

Vitiligo Profile at Dr. Zainoel Abidin Hospital, Banda Aceh: retrospective study

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ABSTRACT

Introduction: Vitiligo is a skin condition characterized by a lack of or damage to melanocytes, which results in depigmented lesions on the skin and mucosa.

Objective: To describe the patients' profile of vitiligo at the Dermatology and Venereology Clinic of dr. Zainoel Abidin General (RSUDZA) Hospital Banda Aceh.

Methods: A retrospective observational descriptive study on vitiligo patients who were treated at the Dermatology and Venereology Clinic of RSUDZA Banda Aceh for the period January 2017 to June 2023.

Results: A 6-year observation yielded a total of 215 vitiligo patients. The year with the most vitiligo visitors was 2022 (54 patients). Most cases were in women (53%), the majority of the age group >55 years (22%), age of onset 46-55 years (16%), and only 2% had a family history of vitiligo. The most prevalent dermatological conditions were acrofacial vitiligo (24%), multiple lesions (83%), nummular lesions (28%), and the presence of head and neck lesions (20%). Topical steroids were given to the patient as topical therapy (97%). A total of 31% of patients had oral medication, while 29% received phototherapy.

Conclusion: Most of the vitiligo patients at Dr Zainoel Abidin Hospital are women with nonsegmental lesions. The most common therapy given is topical steroids.

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INTRODUCTION

Vitiligo is a skin disorder caused by a deficit or damage to melanocytes, resulting in depigmented lesions on the skin and mucosa.(Bergqvist & Ezzedine, 2020; Wang et al., 2019) The cause of melanocyte deficiencies in vitiligo patients is still being debated. Autoimmune processes and oxidative stress are thought to be the causes of melanocyte death.(Malik & Cohen, 2021; Thakur et al., 2021; Wang et al., 2019) The literature also suggests that genetic factors play a significant role in vitiligo incidence.(Bergqvist & Ezzedine, 2020) The exact etiology of vitiligo is still unclear and is often considered a multifactorial disease with complex pathogenesis. Factors such as poor nutrition, emotional stress, autoimmunity, trauma, drugs, infections, sepsis, and exposure to sunlight, chemicals, and toxins are often considered as triggers.(Chauhan et al., 2020)

Vitiligo onset can occur in both children and adults regardless of gender.(Kang et al., 2019) However, studies show that vitiligo onset is most common before the age of 30 years.(Kang et al., 2019) Lesions found in vitiligo patients are macules or patches of depigmentation with variations in size, shape and location.(Chauhan et al., 2020; Kang et al., 2019) The diagnosis of vitiligo can be made based on clinical findings.(Bergqvist & Ezzedine, 2020; Kang et al., 2019; Thakur et al., 2021) Further supporting investigations such as laboratory and histological examinations are

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used to confirm the diagnosis.(Bergqvist & Ezzedine, 2020; Kang et al., 2019; Thakur et al., 2021) Vitiligo treatment generally includes topical therapy, phototherapy, psychological intervention, cosmetic therapy, depigmentation therapy, combination therapy, and surgery.(Kang et al., 2019)

The prevalence of vitiligo is estimated at 1%-2% in the entire population in the world.(Chauhan et al., 2020) In addition, research conducted in India reported that chemical-induced vitiligo patients reached 8.8%.(Kang et al., 2019) Research conducted by Nurina et al. reported that the prevalence of vitiligo patients at RSUD Dr. Soetomo for the period 2012-2014 was 188 people or 0.2% of total patient visits with variations in patient characteristics and lesions found.(Rahmayanti & Rahmadewi, 2016) The prevalence of vitiligo in RSUD Dr. Zainoel Abidin Banda Aceh is not yet known for sure.

Difficult treatment and the social effects felt by patients require doctors to carry out comprehensive treatment to obtain good outcomes. Therefore, researchers are interested in conducting this research which can later be used as a source of information or reference. It is hoped that by knowing the characteristics of vitiligo, we can understand the typical clinical symptoms and also can study the pathogenesis of vitiligo.

METHODS AND MATERIAL

This study is a retrospective observational descriptive study in which the type of data in this study is secondary data obtained from the medical records of vitiligo patients at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital Banda Aceh. Data collection was carried out in July 2023 at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital Banda Aceh.

