

Herpes Zoster in the patient with Hypertensive Crisis: Case report and review of the literature

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Abstract

Herpes zoster (HZ) is a disease caused by reactivation of the varicella zoster virus (VZV) latent infection after infecting it in the form of varicella. The incidence of HZ increases with as people get older as it is associated with reduced specific immunity to VZV. A recent study showed that patients who had suffered HZ would have a greater risk of stroke and myocardial infarction than people who had never had HZ. In this article, present the report a case of HZ in 70-year-old male patient involving T10 and T11 dermatomes with hypertensive crisis.

Keywords

Herpes Zoster; varicella; Hypertensive Crisis; cardiovascular risk

Abbreviations

HZ: Herpes Zoster; VZV: Varicella Zoster Virus

Introduction

Herpes zoster (HZ) is a disease caused by varicella zoster virus (VZV) which attacks the skin and mucosae. Herpes zoster is a reactivation of varicella viruses that live in the dorsal ganglion and cranial nerves after primary infection. Herpes zoster often attacks the elderly and immunocompromised [1,2]. The emergence of HZ infection is not influenced by factors such as demographics, season, race, and occupation [3]. The incidence of HZ increases as people get older as this is associated with reduced specific immunity to VZV [4].

Prodromal HZ symptoms may be systemic and/or local symptoms. Systemic symptoms include fever, cephalgia or dizziness. Local symptoms are usually itching and pain or neuralgia in the affected dermatome. Other complaints are paresthesia: tingling, heat, pain, tenderness, hyperesthesia, and feeling pricked [5].

Patients who are suffering from herpes zoster will be at risk for cerebrovascular and cardiac

complications (such as hypertensive crisis, stroke, and myocardial infarction). A recent study showed that sufferers of HZ would have a greater risk of stroke and myocardial infarction too [6].

Hypertensive crisis is a marked elevation in systolic blood pressure greater than 180 or diastolic blood pressure greater than 110 [7]. Hypertensive crisis can be divided further into hypertensive emergencies or hypertensive urgencies according to the presence or absence of acute target organ damage [8]. In this case report, HZ presents in a 70-year-old male patient involving T10 and T11 dermatomes with a hypertensive crisis.

Case Report

A 70-year-old man arrived, accompanied by his family, with complaints of right abdominal pain that spreads to the back of his torso. Initially the patient only felt a burning and stabbing pain that appeared along the right abdomen, then vesicles appeared during the last 2 days and the pain became intense. The patient also complained of headache, nausea and vomiting.

On physical examination, the patient was moderately ill, awareness was *compos mentis*, blood pressure 200/100 mmHg, respiratory rate 24 times per minute, pulse 93 times per minute, and axillary temperature 36.8 degrees Celsius. In the right lumbar region there were a group of linearly-arranged, fluid-filled vesicles, lenticular size, with regional spread, and erythema around the lesions (Fig.1).

Based on the anamnesis and physical examination, the diagnosis of this patient was Herpes zoster (HZ) and Hypertensive urgency. The management of this patient was supportive therapy with intravenous fluids and the antiviral drug valacyclovir 3 x 1000 mg, cefixime 2x200 mg and ketorolac 3x30 mg IV for analgesia. Patient was treated in conjunction with a cardiologist, who prescribed telmisartan 1x80 mg. On the third day of treatment, based on the appearance of the HZ lesion, the patient was discharged home for outpatient care.

Discussion

Herpes zoster (HZ) is a disease caused by reactivation of the varicella zoster virus latent infection after infecting it in the form of varicella. The varicella zoster (VZV) virus then lives in a dormant state in sensory ganglia of the cranial nerves or in the dorsal ganglia. HZ is commonly found in adults with 3.9-11.8 per 1000 people over the age of 65 years [1].

HZ has a 1-5-day prodromal phase with symptoms such as fever, malaise, and pain. This is followed by the appearance of vesicles and bullae over an erythematous base in 3-5 days. HZ lesions appear unilateral and following the involved dermatome [2]. HZ lesions in this patient are found in T10 and T11 dermatomes around the right side of the abdomen and right trigonum lumbale region.

Management given to the patients is intravenous fluids as a supportive therapy to treat dehydration, antiviral therapy, antibiotic therapy, and symptomatic therapy. Antiviral therapy given in this case is valacyclovir to accelerate healing processes, antibiotic cefixime to prevent secondary infection, and an analgesic for

pain relief.

This patient was also diagnosed with hypertensive urgency because his blood pressure reached 200/100 mmHg. Hypertensive urgency is a marked elevation in systolic blood pressure greater than 180 or diastolic blood pressure greater than 110 without evidence of target organ damage [7]. To control the blood pressure of this patient, the cardiologist recommended an angiotensin II receptor blockers (ARBs), telmisartan, 80 mg once daily.

A recent study conducted by Kim MC et al, showed that patients with HZ were found to have an increased risk of a composite of cardiovascular events including heart attack and stroke by 41%, the risk of stroke by 35% and the risk of heart attack by 59% percent. There are several possible biological theories for the increased risk of stroke and MI after HZ: VZV replication adjacent to an artery, which leads to inflammation of the artery and subsequent thrombosis and rupture; repeated subclinical reactivation of VZV and a subsequent effect on the arteries; transaxonal migration of VZV in a centripetal direction; increased sympathetic tone, blood pressure, and adverse emotional reactions; and the altered immunological status caused by VZV reactivation and subsequent vulnerability to cerebrovascular events [9,10].

This patient was discharged on the 3rd day of treatment after significant clinical improvement; no new lesions appearing, and the old lesions mostly dried up (Fig.2).

Figures



Figure 1: Skin lesions of Herpes zoster on right lumbar region and involving the T10 and T11 dermatomes.



Figure 2: Skin lesions after three days of treatment.

Conclusion

In this case, herpes zoster may raise the risk of cerebrovascular and cardiovascular disease, although the magnitude of the effect is small, and the quality of evidence is limited. Because these patients have a high risk of cardiovascular disease, it is advisable to check their health regularly at the nearest health facility. Future studies are needed to identify optimal approaches for the treatment and surveillance of patients with herpes zoster to mitigate their possibly heightened risk of cerebrovascular and cardiovascular events.

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