. provided therapy in oral clindamycin tablets for cases of Hidradenitis Suppurativa stage 3 (15,20,25). In line with this case, namely by providing conservative management as a combination therapy of clindamycin 300 mg tablets every 12 hours and rifampicin 300 mg tablets every 12 hours for 8 weeks as an antimicrobial, anti-inflammatory, and immunomodulator. From the study, the combination of clindamycin and rifampicin has an effectiveness of 71-93% in the treatment of HS (26). Rifampicin is a broad-spectrum antibiotic that binds and inactivates bacterial DNA-dependent RNA polymerase and also modifies cell-mediated hypersensitivity by suppressing antigens from sensitized lymphocytes and T cells. While clindamycin inhibits bacterial protein synthesis by binding to the bacterial ribosomal 50S subunit, and as an anti-inflammatory (21). Symptomatic management given to patients is paracetamol 500 mg tablets every 8 hours a day as an analgesic (27). Furthermore, the management of this case is combined with non-pharmacological therapy in the form of 0.9% Sodium chloride compresses to dry the lesions and accelerate healing time (28). In addition, education to maintain body and predilection area cleanliness, wearing loose clothing to minimize friction on the predilection, and implementing a healthy lifestyle in weight loss is also essential to provide, because a higher body mass index is associated with the severity of hidradenitis suppurativa (26).

Tabel 1. Case review of hidradenitis suppurativa in the last 10 years. We had collected 15 cases from different countries in order to compare various aspects such as gender, age of onset, risk factors, staging, and the management.

Author	Country	Year	Gender	Age of First Onset	Age of Patient	Risk Factor	Microbial Culture	Staging Hurley	Case Management	Duration	Outcome
Gutierrez et al. (7)	-	2022	Man	-	36	-	No microbial culture performed	Stage 3	Injection Secukinumab 150 mg every weeks	2 years	Success
Perez et al.(17)	Spain	2014	Woman	16	50	Smoking	No microbial culture performed	Stage 2-3	Ustekinumab	1.5 years	Success
Laroche et al. (18)	-	2018	Woman	27	39	Smoking and Overweight	No microbial culture performed	Stage 2 + Cluster Headache	Verapamil	2 months	Success
Zhang et al.(8)	China	2018	Man	9	19	-	No microbial culture performed	Stage 3	Photodynamic therapy	2 weeks	Success
Alqahtani, SM (19)	Saudi Arabia	2023	Woman	21	22	Menstruation and deodorant use	*Staphylococcus aureus*	Stage 2	Surgery (elliptical excision + complete excision) + ciprofloxacin	Surgery 1 years, ciprofloxacin 1 weeks	Success
Chahine et al (9)	-	2018	Man	21	21	-	*Escherichia coli*	stage 3	IV ertapenem via peripherally inserted central catheter (PICC)	6 weeks	Success
Thorlacius et al(10)	Denmark	2017	Man	40	47	Diabetes and Obesity	No microbial culture performed	stage 3	Secukinumab 300 mg sc/ weeks for 4 weeks followed by 300 mg sc/ 4 weeks	12 weeks	Success
Huang et al (11)	China	2022	Man	11	20	Puberty	No microbial culture performed	stage 3	Doksisiklin, colchicine, thalidomide	1.5 years	Success
Kurokawa et al (12)	Japan	2023	Man	15	19	-	No microbial culture performed	stage 2	Topical bucladesine	2 months	Success
Godiwalla et al (20)	United States	2020	Woman	9	19	Physical training in military causing friction and irritation to inguinal region	No microbial culture performed	Stage 2	Clindamycin solution 1%, chlorhexidine solution 4% + laser hair removal	-	Success