The population of this study were all patients diagnosed with vitiligo at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital Banda Aceh. The sample of this study were all patients diagnosed with vitiligo at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital Banda Aceh who met the inclusion and exclusion criteria. Patients diagnosed with vitiligo by a dermatologist at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital Banda Aceh from January 2017 to June 2023 were the inclusion criteria while incomplete patient medical record data, such as history taking and physical examination that assisted in diagnosing vitiligo were the exclusion criteria.

The sampling technique in this study was carried out with non-probability sampling technique using total sampling. The instrument in this study is the patient's medical record which will collect data in the form of patient name (initials), gender, current age, age at vitiligo onset, address, occupation, patient status (new patient), type of vitiligo, number of lesions, type of lesion, lesion size, topical therapy, oral therapy, phototherapy, and family history. After the data was collected, univariate analysis was performed to assess the descriptive distribution using SPSS 25.0 application.

RESULTS

In this study, there was a sample of 215 patients obtained from the medical records of vitiligo patients at the Dermatology and Venereology Polyclinic of dr. Zainoel Abidin hospital Banda Aceh for the period January 2017 - June 2023 who met the inclusion criteria and exclusion criteria.

The number of vitiligo patient visits to the Dermatology and Venereology Polyclinic of RSUD Dr. Zainoel Abidin Banda Aceh by year is presented in Graph 1.

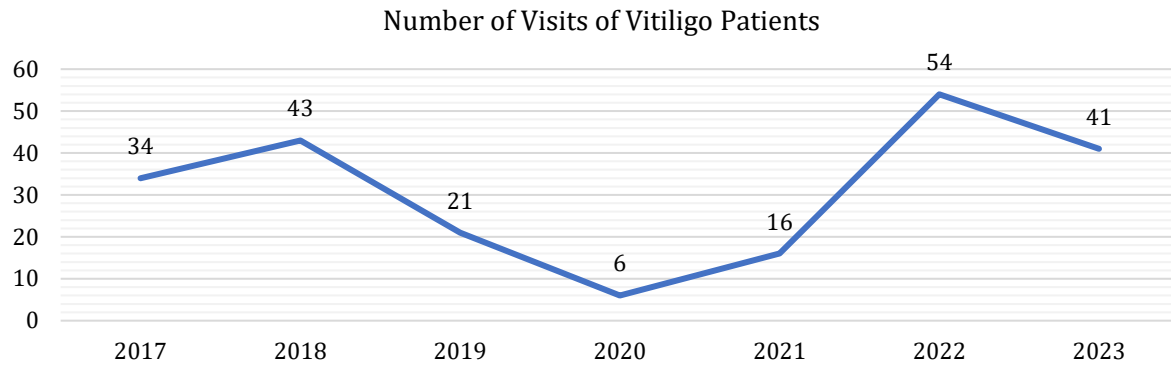


Figure 1. Number of visits of vitiligo patients at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital

Based on figure 1, the number of visits of vitiligo patients who came to the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital experienced fluctuations where there was an increase in 2022 (54 patients), which then continued to decline until mid-2023.

Table 1. Characteristics of vitiligo patients for each gender at the Dermatology and Venereology Polyclinic of RSUD. Dr. Zainoel Abidin

Patient's characteristics	Man		Woman	
	n	%	n	%
Ages				
<17 years	17	8	21	10
17-25 years	14	7	18	8
26-35 years	12	5	12	6
36-45 years	20	9	22	10
46-55 years	18	8	13	6
>55 years	21	10	27	13
Ages of onset				
<17 years	13	6	15	7
17-25 years	7	3	6	3
26-35 years	9	4	11	5
36-45 years	15	7	13	6
46-55 years	12	6	22	10
>55 years	5	2	10	5
Unknown	41	19	36	17
Family history				
Yes	3	1	2	1
No	99	46	111	52
Total	102	47	113	53

In Table 1, the characteristics of vitiligo patients at the Dermatology and Venereology Polyclinic of RSUDZA for the period January 2017 - June 2022 based on gender showed that 102 patients were male (47%) and 113 patients were female (53%). In Table 2, it shows that vitiligo patients are dominated by the age group >55 years, as many as 48 patients (22%). Meanwhile, the age of vitiligo onset in vitiligo patients observed was mostly in the age group 46-55 years, as many as 34 patients (34%), followed by the age group <17 years, and 36-45 years 28 patients respectively. Based on family history, only 5 patients (21%) had a family history of vitiligo.

