Control and Prevention of Transmission of Skin Infections

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ABSTRACT

Skin infections are the most common skin diseases found in densely populated, slum neighborhoods including boarding schools / pesantren. Skin infections can occur at any age, closely related to environmental influences, hosts and causative agents. Common skin infections in congested conditions are scabies infestations, dermatophytosis and pyoderma. Knowledge of skin infection symptoms, personal and environmental hygiene are also determinants of disease transmission. Some efforts to control and prevent the transmission of skin infections include screening for infectious diseases, treatment and providing counseling about skin diseases and ways to prevent transmission.

Keywords: Skin Infections, Prevention.

INTRODUCTION

Infectious diseases are the most common diseases in densely populated populations, one of which is the pesantren environment. Research at one Islamic boarding school showed that scabies infestation was the most common disease among students, followed by dermatophytosis and pyoderma.[1]

Scabies is transmitted in two ways, namely direct and indirect contact. Direct contact occurs when there is contact with the sufferer's skin, for example shaking hands, sleeping together and sexual intercourse. While indirect contact through objects that have been used by the sufferer such as clothes, towels, pillows, and others. Another thing that can facilitate distribution is the lack of clean water supply. [2.3]

Dermatophyte transmission occurs anthropophilic, zoophilic and geophilic. Anthropophilic is a direct person-to-person transmission, zoophilic through animal intermediaries, while geophilic is through water or land intermediaries. Transmission increases in poor hygiene, densely populated environments, and low socio-economic conditions. [4.5]

Pyoderma is transmitted by direct contact with the skin where there is colonization of commensal, transient or pathogenic bacteria. Bacterial colonization on the surface of the skin is also influenced by the level of personal hygiene. [6]

The level of knowledge about skin infections and personal hygiene is closely related to the incidence of skin infections.[1] Patients with infections, including scabies need a step-by-step explanation in using therapy, disconnecting contact persons, how to keep their environment clean and also including managing clothes, blankets, towels, floors, mattress, clothes holder. The risk of secondary infection after scabies infestation can cause serious complications, even lead to death.[7] Apart from treatment, disease prevention is seen as more effective in controlling the prevalence of scabies which is sporadic, endemic and epidemic in nature. Prevention of skin infections through education is a challenge to reduce the prevalence of the disease. [8]

LITERATURE REVIEW

Scabies

Scabies is a parasitic infestation of human skin caused by an infestation of the *Sarcoptes scabiei var hominis* mite into the epidermis.[8] The clinical manifestation of scabies is skin lesions accompanied by pruritus due to allergic reactions or inflammation of the host to mites or mite products.[2.10]

Sarcoptes scabiei is an arthropod belonging to the Arachnida class and the *Sarcoptidae* family.[2] Female mites form tunnels under the skin surface and lay a range of 1-3 eggs per day between the stratum corneum and granulosum.[8,11] A range of 1% of eggs develop into adult mites in 10 -15 days before migrating to the surface of the skin.[10,11] The average number of mites is around 10-15 for each host.[12] Mites are transmitted mainly through direct skin-to-skin contact.[2] Mites are also transmitted via contaminated objects.[12]

Epidemiological research shows that scabies is mostly found in adolescents, and in residents in dense and slum areas.[12,13] In Indonesia this disease is still a health problem, both in densely populated urban areas and in remote areas. The

development of this disease is influenced by low socioeconomic conditions, dense environments, low knowledge and misdiagnosis and management.[13] Transmission or transmission can take place mainly through close direct skin contact from one individual to another or through indirect contact, namely through tools and clothing. which is used.[10]

The clinical picture of scabies is pruritus with skin lesions at the predilection site. The clinical picture generally appears 4-6 weeks after primary infection, whereas reinfestation after the patient is declared cured can occur more quickly within 1-3 days.[8]

Scabies lesions can be found in the form of (1) papular or vesicular lesions and (2) diffuse erythematous and pruritic eruptions that are not associated with the presence of mites and are thought to be an immunological response. Tunnels, pathognomonic lesions of scabies, appear clinically as gray or brown serpiginous with a length range of 1-10 mm.[8] The predilection sites for scabies lesions include between the fingers, wrists, flexors of the arms, extensors of the elbows, armpits, periumbilical region, buttocks, ankles, genitalia and periareola in women.[10]

Diagnosis and presumptive therapy of scabies should be considered if a clinical picture of nocturnal pruritus is found with lesions in the predilection area. A history of contact with family members who suffer from scabies can increase the predictive value of a presumptive diagnosis of scabies.[2] A definite diagnosis of scabies is determined if *S. scabiei* mites, eggs or feces are found on microscopic examination, along with clinical symptoms of scabies.[12]

Patients are advised to maintain cleanliness and bathe regularly every day. All clothes, bed linen and towels that have been used must be washed regularly and if necessary soaked in hot water, as well as family members who are at high risk of infection, especially babies and children, must also be kept clean and temporarily prevent it from happening. direct contact. In general, improve environmental and personal hygiene and improve nutritional status. Several medical conditions that must be considered:[11]

1. All family members should be examined and all should be given treatment simultaneously.

2. Personal hygiene: sufferers must take a clean shower, if necessary, use a brush to brush the body. After bathing, the clothes to be worn must be ironed.
3. All household items such as benches, sofas, bed sheets, pillows, mattresses, blankets should be cleaned and dried in the sun for several hours.

