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PROFILE OF ACNE VULGARIS PATIENTS AT BETHESDA HOSPITAL YOGYAKARTA FROM JULY 2019 – DECEMBER 2020

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ABSTRACT

Background Acne vulgaris is a chronic inflammatory disease of the pilosebaceous follicles. This disease is usually found in more than 85% of young adults worldwide. Acne vulgaris can cause psychological morbidity and also greatly affects socio-economic and the quality of life. Patients often have already tried several treatments, but still do not get good results. Therefore, it is important to identify the type of lesion and then choose the right treatment for acne vulgaris.
Objective To know the profile of acne vulgaris patients at the Dermatology and Venereology Clinics of Bethesda Hospital Yogyakarta, from July 2019 to December 2020.
Methods This study was a descriptive-retrospective study, using secondary data from the medical records of acne vulgaris patients. Data will be collected in the percentage frequency distribution table.
Results This research was done in the medical records department of Bethesda Hospital Yogyakarta from February – April 2022. The number of samples taken by total sampling technique that matched the inclusion and exclusion criteria was 151 records. The highest percentage of acne vulgaris patients were female 72.2% (109 people), aged 20-24 years 57.0% (86), had inflammatory skin lesions 54.3% (82), received combination of topical and systemic treatment 80.8% (122), the most topical treatment prescribed was niacinamide 80.8% (122), the most systemic treatment was antibiotics 41.7% (63), the most systemic antibiotic was minocycline 73.0% (46), the highest visiting frequency was once (without control) 57.6% (87), and irregular follow-up visits 60.9% (92).
Conclusion Based on the study conducted, patients with acne vulgaris were dominated by females, aged 20-24 years. One of the most prominent symptoms was inflammatory skin lesions. The patients have received combinations of topical and systemic treatment. The most used topical treatment was niacinamide; the most used systemic treatment was antibiotics; and the most used systemic antibiotic was minocycline. The highest trend for visiting frequency were irregular controls followed by one-time doctor visit without control.
Keywords Acne Vulgaris, Demography, Therapeutics, Control

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INTRODUCTION

Acne vulgaris is a chronic inflammatory disease of pilosebaceous follicles, that frequently affects people all over the world. The etiology of it has not been established, but it has several causal factors such as genes, race, hormones, climate, humidity, temperature, stress, cosmetics, medicines, and diet. This disease is usually found in more than 85% of young people worldwide.[1] In Indonesia, it affects 80-100% of population with the highest prevalence of 85-100% in male adolescents of 16-19 years old and 83-85% in female adolescents of 14-17 years old.[2]

Acne vulgaris does not have any effect on mortality, but it causes psychological morbidity such as depression, anxiety, and even suicide; it also greatly affects socio-economic and the quality of life.[3] It is because facial appearance is an important aspect of the self-image of an individual. Other problems resulting from it include unhappiness with his/her physical

appearance, less self-confidence, shyness, afraid of interacting with others, and decreasing opportunity to work and to socialize.[4,5]

Usually, those affected by the disease have tried several treatments that took time and money, but do not get any good results. It shows that it is important to identify the type of lesion and choose the right treatment for acne vulgaris for faster recovery, prevent the formation of permanent scar tissue, and prevent the formation of new acne.[6,7] It is also important to find out the distribution of patients with acne vulgaris in a society because it is useful for planning, monitoring, and evaluating health program implementation. Additionally, it is also useful in formulating more effective preventive and promotive efforts in skin health related to the acne vulgaris in a society.[8] This study aimed at observing the profile of those with acne vulgaris in the Dermatology and Venereology Clinics of Bethesda Hospital Yogyakarta in 2019-2020.

METHODS

This study was a descriptive-retrospective study, using secondary data from acne vulgaris patients in the Dermatology and Venereology Clinics of Bethesda Hospital Yogyakarta who got the medical treatment from July 2019 to December 2020. It was conducted in the Department of Medical Records of Bethesda Hospital Yogyakarta from January 2022 to April 2022. Samples were taken by *total sampling*. The inclusion criterion was new patients with acne vulgaris who were 10-24 years old and registered in manual and electronic medical records. Patients were excluded if there were no data on sex and age recorded in the medical record. The minimal number of the samples was established using proportion estimation formula for descriptive study, which included 138 subjects. The demographic characteristics (sex and age), skin disorder manifestation, acne vulgaris therapy, visiting frequency, and control regularity will be analyzed descriptively. This study has got ethical clearance from the Ethical Committee of Health Study of the Faculty of Medicine of Duta Wacana Christian University.

RESULTS

The number of medical records of patients with acne vulgaris in the Dermatology and Venereology Clinics of Bethesda Hospital Yogyakarta in the period of July 2019 to December 2020 was 246 documents. There were 95 documents that did not meet the inclusion criteria, which contained old (not new) patients, aged younger than 10 years old or older than 25 years old. There was not any document that met the exclusion criteria, meaning that all of the documents contained complete data on the sex and the age of the patients. The final number of samples was 151 documents.