Table 2. Dermatologic status of vitiligo patients in Dermatology and Venereology Polyclinic of. Dr. Zainoel Abidin hospital

Dermatological status	Frequency (n = 215)	Percentage (%)
Type of vitiligo		
Focal	37	17
Segmental	47	22
Acrofacial	52	24
Universal	28	13
Mixed	51	24
Number of vitiligo		
Soliter	36	17
Multiple	179	83
Lesion's size		
Milier	4	2
Lenticuler	4	2
Gutatte	10	5
Numular	60	28
Plaque	35	16
Milier-Gutatte	5	2
Milier-Numular	3	1
Milier-Plaque	2	1
Lenticuler-Guttate	12	6
Lenticuler-Numular	29	13
Lentikuler-Plaque	20	9
Gutatte-Numular	12	6
Gutatte-Plaque	5	2
Numular-Plaque	14	7
Lesion's location		
<i>Head and neck</i>	42	20
<i>Trunk</i>	13	6
<i>Upper extremities</i>	6	3
<i>Hands</i>	25	12
<i>Lower extremities</i>	4	2
<i>Feet</i>	3	1
<i>Hands and feet</i>	10	5
<i>Head and neck + Feet</i>	3	1
<i>Head and neck + Hands</i>	3	1
<i>Head and neck + Hands and feet</i>	11	5
<i>Head and neck + lower extremities</i>	2	1
<i>Head and neck + Trunk</i>	7	3
<i>Head and neck + Trunk + Hands</i>	5	1
<i>Head and neck + Trunk + Hands and feet</i>	3	1
<i>Head and neck + Trunk + Lower extremities</i>	2	1
<i>Head and neck + Trunk + Upper extremities</i>	6	3
<i>Head and neck + Trunk + Upper extremities + Lower extremities</i>	18	8
<i>Head and neck + Upper extremities</i>	3	1
<i>Head and neck + Upper extremities + Lower extremities</i>	10	5
<i>Trunk + Feet</i>	1	1
<i>Trunk + Hands</i>	4	2

Dermatological status	Frequency (n = 215)	Percentage (%)
<i>Trunk + Hands and feet</i>	5	2
<i>Trunk + Upper extremities</i>	4	2
<i>Trunk + Lower extremities</i>	7	3
<i>Trunk + Upper extremities + Lower extremities</i>	6	3
<i>Upper extremities + Hands and feet</i>	2	1
<i>Upper extremities + Lower extremities</i>	8	4
<i>Lower extremities + Hands and feet</i>	2	1

Based on table 2, it shows that the dermatological status of vitiligo found in the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital for the period January 2017 - June 2023 is dominated by the type of acrofacial vitiligo found in 52 patients (24%), the number of multiple lesions in 179 patients (83%), the size of numular lesions in 60 patients (28%), and the location of lesions in the head and neck region in 42 patients (20%) followed by the hands region in 25 patients (12%).

Table 3. Treatment of vitiligo patients at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital

Treatment	Frequency (n = 215)	Percentage (%)
Topical therapy		
Topical steroid	209	97
None	6	3
Oral therapy		
Yes	67	31
No	148	69
Phototherapy		
Yes	62	29
No	153	71

Based on table 3, it shows that the treatment given to vitiligo patients at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital in the period January 2017 - June 2023 was 209 patients (76%) received topical therapy, 67 patients (31%) received oral therapy, and phototherapy was given to 62 patients (29%).

