



Herpes Zoster in Patient with Hypertensive Crisis: Case Report and Literature Review

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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. This article presents the report a case of HZ in a 70-year-old male patient involving T10-11 dermatomes with hypertensive crisis.

Keywords: Hypertensive crisis, herpes zoster, varicella

ABSTRAK

Herpes Zoster (HZ) merupakan penyakit yang disebabkan oleh reaktivasi infeksi laten virus *varicella-zoster* (VZV) setelah sebelumnya menginfeksi dalam bentuk *varicella*. Insidens HZ meningkat seiring bertambahnya usia berkaitan dengan berkurangnya imunitas spesifik terhadap VZV. Penelitian terbaru menunjukkan bahwa pasien yang pernah menderita HZ lebih berisiko terkena *stroke* dan infark miokardial. Artikel ini membahas kasus HZ yang melibatkan dermatom T10-11 disertai krisis hipertensi pada seorang laki-laki berusia 70 tahun. **Prayogi Kramy. Herpes Zoster pada Krisis Hipertensi: Laporan Kasus dan Tinjauan Pustaka**

Kata kunci: Herpes zoster, krisis hipertensi, varisela

INTRODUCTION

Herpes zoster (HZ) attacks the skin and mucosae; caused by a reactivation of varicella zoster virus (VZV) that lives in the dorsal ganglion and cranial nerves after primary infection. Herpes zoster often found in 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 dermatomes. Other complaints are paresthesia: tingling, heat, pain, tenderness, hyperesthesia, and feel pricked.⁵ 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 mmHg or diastolic blood pressure greater than 110 mmHg.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 came to the hospital, 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 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.

The patient was moderately ill, *compos mentis*, blood pressure 200/100 mmHg, respiratory rate 24/min, pulse 93/min, and

axillary temperature 36.8°C. 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 (Figure 1).



Figure 1. Skin lesions of Herpes Zoster in right lumbar region involving T10 dermatome.

Based on the anamnesis and physical examination, the diagnosis was herpes zoster (HZ) and hypertensive urgency. The management was supportive therapy with intravenous fluids and the antiviral drug valacyclovir 3 x 1000 mg, cefixime 2 x 200 mg, and ketorolac 3x30 mg IV for analgesia. Patient



was treated in conjunction with a cardiologist, who prescribed telmisartan 1 x 80 mg. On the third day, 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 varicella infection. The varicella zoster virus (VZV) then lives in a dormant state in sensory ganglia of the cranial nerves or 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 lumbal region.

Management is intravenous fluids as supportive therapy, antiviral, antibiotic, and symptomatic therapy. Antiviral valacyclovir is given to accelerate the healing process, 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 mmHg or diastolic blood pressure greater than 110 mmHg without evidence of target organ damage.⁷ An angiotensin II receptor blockers (ARBs), telmisartan, 80 mg once daily was recommended.

A recent study⁸ showed HZ patients 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: VZV replication adjacent to an artery 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 and the lesions were mostly dried (**Figure 2**).



Figure 2. Lesion after three days of treatment

CONCLUSION

Herpes zoster may raise cerebrovascular and cardiovascular disease risk, but the magnitude of the effect is small, and the quality of evidence is limited. Future studies are needed to identify optimal approaches for the treatment and surveillance of patients with herpes zoster to mitigate cerebrovascular and cardiovascular risk.

REFERENCES

1. Nair PA, Patel BC. Herpes zoster (Shingles) [Updated 2018 Oct 30]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2018. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK441824/>
2. Wareham DW, Breuer J. Herpes zoster. *BMJ*. 2007;334(7605):1211-5.
3. Marin M, Harpaz R, Zhang J, Wollan P, Bialek S, Yawn B. Risk factors for herpes zoster. *Open Forum Infectious Diseases* [Internet]. 2015 [cited 14 November 2018]; 2 (suppl_1). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4929487/>
4. Katakam BK, Kiran G, Kumar U. A prospective study of herpes zoster in children. *Indian J Dermatol*. 2016;61(5):534-9.
5. Erskine N, Tran H, Levin L, Ulbricht C, Fingerroth J, Kiefe C, et al. A systematic review and meta-analysis on herpes zoster and the risk of cardiac and cerebrovascular events. *PLOS ONE*. 2017;12(7):e0181565.
6. Alley W, II E. Hypertensive urgency [Internet]. 2018 [cited 18 November 2018]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK513351/>
7. Varounis C, Katsi V, Nihoyannopoulos P, Lekakis J, Tousoulis D. Cardiovascular hypertensive crisis: Recent evidence and review of the literature. *Front Cardiovasc Med*. 2017;3:51.
8. Kim M, Yun S, Lee H, Lee P, Lee S, Choi S, et al. Herpes zoster increases the risk of stroke and myocardial infarction. *Journal of the American College of Cardiology* [Internet]. 2017 [cited 14 November 2018];70(2):295-296. Available from: <http://www.onlinejacc.org/content/70/2/295>
9. Sundström K, Weibull CE, Söderberg-Löfdal K, Bergström T, Sparén P, Arnheim-Dahlström L. Incidence of herpes zoster and associated events including stroke--a population-based cohort study. *BMC Infect Dis*. 2015;15:488. <https://doi.org/10.1186/s12879-015-1170-y>