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Eczema Herpeticum

Eczema herpeticum (EH), also known as Kaposi varicelliform eruption, is a viral skin infection primarily caused by the herpes simplex virus. The condition is characterized by the sudden onset of painful, blistering lesions and is most commonly seen in individuals with atopic dermatitis (AD). EH is a serious complication of AD and can lead to widespread infection if not promptly treated. Although the condition is typically mild and self-limited in healthy individuals, it can be life-threatening in those with compromised immune systems.

Pathophysiology

Eczema herpeticum occurs when the herpes simplex virus (HSV), primarily HSV type 1 (HSV-1), infects areas of skin affected by atopic dermatitis. AD is a chronic inflammatory skin condition characterized by a compromised skin barrier, which results from mutations in the filaggrin gene. Filaggrin plays a crucial role in maintaining the skin's moisture barrier and protecting against environmental insults, including viral infections. In individuals with AD, the skin barrier is weakened, making them more susceptible to infections such as HSV-1. Although HSV-1 is the predominant cause of EH, the virus that causes genital herpes (HSV-2) can also occasionally lead to EH.

Clinical Presentation

Eczema herpeticum typically presents with sudden-onset, pruritic, painful lesions that are filled with clear fluid or pus. The blisters often break open, leading to erosions or ulcerations, which eventually crust over. These lesions are most commonly found in areas with active atopic dermatitis but can occasionally appear on unaffected skin. In children, the face and neck are common sites for lesion development, given the typical distribution of AD in this age group. In addition to skin lesions, patients may experience fever, regional lymphadenopathy (enlarged lymph nodes), and localized swelling. Secondary bacterial infections, particularly with *Staphylococcus aureus*, or viral co-infections such as molluscum contagiosum, may occur, complicating the clinical course of EH.

Risk Factors

Several factors increase the risk of developing EH. The most significant risk factor is atopic dermatitis, particularly in those with poorly controlled eczema. Other risk factors include exposure to hot tubs, which can increase the likelihood of viral infection, and the use of immunomodulatory topical treatments, such as tacrolimus and pimecrolimus, which suppress local immune responses. Additional conditions that predispose individuals to EH include Darier's disease, Hailey-Hailey disease, cutaneous T-cell lymphoma, severe seborrheic dermatitis, scabies,

Wiskott-Aldrich syndrome, allergic contact dermatitis, and burns. In rare cases, EH has been observed in patients with psoriasis undergoing immunosuppressive therapy.

Diagnosis

The diagnosis of eczema herpeticum is primarily clinical, based on the characteristic appearance of the lesions and the patient's medical history. However, definitive diagnosis requires confirmation of HSV infection. The gold standard for diagnosis is viral culture, which involves obtaining a sample from the lesion and incubating it to isolate the virus. Polymerase chain reaction testing is an alternative diagnostic method, offering the advantage of detecting HSV DNA directly from the skin lesions, which can yield results more rapidly than viral culture. It is important to note that the presence of bacterial cultures from the same lesion does not rule out a viral infection, as co-infections with both bacteria and viruses can occur simultaneously.

In cases where the lesions are near the eyes, an ophthalmologic evaluation is recommended. Herpes simplex virus can cause herpes simplex keratitis, a condition that can lead to scarring of the cornea and, if left untreated, potential vision loss.

Treatment

Treatment of EH typically involves antiviral therapy, which is essential for preventing the virus from spreading to other parts of the body. The choice of antiviral agent depends on the severity of the infection. In mild cases, oral antiviral medications, such as acyclovir or valacyclovir, are commonly prescribed. These medications are effective in reducing viral replication and alleviating symptoms. In more severe cases, particularly in immunocompromised individuals, intravenous acyclovir may be required to achieve higher drug concentrations and more rapid viral suppression. Early initiation of antiviral therapy is crucial to prevent the development of systemic infection or complications, such as sepsis or disseminated herpes infection.

In addition to antiviral treatment, supportive care includes managing the associated symptoms, such as pain and pruritus. Analgesics may be used to alleviate pain, while antihistamines can help control itching. To prevent secondary bacterial infections, proper wound care and the use of topical or systemic antibiotics may be necessary if there is evidence of bacterial superinfection.

Complications and Prognosis

EH is typically mild and self-limiting in individuals with normal immune function. However, in immunocompromised patients, such as those with HIV, leukemia, or those on immunosuppressive therapies, the virus can spread systemically, potentially causing life-threatening complications. If untreated, EH can lead to sepsis, organ failure, and even death. In addition, secondary bacterial infections, such as those caused by *Staphylococcus aureus*, can complicate the condition and increase the risk of systemic spread.

Even in healthy individuals, recurrent episodes of EH can occur throughout life. The condition may present with only a few vesicles in a localized area, which often goes undiagnosed. Early intervention with antiviral therapy can prevent complications and reduce the severity of flare-ups.

Conclusion

Eczema herpeticum is a severe, potentially life-threatening complication of atopic dermatitis that warrants immediate medical attention. Prompt diagnosis and treatment with antiviral medications are essential to prevent the spread of the virus and reduce the risk of severe complications. While the majority of cases are mild and self-limited, individuals with weakened immune systems are at a much higher risk for serious consequences, including systemic infection and death. By recognizing risk factors and symptoms early, clinicians can improve outcomes and minimize the impact of this debilitating condition.

References

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