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Profile of Shingles Patients in Outpatient Settings Dermatology and Venereology

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Abstract

Herpes zoster (HZ) is a latent varicella zoster virus (VZV) reactivation has been related to aging and immunocompromised condition that affects the skin and mucosa. It becomes increasingly common. However, studies on the clinical profile of HZ in Indonesia are still lacking. Objective of the study is to describe clinico-epidemiological profiles of HZ in Dr. Moewardi General Hospital Surakarta, Indonesia in the period of January 2018 – December 2022. We conducted a retrospective study using the medical records of patients visiting Dermatovenereology Outpatient Clinic of Dr. Moewardi General Hospital Surakarta from January 2018 to December 2022. 48 subjects included in this study 31 of them are females (65%). The subjects were dominated by those aged >50 years old (n:30; 63%). Herpes zoster mostly occurred at thoracal dermatome (n:22: 46%). Top three comorbidities were hypertension (n:10; 21%) followed by autoimmune diseases (n:9: 18%) and malignancy history (n; 6; 13%). Antiviral drugs (n:33; 69%) and antibiotic ointment (n:33; 69%) were the most therapy. More than 50% of subjects received anticonvulsant gabapentin (n:28; 58%) and one-fourth of subjects received analgesic (n:12; 25%). Herpes Zoster most affects middle adulthood population invo involving thoracal dermatome. Hypertension, autoimmune disease and history of malignancy are the common comorbidity. The main therapy of HZ is antivirus in combination with anticonvulsant and analgesic.

Introduction

Shingles (HZ) or *shingles* is a skin disease characterized by eruptions and unilateral radicular pain that is localized dermatomically due to the reactivation condition of *varicella zoster virus (*VZV) (MN, 1981; San Martin et al., 2023) . The annual global incidence of HZ is around 2-5 per 1000 people per year and increases in the elderly which ranges from 8-12 per 1000 people. The condition of HZ in Southeast Asia tends to be poorly documented with an annual incidence of around 3-10 cases per 1000 people with the epidemiology of HZ in Indonesia which is still not reported in the literature. HZ lesions are in the form of dermatomal umbilical vesicular lesions with prodromal symptoms in the form of pain, paresthesia and itching. Immunocompromised conditions, (MN, 1981; Patil et al., 2022; San Martin et al., 2023) *Human Immunodeficiency Virus* (HIV)/*Acquired Immune Deficiency Syndrome* (AIDS), family history, aging, comorbid diseases, autoimmune diseases and malignancies are the main risk factors for HZ. HZ therapy aims to address symptoms and prevent the onset of complications, especially [4] *post herpetic neuralgia* (PHN) (San Martin et al., 2023).

This study was conducted to determine the profile of HZ patients at the Dermatology and Venereology Outpatient Installation of DR. Moewardi Surakarta Hospital in the last 5 years,

namely the period from January 1, 2018 to December 31, 2022. This study is expected to provide an overview of the characteristics of HZ based on gender, age, dermatome, comorbidities and management. Better knowledge of HZ is expected to help in the enforcement of the diagnosis, increase vigilance and appropriate treatment in clinical practice.

Methods

This study is a retrospective descriptive research using secondary data derived from the medical records of shingles patients in outpatient cases at the Dermatovenereology Polyclinic of Dr. Moewardi Hospital Surakarta, Indonesia for the period January 2018 - December 2022. The age range variables used in this study are based on the 2009 Ministry of Health Guidelines related to age, namely children (<10 years), adolescents (10-25 years), adults (>25-50 years) and the elderly (>50 years). The inclusion criteria of this study are patients with a diagnosis of HZ based on the year of visit, gender, age, affected dermatitis, comorbidities and management. The exclusion criteria are patients with incomplete medical record data.

Result and Discussion

The results of the study at the Dermatology and Venereology Polyclinic of Dr. Moewardi Surakarta Hospital for the period January 2018 to December 2022 obtained 48 HZ patients, where the number of patients with the highest HZ diagnosis in 2018 was 24 patients. However, there was the highest decrease in 2019 as many as 2 patients and in 2021 as many as 4 patients (Figure 1). The inconsistent decline and increase in HZ annual cases can be attributed to the *Coronavirus disease* (COVID-19) pandemic.