Management of scabies is generally given topically, including Sulfur Presipitatum (4-20%), benzyl-benzoate emulsion (20-25%), gamexan (1%), crotamiton (10%) and permethrin (5%). For preventive efforts, it is necessary to educate patients about scabies, the course of the disease, transmission, how to eradicate scabies mites, maintain personal hygiene, and procedures for applying drugs. Itching sometimes persists even though the skin is clean. Treatment is carried out on householders and those around the patient who are closely related.[8]

Dermatophytosis

Dermatophyte infections can occur on the skin, hair and nails. Dermatophyte infections are commonly known as tinea, with names based on the location of infection such as tinea capitis, corporis, cruris, manus, pedis and tinea unguium.[4,14] Infection occurs due to infiltration and proliferation of dermatophytes in the stratum corneum and does not develop in living tissue. The clinical features of tinea on glabrous skin generally show well-defined lesions with an annular, arsinar, or polycyclic configuration.[14]

This disease is spread throughout the world and can affect all races and age groups so that this superficial fungal infection is relatively common in tropical countries and often occurs in exacerbations. In Asia the most common causes are *Tricophyton rubrum, Tricophyton mentagropytes* and *Tricophyton violaceum*[4]

Some of the factors that influence the onset of fungal diseases are climate, heat, humidity, excessive sweating, all-nylon clothing, hygiene, skin trauma, environment, socio-culture, and economy.[4,14] Tinea corporis is a common infection that is often seen in areas with a hot and humid climate. As with other fungal infections, warm and humid conditions help spread the infection.[14] Maceration and occlusion of skin folds causes an increase in skin temperature and moisture which

facilitates infection. Transmission can also occur through direct contact with infected individuals or indirectly through objects contaminated with fungi, for example towels, bathroom floors, hotel beds and others.[5]

Diagnosis of simple dermatophytosis can be made by examining keratin specimens using potassium hydroxide (KOH) solution. Positive results were obtained with fungal elements in the form of long septic hyphae and arthrospores. 5 Cultures, one of which was for Saboraud, were aimed at examining the identification of the causative fungal species, helping to determine the prognosis of the disease and for the purposes of epidemiological studies.[7]

The general management of dermatophytosis is improving body hygiene, wearing sweat absorbent clothing, and identifying sources of infection.[7] Specific management includes topical and systemic treatments. Topical treatment is recommended for a localized inflammation, a combination of 3-6% salicylic acid and 6-12% benzoic acid in the form of an ointment (*whitfield ointment*) can be given. Combination of salicylic acid with sulfur precipitate in the form of ointments (2-4 ointments, 3-10 ointments) and azole derivatives: 2% miconazole, and 1% clotrimasol. 5 Systemic treatment of widespread fungal infections, failure of topical therapy and immunosuppressive conditions including griseofulvin 500 mg daily for adults, and children 10-25 mg / kg BW daily. The duration of griseofulvin in tinea corporis is 3-4 weeks. In cases that are resistant to griseofulvin can be given azole derivatives such as itraconazole, and fluconazole. Antibiotics can also be given in case of secondary infection.[5]

Pioderma

Pyoderma is a skin infection, generally caused by *Staphylococcus aureus*, group A *Streptococcus β hemolyticus* or both.[6] Many factors influence the occurrence of pyoderma, including an imbalance of *host*, *agent,* and environmental factors.

The prevalence of pyoderma in Indonesia is 1.4% in adults and 0.2% in children. The morbidity rate of pyoderma is still quite high, data shows the number of patient visits to the Pediatric Dermatology Division polyclinic of the Department

of Dermatology and Venereology (IKKK), Faculty of Medicine, University of Indonesia / Dr. Cipto Mangunkusumo Hospital (FKUI / RSCM) during 2002 showed that there were 362 cases of pyoderma patients (18.53%) of 2190 new visits. This number ranks 2nd after atopic dermatitis.[15]

The most common manifestations of pyoderma are crustous / non-bullous and bullous impetigo, folliculitis and furuncles.[36] Impetigo often occurs in children, but can also occur in adulthood. The place of predilection is on the face, namely around the nostrils and mouth because it is considered the source of infection from that area and in the extremities after trauma. Bullous impetigo is caused by the bacteria *Staphylococcus aureus.*[15] Folliculitis occurs when the hair follicles become inflamed. The disorder is in the form of erythematous papules or pustules in which there are hairs, usually multiple.[6] Furuncles are inflammation of the hair follicle and surrounding tissues. Folliculitis and furuncles are caused by *Staphylococcus aureus.* Carbuncles are a collection of furuncles.[16]

The complications of pyoderma include the expansion of systemic infections and infections in the form of glomerulonephritis and septicemia.[17] In general, pyoderma management is to maintain personal and environmental hygiene, and prevent infection in other body locations. Special management with topical or systemic antibiotics. [17]

CONCLUSION

With efforts to improve hygiene through skin counseling and treatment, it is hoped that it can increase the level of quality and maintenance of skin health. Treatment efforts in the community are continued with counseling on personal hygiene, introduction of infectious skin diseases, and how to prevent infectious skin diseases are some of the efforts that can be made to reduce the number of infectious skin diseases in the community, including in groups with dense populations and boarding schools / boarding schools.

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