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ORIGINAL RESEARCH

A comparison of efficacy of valacyclovir and famciclovir in herpes zoster in the Eastern Indian population

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ABSTRACT

Background: Herpes zoster (HZ), or shingles, is a clinical syndrome resulting from the reactivation of latent varicella zoster virus (VZV) within the sensory ganglia, manifesting as a unilateral vesicular skin eruption involving one to three dermatomes. The present study was conducted to compare the efficacy of valacyclovir and famciclovir in treating herpes zoster in the Eastern Indian population.

Materials and Methods:The present study comprised of 84 patients who developed herpes Zoster of both genders. All of the patients that were enrolled gave their consent. The present study is conducted in the Departments of Pharmacology, Nalanda Medical College& Hospital (Patna, Bihar, India) in collaboration with Departments of medicine, Nalanda Medical College& Hospital (Patna, Bihar, India) after getting approval from the institutional ethics committee and obtaining permission for the study from the heads of the department. 84 patients who developed herpes zoster of both genders were divided into 2 groups of 42 patients each. Group I patients were prescribed valacyclovir 1000 mg thrice daily, and group II patients were prescribed famciclovir 500 mg thrice daily. Follow-up was done on days 4, 9, 16, 22, and 30.

Results: Group I had 22 males and 20 females, and Group II had 18 males and 24 females. The dermatomes in group I and group II involved were thoracic in 26 and 22, lumbar in 5 and 4, cervical in 6 and 10 and trigeminal in 5 and 6, respectively. The mean visual analogue scale score in group I and group II on day 0 was 6.7 and 6.2, on day 4 was 4.1 and 4.6, on day 9 was 2.3 and 2.6, on day 16 was 1.2 and 1.4, on day 22 was 0.64 and 1.1, and on day 30 was 0.21 and 0.83, respectively.

Conclusion: In comparison to famciclovir, oral valacyclovir administered for 7 days during acute zoster infection offers significant benefit by providing a well-tolerated and greater resolution of pain while maintaining a favourable safety profile, making valacyclovir more efficacious and a better drug in the management of Herpes Zoster.

Key words: Herpes zoster, famciclovir, valacyclovir

INTRODUCTION

Herpes zoster (HZ), often known as shingles, is a clinical syndrome caused by the reactivation of the latent varicella zoster virus (VZV) in the sensory ganglia that manifests as a unilateral vesicular skin eruption affecting one to three dermatomes. Approximately one out of every three people will experience an episode of shingles during their lifetime.[1] Immunosuppression and increasing age are well-established risk factors that can lead to latent virus reactivation. Pain is a common symptom that compels patients to seek medical advice. It frequently lasts even after the rash has healed, a consequence known as postherpetic

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neuralgia. This distinctive presentation of signs and symptoms is usually sufficient enough to reach a clinical diagnosis.[2]Among the antiviral agents, acyclovir is the most commonly used, but its prodrug, valacyclovir, has been observed to be better than acyclovir.[3] Valacyclovir is known to accelerate the resolution of acute pain associated with herpes zoster and also decrease the number of patients complaining of persistent pain.[4] Famciclovir is another antiviral agent that is a prodrug of penciclovir and has the advantage of a longer intracellular half-life and better bioavailability. Some studies claim famciclovir to be a better drug when compared to valacyclovir for the relief of pain.[5,6] The present study was conducted to compare the efficacy of valacyclovir and famciclovir in treating herpes zoster.

AIM AND OBJECTIVES

The present study was conducted to compare the efficacy of valacyclovir and famciclovir in herpes zoster in the Eastern Indian population and compare it with the various studies on the efficacy of valacyclovir and famciclovir in herpes zoster among various races in the world.

MATERIALS & METHODS

The present study is comprised of 84 patients who developed herpes zoster of both genders. All of the patients that were enrolled gave their consent. After receiving approval from the institutional ethical committee and permission from the heads of the departments, the present study has been carried out in the Departments of Pharmacology at Nalanda Medical College& Hospital (Patna, Bihar, India) in collaboration with the departments of Medicine at Nalanda Medical College & Hospital (Patna, Bihar, India).The study was carried out over a one-year period, from January 2021 to December 2021. Data such as name, age, gender, etc. was recorded. Allwere divided into 2 groups of 42 patients each. Group I patients were prescribed valacyclovir1000 mg thrice daily, and Group II patients were prescribed famciclovir 500 mg thrice daily.The treatment was given for 7 days. During the next 10 months of the trial, the same alternating medication method was usedduring the study period. One dose of 40 milligrams of methylprednisone was given oncedaily in the morning for one week following the presentation, followed by tapering over thenext 2 weeks, and was added to all the patients. For the first week, acetaminophen 500 mgTDS was also added. Follow-up was done on days 4, 9, 16, 22, and 30. The data thusobtained was subjected to statistical analysis. A P value of 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Drug	Valacyclovir 1000 mg	Famciclovir 500 mg
M:F	22:20	18:24

Table I shows that group I had 22 males and 20 females and group II had 18 males and 24 females.