Table 1. The *D*emographic Characteristics, The Skin Disorder Manifestation, The Therapy, The Visiting Frequency, *and* The Follow-up Visit Regularity of Patients with Acne Vulgaris (n = 151)

Characteristics	n	%
Sex		
Male	42	27.8
Female	109	72.2
Age		
10-14	11	7.3
15-19	54	35.8
20-24	86	57.0
Skin Disorder Manifestations		
Inflammatory	82	54.3
Non-inflammatory	14	9.3

Not included	55	36.4
Therapies		
Topical therapy only	29	19.2
Topical-systemic combined therapy	122	80.8
Types of Topical Therapy		
One kind	8	5.3
More than one kind	143	94.7
Types of Systemic Therapy		
One kind	28	18.5
More than one kind	123	81.5
Visiting Frequency		
Once (without any control visit)	87	57.6
Twice a week	14	9.3
Once a month	22	14.6
Once in more than a month	28	18.5
Follow-up Visit Regularity		
Regular	29	19.2
Irregular	92	60.9
Could not be evaluated	30	19.9

The highest percentage of the sex of patients with the acne vulgaris in Bethesda Hospital in the period of July 2019 to December 2020 was female 72.2% (109 people), while more than half of the patients age in the range of 20-24 years old (57.0% or 86 people). Most of the skin disorder manifestation was inflammatory skin lesions (54.3% or 82 people). The highest percentage of the therapy was topical-systemic combined therapy 80.8% (122 people). There was not any patient who was given systemic therapy only. More than three-fourths of the therapy was topical-systemic combined therapy (80.8% or 122 people). There was not any patient who was given systemic therapy only. The highest percentage of the types of topical therapy was one kind 94.7% (143 people). The highest percentage of the types of systemic therapy was more than one kind 81.5% (123 people). Most patients came to see the doctor only once, without any follow-up visit (57.6% or 87 people). Those who came for follow-up visits, more than half did not come with regular schedule of follow-up visits (60.9% or 92 people).

Table 2. The Types of the Topical and Systemic Therapy (n = 151)

Types of Topical Therapy	**n**	**%**
Retinoid	117	77.5
Antibiotics	36	23.8
Niacinamide	122	80.8
Antioxidant	18	11.9
Facial cleanser	110	72.8
Anti-hyperpigmentation	2	1.3
Anti-aging	19	12.6
Sunscreen	92	60.9
Salicylic acid	4	2.6
Corticosteroid	2	1.3
Topical combination		

Antibiotics + Retinoid	90	59.6
Antibiotics + BPO	1	0.7
Others	9	6.0
Types of Systemic Therapy		
Antibiotics	63	41.7
Antioxidant	61	40.4
Antihistamine	22	14.6
Corticosteroid	3	2.0

The highest percentage of the type of the topical therapy of the patients with the acne vulgaris in Bethesda Hospital in the period of July 2019 to December 2020 was niacinamide 80.8% (122 people). The topical combination consisted of topical antibiotics and retinoid and the combination of antibiotics and BPO. The main systemic therapy was antibiotics (41.7% or 63 people).

Table 3. The Type of the Systemic Antibiotics (n = 63)

The Type of Systemic Antibiotics	n	%
Minocycline	46	73,0
Doxycycline	7	11,1
Azithromycin	3	4,8
Clindamycin	6	9,5
Metronidazole	1	1,6

The highest percentage of the type of the systemic antibiotics of the patients with the acne vulgaris in Bethesda Hospital in the period of July 2019 to December 2020 was minocycline 73.0% (46 people).

DISCUSSION

The number of female patients in the study was higher than that of the male patients. The results of the study were consistent with those of the studies by Pratiwi (2016) and Olivia (2014) showing that the highest number of the patients with acne vulgaris consisted of females.[9,10] It might be because of the risk factor of the acne vulgaris related to hormones and cosmetics. Progesterone hormone stimulated the increase in sebaceous gland activity in females and the activity of the sebaceous gland became more active in a week before menstruation, so that it could increase the growth of acne vulgaris.[11] Cosmetics could also increase the formation of the acne vulgaris in the females because the cosmetics contained acnegenic and comedogenic chemicals. Those who kept changing cosmetics were at risk of being exposed to increasing danger of the chemicals because the skin had to adapt to the content of new active ingredients and concentrations.[12] Additionally, they were more concerned with appearance than males and hence it motivated them to visit doctors for medical treatments.[5]