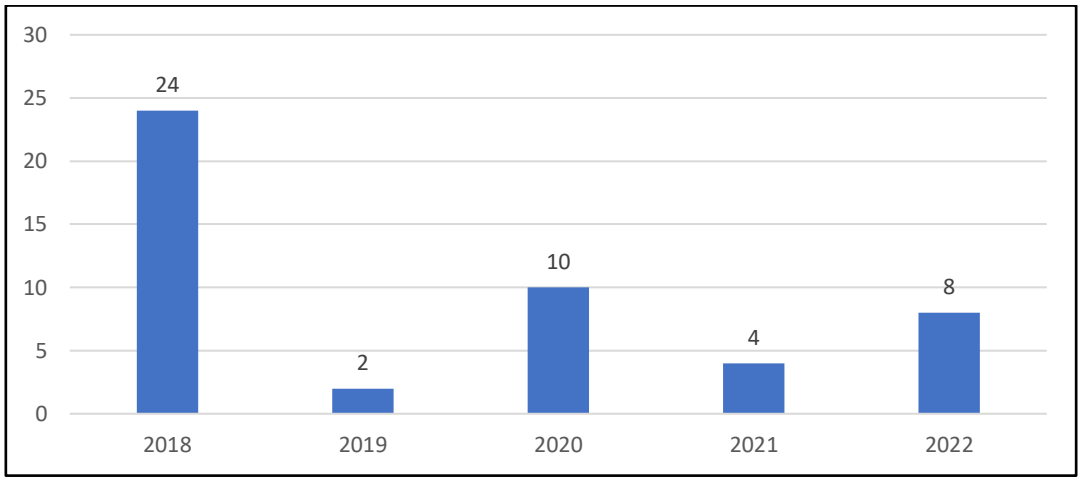

Figure 1. The number of HZ patients based on year at the Outpatient Installation of the Skin and Venereology Polyclinic of Dr. Moewardi Hospital Surakarta.

A total of 48 HZ patients in the period January 2018 to December 2022 with a total number of male patients as many as 17 (35%) and female patients as many as 31 patients (65%). The incidence of male HZ patients compared to female patients is 3:5. The oldest patient was 77 years old and the youngest patient was 9 years old, with the largest age range being adult patients, especially old adults as many as 30 patients (63%). The most dermatome involvement was thoracic dermatemia (n:22, 46%) followed by cervical (n:16.33%), lumbar (n:7.15%), sacral (n:3.6%), ophthalmica (n:2.4%) and maxillary (n:1, 2.1%). Antiviral therapy is the main therapy choice in most cases of HZ (n:33, 69%). The most prescribed additional therapies besides antivirals included gabapentin in 28 patients (58%), analgesics (n:12.25%), and topical therapies in the form of antibiotic ointments (n:33.69%) and salicylate powder (n:18.38%). Additional treatment includes oral corticosteroids (n:7.15%), oral antihistamines (n:5.10%), oral antibiotics (n; 2.4%), tricyclic antidepressants (n:1.2%). Vitamin B12 was also given as a supplement in 9 patients (19%) (Table 1).

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Table 1. Characteristics of the research subject

Variable	Total (n)	Percentage (%)
Gender		
Man	17	35
Woman	31	65
Age		
<10 years	1	2
10-25 years	6	13
>25-50 years old	11	23
>50 years	30	63
Dermatom		
Thoracal	22	46
Cervical	16	33
Lumbar	7	15
Sacred	3	6
Ophthalmic	2	4
Maxillary	1	2
Treatment		
Antivirus	33	69
Gabapentin	28	58
Analgesic	12	25
Vitamin B12	9	19
Oral Corticosteroids	7	15
Antihistamines	5	10
Oral antibiotics	2	4
Tricyclic antidepressants	1	2
Antibiotic ointment	33	69
Salicylate powder	18	38

Comorbidities in HZ patients varied with hypertension in 10 patients (21%), autoimmune diseases (n:9, 19%) and a history of malignancy (n:6, 13%). Other comorbidities include HIV infection (n:4.8%), history of coronary heart disease (n:4.8%), tuberculosis infection (n:4.8%), diabetes mellitus (n:3.6%), chronic kidney disease (n:3.6%) and as many as 5 patients (13%) have other skin diseases, namely veruka vulgaris, vitiligo, psoriasis, cellulitis and condyloma acuminata (Table 2).

Table 2. Distribution of comorbidities in patients with HZ

Variable	Number (n)	Percentage (%)
Hypertension	10	21
Autoimmune diseases	9	19
History of Violence	6	13
HIV infection	4	8
History of coronary heart disease	4	8
Tuberculosis infection	4	8
Diabetes mellitus (DM)	3	6
Chronic kidney disease	3	6
Other diseases	5	14

Shingles (HZ) or *Shingles* and varicella or *chickenpox* are two different clinical entities that are equally caused by an infection *Human Herpes Virus 3* or *varicella zoster virus* (VZV), a virus *alpha Herpesviridae* (MN, 1981; Patil et al., 2022). The difference is HZ occurs in a condition of VZV reactivation in the dorsalis sensory ganglia that causes a dermatomal diffuse pain rash

where the most common complication is long-term nerve pain known as postherpetic neuralgia (San Martin et al., 2023; Devor, 2018; Carod-Artal, 2018). Increased incidence in old age is associated with *Immunosenescence*, where there is a condition of the immune system that gets worse with age. The female sex is more dominant in the distribution of HZ patients reported in a systematic review with a meta-analysis by (Marra et al., 2020; Song et al., 2021; Vlak et al., 2011), in Canada, but the explanation related to this condition is still unclear and is suspected to be due to gender bias and hormonal status differences (Chuanchaiyakul et al., 2022; Marra et al., 2020; San Martin et al., 2023).