Table 4. Oral therapy in vitiligo patients at the Dermatology Polyclinic of Dr. Zainoel Abidin Hospital

Oral therapy	Frequency (n = 67)	Percentage (%)
Cetirizine 10 mg	16	24
Cetirizine 10 mg + Mecobalamin 500 mg	3	4
Loratadine 10 mg	13	6
Mecobalamin 500 mg	25	37
Mecobalamin 250 mg	2	3
Mecobalamin 500 mg + Zink	3	4
Zinc	10	15
Metilprednisolone 4 mg	2	3
Metilprednisolone 8 mg	3	4
Metilprednisolone 16 mg	1	1

DISCUSSION

Vitiligo is a skin disease caused by progressive loss of melanocytes, clinically characterized by milky white macules, which can also cause white hair or polyosis.(Kang et al., 2019). The data shows a decline in 2019, where the previous year there were 43 vitiligo patients. This is thought to be due to restrictions during the Covid-19 pandemic in Aceh, which caused a decrease in the number of patient visits for treatment. In 2021, it began to increase again every year, and peaked in 2022 at 54 patients.

In this study, the number of vitiligo patients based on gender was dominated by women as many as 113 people (53%). This result is in line with several studies showing that the prevalence of vitiligo in women is higher than that of men.(Gandhi et al., 2022; Rahmayanti & Rahmadewi, 2016) The peak prevalence in women is the first decade, while the peak prevalence in men is the fifth decade.(Rahmayanti & Rahmadewi, 2016) Whereas in another study conducted by Hidayatullah et al. showed different results, namely vitiligo was more common in men than women.(Hidayatullah, 2020) This is because women pay more attention to their skin condition, and are more alert if there are abnormalities that arise on the skin for aesthetic reasons

Based on age, this study showed that vitiligo patients were dominated by the age group >55 years, as many as 48 people (22%). This result is in line with the results reported by Mohr et al. which states that with increasing age, the risk of developing vitiligo will be greater.(Mohr et al., 2021) Research by Hidayatullah et al. found that most vitiligo sufferers were found at the age of over 40 years while in the publication by Nurina et al. found vitiligo sufferers with the highest distribution in the age group 25-44 years.(Hidayatullah, 2020; Rahmayanti & Rahmadewi, 2016) Behl et al. and Jaigirdar et al. stated that vitiligo lesions begin to appear in 50% of patients when they are less than 20 years old and almost 70-80% arise before the age of 30 years. This statement is not in accordance with the data obtained from this retrospective study where most were at the age of >55 years. This could be due to patients delaying seeking medical attention for various reasons such as economic factors, no serious complaints, or seeking treatment at other health facilities but not giving satisfactory results.(Rahmayanti & Rahmadewi, 2016)

In this study, the age of vitiligo onset was mostly found in the 46-55 years age group. Vitiligo is divided into rapid onset and late onset, generally rapid onset vitiligo appears after birth, can develop in childhood, and the average age is 20 years. Late-onset vitiligo is defined as vitiligo that appears after 50 years of age.(Ghosh, 2020) Family history showed that only 2% of patients had a family history of vitiligo. Epidemiologic studies have shown that vitiligo tends to run in families, but genetic risk is not absolute. About 20% of vitiligo patients have at least 1 first-degree relative with vitiligo, and the relative risk of vitiligo for first-degree relatives increases 7 to 10 times.(Mohr et al., 2021)

Table 2 shows that the dermatologic status of vitiligo was dominated by acrofacial vitiligo, with 52 patients (24%). Acrofacial vitiligo is depigmented macules limited to the face, head, hands and feet. It is characterized by depigmentation of the distal fingers and facial pits. It can then progress to involve other body sites, developing into a typically generalized vitiligo. Acrofacial vitiligo is more common in cases of vitiligo occurring in adults.(Bergqvist & Ezzedine, 2021; Passeron et al., 2019) The results of this study are not in line with research by Hidayatullah et al. that segmental vitiligo is the type of vitiligo that is commonly found.(Hidayatullah, 2020) Likewise, in a study conducted by Jyotsna Singh, the number of acrofacial vitiligo cases was only found in 9.6% of the samples.(Gupta, 2019)

The highest number of vitiligo lesions found in this study was multiple. The results of this study are supported by the publication of Sanjay Ghosh and Kavita Ghandi who mentioned that multiple lesions are more common in vitiligo patients. Vitiligo usually has clinical manifestations

in the form of multiple white spots or patches on the skin found on both sides of the body. Patients tend to come to health facilities when the number of lesions has increased and interferes with their appearance.(Gandhi et al., 2022)