The results of the study showed that most of the patients aged 20-24 years. It was consistent with prior studies by Putra (2020) and Mizwar (2012) showing that the highest percentage of the age of the patients with the acne vulgaris was in the range of 15-24 years old.[13,14] The range of the age represented late adolescence period. The percentage of the incidence of the acne vulgaris in adolescence all over the world was 85%. The acne vulgaris was found in Indonesia in 80-100% of its population and the highest percentage was found in adolescence.[1] It related to puberty hormone of the adolescence that increased the growth of the acne vulgaris.[15] The post-adolescence (≥ 25 years old) was not considered as a risk factor of acne vulgaris because of the difference in clinical symptom.[16]

The results of the study showed that the number of patients with inflammatory skin lesions was higher than that of the patients with non-inflammatory skin lesions. This finding was consistent with the results of prior studies by Ayudianti and Indramaya (2014) and Wibawa and Wiyana (2019) showing that the highest number of the skin disorder manifestation consisted of papulopustular lesions.[6,17] It showed that most of the skin disorder manifestation of the patients with the acne vulgaris who got medical treatment consisted of reddish and painful inflammatory lesion in the forms of papule, pustule, nodule, and cystic acne.[18] However, some medical records did not include patient's skin disorder manifestation so that the results did not provide complete description of the skin disorder manifestation.

The results of the study showed that the highest percentage of the therapy was topical-systemic combined therapy. The combined therapy was given because it could improve the effectiveness of the therapy and reduce the risk of bacterial resistance. The combined therapy was also effective for moderate and severe acne vulgaris, it related to the highest percentage of the skin disorder manifestation which was inflammatory lesions. There was not any patient who was given systemic therapy only. The systemic therapy was usually given as adjuvant therapy of the topical therapy, especially in the case of mild and severe acne vulgaris.[19]

The highest percentage of the type of the topical therapy consisted of niacinamide. The niacinamide represented an active derivative of vitamin B3 (niacin) that was effective in alleviating the inflammation in the patients with the acne vulgaris. It could decrease triglyceride synthesis and fatty acid in sebaceous gland and in turn reduce the formation of the acne vulgaris. The medicine could be given as single or combined therapy. Usually, it was also given as maintenance therapy of the patients with the acne vulgaris.[20]

The highest percentage of the systemic therapy consisted of antibiotics. There was not any patient who was given hormonal medicine and systemic retinoid. The systemic antibiotics were most frequently used because it could hamper the growth of *P. acnes* bacteria and prevent inflammation, so it was effective in the therapy of the acne vulgaris because they could alleviate reddish symptoms and reduce the number of lesions.[21] They were used in the cases of mild and severe acne vulgaris and inflammatory lesions that could not be treated using topical medication. They should be applied in as short period of time as possible and re-evaluated in 3-4 months to prevent resistance.[22]

The systemic antibiotics used in Bethesda Hospital in 2019-2020 included minocycline, doxycycline, azithromycin, clindamycin, and metronidazole. Based on the guideline of acne management in Indonesia, the first line systemic antibiotic therapy was tetracycline group (doxycycline and minocycline) for mild acne vulgaris and azithromycin for severe acne vulgaris. The second and third line therapies included other antibiotics such as clindamycin, macrolide group (erythromycin), dapsone, and trimethoprim sulfamethoxazole. The minocycline was most widely used because it had higher effectiveness in reducing *P. acnes* bacteria than doxycycline or tetracycline.[16]

The highest number of the visit of the patient with the acne vulgaris was once or without any follow-up visit. The majority of the patients only visited the clinics once though the acne vulgaris follow-up visit was required to evaluate the therapy. The efficacy of the therapy could be influenced by several factors that were not examined in this study, which related to the age of patients (adolescence and young adult), the lack of knowledge of the patients, and the presence of therapy side effects.[23] Additionally, it could also be influenced by the satisfaction level of the patients on the

therapy and the medical care they got, or the condition of the patients that became better.[24]

The result of this study showed that the highest percentage of the control visit regularity was irregular follow-up visit. Nineteen patients could not be evaluated because they visited the clinics only twice. The irregular follow-up visit could influence the results of the therapy of the patients. The results of the therapy of the patients who did not make any follow-up visit could not be evaluated and hence the therapy might not be maximal. The therapy of the patients could be changed after 6-8 weeks of the therapy.[25] The acne vulgaris was also a chronic disease with remission period, persistence, relapse, or exacerbation. Therefore, it was important to follow-up and evaluate the therapy so that the lesion did not become worse.[16]

CONCLUSION

The profile of acne vulgaris patients who got medical treatments in the Dermatology and Venereology Clinics of Bethesda Hospital Yogyakarta from July 2019 to December 2020 were mostly female, aged 20-24 years, had inflammatory skin lesions, received combination of topical and systemic treatment, received topical treatment of niacinamide, systemic treatment containing antibiotics (minocycline), and saw the doctor only once (without follow-up visit).

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There was no conflict of interest in the study. Author covered all of the necessary costs for the study.

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