Table 1. Continued

Harvey et al (13)	United States	2021	Man	26	31	-	Failed to reveal bacterial infection	Stage 3 + Abscess	Incision drainage + ciprofloxacin HCL 500 mg every 12 hours, clindamycin 300 mg every 8 hours, linezolid 600 mg every 12 hours	2 weeks	Success
Noah, Scheinfeld (25)	-	2015	Woman	-	57	CKD stage 5, Polycystic kidney disease, depression, hypothyroidism, irritable bowel syndrome, osteoporosis	Failed to reveal bacterial infection	Stage 3	Clindamycin 300 mg every 12 hours, rifampicin 300 mg every 24 hours, acitretin 10 mg	-	Success
Esme, P (14)	Turkey	2020	Man	28	43	-	*Candida glabrata*	Stage 3	Certolizumab pegol 400 mg every weeks	3 months	Success
Patrut et al. (15)	Romania	2021	Man	24	28	Smoker	*Staphylococcus epidermidis*	*Stage 3*	Prednisone initially at a dose 60mg per day, each week reduced with 5mg. Antibiotics (vancomycin, clindamycin), antiseptic and 2% clindamycin ointment and surgical treatment	1 months 2 weeks	Loss to Follow up
Nnamonu (16)	West Africa	2011	Man	14	54	Hepatitis B	*Staphylococcus aureus*	*Stage 3*	Oral Ciprofloxacin 500 mg twice daily + Rifampicin 300 mg twice daily	3 months	Success

Based on the pathophysiology of HS, it is caused by hyperkeratinization and rupture of hair follicles, thus triggering inflammatory substances and increasing various cytokines and chemokines (7). Other pharmacological therapies that can be given based on previous reports include secukinumab. This anti-IL-17A monoclonal antibody can be given in cases of HS moderate to severe and to control remission and prevent flares (7,10). This therapy can also be given in severe cases with a history of antibiotic therapy (7). However, therapy with secukinumab, which acts as an immunosuppressant, has been reported to trigger excessive growth of *Candida Sp*, which can worsen HS lesions (14). Other pharmacological therapies with monoclonal antibody groups are ustekinumab and certolizumab (anti-TNF-α monoclonal antibody) (14,17). This therapy can be given as an alternative therapy if there is no improvement with antibiotic therapy and surgery cannot be performed (14). Another HS management that can be given is surgery (13,19). Alqahtani (2023) reported a case of HS in a woman who did not improve with amoxicillin and clavulanate, so the patient underwent an elliptical incision followed by complete excision. After 1 year no recurrence was found (19).

4. Conclusion

In conclusion, hidradenitis suppurativa is a rare, highly recurrent disease. This case showed that recurrent lesions in typical regions, such as the axillary region, should be considered as HS and need to establish an early diagnosis and prompt treatment. Several options are available for treatment with a good outcome. In the line of this case, conservative treatment showed improvement in HS Hurley Stage III.

5. Acknowledgements and Conflict of Interest

The authors thank the patient for his consent and good intentions in answering our questions. We would also like to thank the Buleleng Regional General Hospital, Singaraja, Bali, for granting permission to collect data to prepare this case report.

6. Acknowledgements and Conflict of Interest

There are no conflicts of interest in this case report.

7. References

1. Saunte DML, Jemec GBE. Hidradenitis Suppurativa: Advances in Diagnosis and Treatment. JAMA [Internet]. 2017 Nov 28 [Accessed 2024 Aug 31];318(20):2019–32. Available from: https://pubmed.ncbi.nlm.nih.gov/29183082/
2. Nguyen TV, Damiani G, Orenstein LAV, Hamzavi I, Jemec GB. Hidradenitis suppurativa: an update on epidemiology, phenotypes, diagnosis, pathogenesis, comorbidities and quality of life. J Eur Acad Dermatol Venereol. 2021 Jan;35(1):50-61. doi: 10.1111/jdv.16677. Epub 2020 Jul 16. PMID: 32460374
3. Ingram JR. The epidemiology of hidradenitis suppurativa*. British Journal of Dermatology [Internet]. 2020 Dec 1 [cited 2024 Aug 31];183(6):990–8. Available from: https://onlinelibrary.wiley.com/doi/full/10.1111/bjd.19435
4. Collier EK, Parvataneni RK, Lowes MA, Naik HB, Okun M, Shi VY, et al. Diagnosis and management of hidradenitis suppurativa in women. Am J Obstet Gynecol. 2021;224(1):54–61.