The most common vitiligo lesion size found in this study was numular. This result may be related to the tendency of patients to seek treatment after large lesions that are cosmetically disfiguring. Larger lesions are associated with impaired appearance, resulting in distress, social stigmatization and lower quality of life.(Henning et al., 2020)

The head and neck region were the most common region with vitiligo lesions in this study, followed by the hands. Generalized vitiligo can start on any part of the body, but fingers, hands and face are often reported as the first lesion site by patients. It has been reported that when hands are the initial site, vitiligo most often progresses to the face, explaining the frequency of acrofacial vitiligo in such patients. The results of this study are not in line with a previous study conducted by Jyotsna Singh et al, where in that study, the most common location of vitiligo lesions was the lower extremities.(Gupta, 2019)

Based on table 3, it shows that the treatment given to vitiligo patients at the Dermatology and Venereology Polyclinic of Dr. Zainoel Abidin Hospital in the period January 2017 - June 2023 was 209 patients (97%) received topical therapy, and 67 patients (31%) received oral therapy. Topical steroids are effective in treating small lesions in vitiligo, superpotent (class 1) or potent (class 2-3) corticosteroids are preferred in the treatment of vitiligo. In vitiligo patients, melanocyte cells are replaced by antigen presenting cells (APC) known as Langerhans cells, therefore the use of corticosteroids in vitiligo patients aims to reduce the number of APC. Corticosteroids can reduce langerhans cell receptors so that they can reduce APC function.(Diana & Mulianto, 2018) Continuous use of topical steroids is only used for acrofacial vitiligo. High potency topical steroids should be avoided for periorcular vitiligo due to potential side effects. If there is no response after 3-4 months of continued treatment, topical steroids should be changed or used in conjunction with other therapeutic modalities.(Lei et al., 2021)

One of the oral therapies given in this study was mecobalamin. Treatment with methylcobalamin increased cell viability, increased melanin content, reduced intracellular reactive oxygen species accumulation, increased the activity of antioxidant enzymes superoxide dismutase (SOD) and catalase, reduced melanocyte apoptosis, and increased the expression of nuclear factor erythroid-2-related factor (Nrf2)/heme oxygenase-1 (HO-1) pathway. In addition, the protective effect of methylcobalamin was significantly weakened after inhibiting the Nrf2/HO-1 pathway.(An et al., 2021) The dosage of methylcobalamin use in vitiligo is 1.5 mg per day.(Yoon et al., 2020) Besides mecobalamin, another oral therapy given in this study was cetirizine. According to a study, oral antihistamines can reduce itching in some vitiligo patients.(Vachiramon et al., 2017) Zinc was also given in this study. In one study it was found that zinc levels were low in vitiligo patients, while vitamin D was still within normal limits.(Sani et al., 2019) Another study also stated that vitiligo had low zinc levels.(Mirnezami & Rahimi, 2018; Singh & Gera, 2019)

Phototherapy was given to 62 patients (29%). The phototherapy used was PUVB 5002. Narrow-band ultraviolet B (NB-UVB) therapy is phototherapy that uses wavelengths of 305-311 nm. This phototherapy can be used on children, pregnant or lactating women, and patients with liver and kidney dysfunction, and this therapy is quite effective and optimal results require 6-12 months of therapy.(Gupta, 2019) Repigmentation in NB-UVB therapy may occur due to activation, proliferation and migration of melanocytes at the root of the hair follicle to the epidermis and cause perifollicular pigmentation. NB-UVB is also said to stimulate the release of fibroblast growth factor and endothelin-1 in keratinocytes, where these two mediators can induce melanocyte proliferation. Targeted phototherapy using a 308-nm monochromatic excimer lamp

or laser is useful for the treatment of localized vitiligo. These devices deliver high-intensity light only to the affected area while avoiding exposure of healthy skin and lowering the cumulative dose of UV-B.(Ghosh, 2020)

CONCLUSION

Vitiligo can be found in both young and old. Treatment for vitiligo can include topical corticosteroids, systemic therapy and phototherapy. Most of the vitiligo patients at Dr Zainoel Abidin Hospital are women with nonsegmental lesions. The most common therapy given is topical steroids.

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