The clinical symptoms of HZ appear as a maculopapular rash that is eremic and painful and becomes a fluid-filled vesicle with unilateral spread and limited to a single dermatome (Marra et al., 2020). Events of HZ occur sporadically throughout the year with no seasonal prevalence and independent of varicose prevalence (Chuanchaiyakul et al., 2022). Increased incidence of HZ in old age is associated with *immunonecroscence*. (Marra et al., 2020; MN, 1981; San Martin et al., 2023) reported that female sex was more dominant in HZ without obvious cause but related to gender bias and hormonal status. In this study, the prevalence of HZ was 0.025% with the largest distribution in the age group >50 years (n:30; 63%) and female sex (n:31; 65%). Dermatome involvement in classical HZ is a single dermatome and most often affects T3-L2 (>50% of cases) with dermatome distribution not associated with any specific risk factor. In this study, the most dermatome involvement was thoracic dermatemia (n:22; 46%) (Marra et al., 2020).

The main risk factors for HZ are conditions that suppress cellular immunity such as malignancy, immunosuppressive disorders, immunosuppressant treatment, aging, chronic diseases, autoimmune, cerebrovascular disease and dyslipidemia along with HZ which is common in the elderly population. (Choi et al., 2019; Marra et al., 2020; Tanaka et al., 2021), Immunosuppression in HIV infection plays a role in a 7-15 times increased risk of HZ. [7] Hyperglycemic stress in diabetes mellitus (DM), hypertension and dyslipidemia can trigger subclinical inflammatory conditions that increase the risk of HZ. Chronic kidney disease conditions are 20x more susceptible to HZ due to systemic proinflammatory conditions of uremic toxin accumulation. This is in accordance with the risk factors for HZ in this study, the 3 most common conditions were found including hypertension (n:10, 21%), autoimmune diseases (n:9, 19%) and a history of malignancy (n:6, 13%) (Ahn et al., 2019; Chuanchaiyakul et al., 2022; Patil et al., 2022; Tanaka et al., 2021) (Table 2).

Therapy management in HZ conditions aims to accelerate the healing of lesions, overcome acute symptoms, prevent the onset of complications especially *postherpetic neuralgia* (PHN), muscle weakness and disseminated shingles (Bader, 2013; Johnson et al., 2008). Antiviral therapy plays a role in suppressing viral replication and is associated with a decrease in severity, shorter lesion duration and prevention of lesion spread. [1,10] The first-line therapy for HZ infection is an antiviral prescribed in 80% of HZ cases in Southeast Asia, which plays a role in suppressing viral replication and preventing the spread of lesions. The most common complication of HZ is severe and chronic pain in lesions known as post-traumatic neuralgia that requires therapy involving analgesics, anticonvulsants and antidepressants. Gabapentin anticonvulsant is an adjunct therapy with the aim of preventing complications (Fitriani et al., 2021; MN, 1981; Patil et al., 2022; San Martin et al., 2023) *of Post* herpetic neuralgia and overcoming acute pain in HZ which tends to be severe with the risk of central sensitization and chronic pain, so analgesic therapy is often prescribed along with anticonvulsants and antidepressants. Secondary infections can lead to the formation of post-healing scars, so topical antibiotic therapy may be given. Salicylate powder can reduce local symptoms and accelerate the drying of lesions (Fitriani et al., 2021; MN, 1981; Patil et al., 2022).

In this study, antiviral therapy was the main therapeutic choice in most cases of HZ (n:33, 69%) followed by additional anticonvulsant gabapentin in 28 patients (58%), analgesics in 12

patients (25%), and topical therapy in the form of antibiotic ointment (n:33.69%) and salicillate powder (n:18.38%). Additional treatment includes oral corticosteroids (n:7.15%), oral antihistamines (n:5.10%), oral antibiotics (n; 2.4%), tricyclic antidepressants (n:1.2%) and vitamin B12 were also given as supplementation in 9 patients (19%).

Conclusion

A retrospective study of the incidence of HZ at the Outpatient Installation of Dr. Moewardi Hospital Surakarta, Indonesia has been reported in the period January 2018 – December 2022. The condition of the incidence of HZ in this study can be drawn The conclusion is that the total incidence of HZ is 48 patients, predominantly in female patients and age groups over 50 years where the number of patients with the highest diagnosis of HZ in 2018 is 24 patients. However, there was the highest decrease in 2019 as many as 2 patients and in 2021 as many as 4 patients. Dermatom involvement is most prevalent in thoracal dermatitis, followed by cervical and lumbar. Comorbidities are common with HZ with the main comorbidities found being hypertension, autoimmune disease and a history of malignancy. The main therapy given to HZ patients is antivirals combined with anticonvulsants or tricyclic antidepressants. Additional therapy can be in the form of topical antibiotics, salicylic powder and vitamin B12 supplementation.

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