5. Wolk Id K, Join-Lambert Id O, Sabat Id R, Sabat R. Aetiology and pathogenesis of hidradenitis suppurativa Funding sources. British Journal of Dermatology [Internet]. 2020 [cited 2024 Aug 31];183:999–1010. Available from: http://www.bmbf.de
6. Napolitano M, Megna M, Timoshchuk EA, Patruno C, Balato N, Fabbrocini G, et al. Hidradenitis suppurativa: from pathogenesis to diagnosis and treatment. Clin Cosmet Investig Dermatol [Internet]. 2017 Apr 19 [cited 2024 Aug 31];10:105–15. Available from: https://pubmed.ncbi.nlm.nih.gov/28458570/
7. Gutierrez E, Issa NT, Resnik B. Novel Regimen of IL-17A Inhibitor Secukinumab for the Remission of Severe Hidradenitis Suppurativa: Case Report. Journal of Drugs in Dermatology. 2022 Dec 1;21(12):1358–60.
8. Zhang Y, Yang Y, Zou X. Photodynamic therapy for Hidradenitis Suppurativa/acne inversa: Case report. Photodiagnosis Photodyn Ther [Internet]. 2018 Jun 1 [cited 2024 Oct 10];22:251–2. Available from: https://pubmed.ncbi.nlm.nih.gov/29709603/
9. Chahine AA, Nahhas AF, Braunberger TL, Rambhatla P V, Hamzavi IH, Detroit B. CASE REPORT Ertapenem rescue therapy in hidradenitis suppurativa. JAAD Case Rep [Internet]. 2018 [cited 2024 Oct 10];4:482–3. Available from: https://doi.org/10.1016/j.jdcr.2017.12.010
10. Thorlacius L, Theut Riis P, Jemec GBE. Severe hidradenitis suppurativa responding to treatment with secukinumab: a case report. British Journal of Dermatology [Internet]. 2018 Jul 1 [cited 2024 Oct 10];179(1):182–5. Available from: https://dx.doi.org/10.1111/bjd.15769
11. Huang J, Tsang LSL, Shi W, Li J. Pyoderma Gangrenosum, Acne, and Hidradenitis Suppurativa Syndrome: A Case Report and Literature Review. Front Med (Lausanne) [Internet]. 2022 Mar 24 [cited 2024 Oct 10];9. Available from: /pmc/articles/PMC8987973/
12. Kurokawa I, Kita K, Hashimoto T. Successful treatment of ulceration in hidradenitis suppurativa with topical bucladesine: A case report. Skin Health and Disease [Internet]. 2024 Feb 1 [cited 2024 Oct 10];4(1):e321. Available from: https://onlinelibrary.wiley.com/doi/full/10.1002/ski2.321
13. Harvey LM, Fortson JK. Hidradenitis Suppurativa at an Uncommon Site: A Review of Its Clinical Features, Diagnostic Difficulties, and Management. Cureus [Internet]. 2021 Oct 12 [cited 2024 Oct 10];13(10). Available from: /pmc/articles/PMC8584235/
14. Esme P, Akoglu G, Caliskan E. Rapid Response to Certolizumab Pegol in Hidradenitis Suppurativa: A Case Report. Skin Appendage Disorder [Internet]. 2021 [cited 2024 Oct 10];7:58–61. Available from: www.karger.com/sad
15. Patrut E, Fabian OV, Cozma A, Muntean M, Chir AI, Pătruţ EM, et al. Hidradenitis Suppurativa. A Case Report. Ann Ital Chir [Internet]. 2023 May 8;12:12–20. Available from: https://www.researchgate.net/publication/370844848
16. MI N. HIDRADENITIS SUPPURATIVA - A CASE REPORT. J West Afr Coll Surg [Internet]. 2011 [cited 2024 Oct 16];1(4):60. Available from: /pmc/articles/PMC4170276/
17. Santos-Pérez MI, García-Rodicio S, del Olmo-Revuelto MA, Pozo-Román T. Ustekinumab for Hidradenitis Suppurativa: A Case Report. Actas Dermosifiliogr [Internet]. 2014 Sep 1 [cited 2024 Oct 10];105(7):720–2. Available from: http://www.actasdermo.org/es-ustekinumab-for-hidradenitis-suppurativa-a-articulo-S1578219014001711

18. Laroche ML, Teste M, Vanoost J, Geniaux H. Successful control of hidradenitis suppurativa with verapamil: a case report. Fundam Clin Pharmacol [Internet]. 2019 Feb 1 [cited 2024 Oct 10];33(1):122–4. Available from: https://onlinelibrary.wiley.com/doi/full/10.1111/fcp.12403
19. Alqahtani S. Management of axillary hidradenitis suppurativa: A case report. Int J Health Sci (Qassim). 2023;17(1):61.
20. Godiwalla R, Storie E, Winn A. Case Report Hidradenitis Suppurativa in the Military. Military Dermatology. 2020;106(4):181–4.
21. Wolff Klaus, Johnson RAllen, Saavedra AP., Roh Ellen. Fitzpatrick's color atlas and synopsis of clinical dermatology. 2017;927.
22. Amat-Samaranch V, Agut-Busquet E, Vilarrasa E, Puig L. New perspectives on the treatment of hidradenitis suppurativa. Ther Adv Chronic Dis [Internet]. 2021 Nov 1 [cited 2024 Aug 31];12. Available from: https://doi.org/10.1177/20406223211055920https://doi.org/10.1177/20406223211055920
23. Seyed Jafari SM, Hunger RE, Schlapbach C. Hidradenitis Suppurativa: Current Understanding of Pathogenic Mechanisms and Suggestion for Treatment Algorithm. Front Med (Lausanne) [Internet]. 2020 Mar 4 [cited 2024 Aug 31];7. Available from: https://pubmed.ncbi.nlm.nih.gov/32195261/
24. Caposiena Caro RD, Cannizzaro MV, Botti E, Di Raimondo C, Di Matteo E, Gaziano R, et al. Clindamycin versus clindamycin plus rifampicin in hidradenitis suppurativa treatment: Clinical and ultrasound observations. J Am Acad Dermatol [Internet]. 2019 May 1 [cited 2024 Aug 31];80(5):1314–21. Available from: https://pubmed.ncbi.nlm.nih.gov/30502416/
25. Scheinfeld N. Extensive hidradenitis suppurativa (HS) hurly stage III disease treated with intravenous (IV) linezolid and meropenem with rapid remission. Dermatol Online J [Internet]. 2015 [cited 2024 Oct 10];21(2). Available from: https://escholarship.org/uc/item/42h2744m
26. Hendricks AJ, Hsiao JL, Lowes MA, Shi VY. A Comparison of International Management Guidelines for Hidradenitis Suppurativa. Dermatology [Internet]. 2021 Jan 1 [cited 2024 Aug 31];237(1):81–96. Available from: https://pubmed.ncbi.nlm.nih.gov/31645040/
27. Menaldi S, Bramono K, Indriatmi W. Ilmu penyakit kulit dan kelamin [Internet]. 7th, Cetakan Keenam ed. Jakarta: Balai Penerbit FKUI; 2019 [cited 2024 Aug 31]. Available from: https://library.fk.ui.ac.id/?p=show_detail&id=25479
28. Hidayati A, Damayanti, Sari M, Alinda M, Reza N, Anggraeni S, et al. Infeksi Bakteri di Kulit [Internet]. 1st ed. Surabaya: Airlangga University Press; 2019 [cited 2024 Aug 31]. 1 p. Available from: https://books.google.co.id/books/about/Infeksi_Bakteri_di_Kulit.html?id=WyIgEAAAQBAJ&redir_esc=y