Table II Dermatome distribution

Dermatome	Group I	Group II	P value
Thoracic	26	22	0.17
Lumbar	5	4	
Cervical	6	10	
Trigeminal	5	6	

Table II, graph I shows that dermatome in group I and group II involved were thoracic in 26 and 22, lumbar in 5 and 4, cervical in 6 and 10 and trigeminal in 5 and 6 respectively. The difference was non- significant (P> 0.05).

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Graph I Dermatome distribution

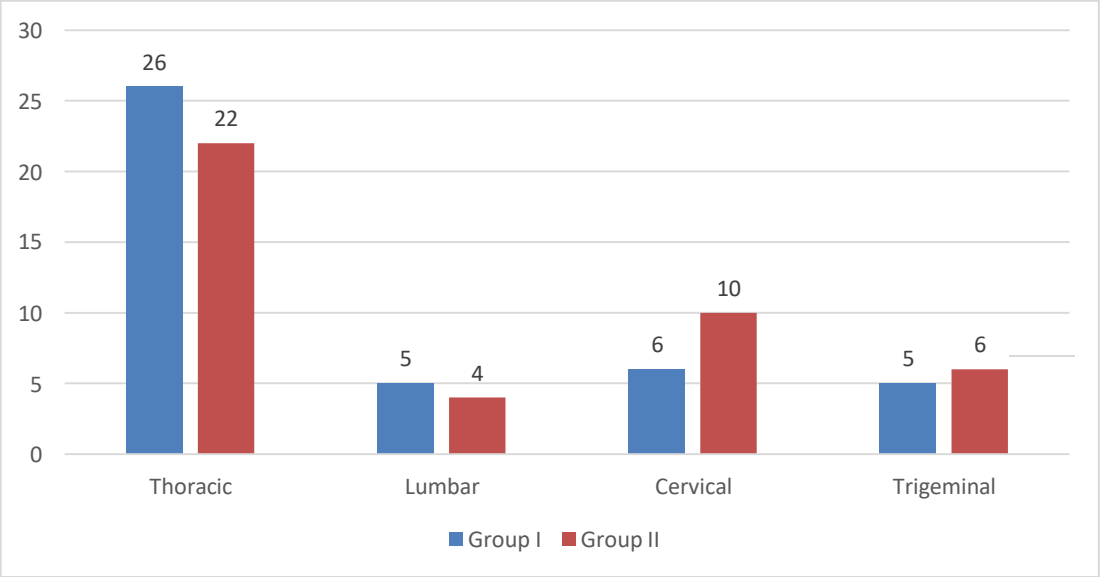

Table III Comparison of mean visual analoge scale scores

Day	Group I	Group II	P value
0	6.7	6.2	0.92
4	4.1	4.6	0.91
9	2.3	2.6	0.82
16	1.2	1.4	0.90
22	0.64	1.1	0.05
30	0.21	0.83	0.02

Table III shows that mean visual analog scale score on in group I and group II on day 0 was 6.7 and 6.2, on day 4 was 4.1 and 4.6, on day 9 was 2.3 and 2.6, on day 16 was 1.2 and 1.4, on day 22 was 0.64 and 1.1 and on day 30 was 0.21 and 0.83 respectively. The difference was non- significant (P> 0.05).

DISCUSSION

The virus spreads centrally and peripherally from the dorsal ganglia during viral reactivation, causing acute inflammation in the skin and damaging peripheral nerves and nerve roots; it ma y also reach the spinal cord.[7]The vesicular rash is often painful, and the pain can occur before the onset of the rash, or may occur without the development of a rash in rare cases of herpes sine herpete.[8]The management of uncomplicated HZ involves antiviral therapy to promote faster healing of the cutaneous lesions.[9] Analgesic treatment may also be given to patients with moderate-to-severe acute neuritis. Famciclovir, the oral prodrug of penciclovir, belongs to the same family of anti-herpetic agents as acyclovir and valaciclovir (the oral prodrug of acyclovir), but has different pharmacokinetic and antiviral properties.[10]Although penciclovir and acyclovir appear to have similar effects on VZV-infected cells, penciclovir triphosphate persists far longer than acyclovir triphosphate, resulting in more prolonged antiviral activity.[11] The purpose of this study was to compare the effectiveness of valacyclovir and famciclovir in the treatment of herpes zoster. We found that group I had 22 males and 20 females, and group II had 18 males and 24 females.[12] Investigated the safety and efficacy of famciclovir in patients with herpes zoster over a 7-day period to see if the two regimens are equally successful in treating individuals with uncomplicated herpes zoster. For seven days, patients were given either famciclovir 500 mg (one tablet) three times daily or acyclovir 800

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mg (two capsules) five times daily. The primary endpoint was defined as the time to full crusting of herpes zoster lesions. The proportion of patients who were completely cured and the change in sign/symptom score (pain, vesicular lesions, loss ofsensitivity, burning pain, and pruritus) according to the patient diary were secondaryendpoints. A total of 174 patients were enrolled and randomised, with 151 of themcompleting treatment (n = 75 for famciclovir and n = 76 for acyclovir). A similar percentage of patients who received acyclovir (94.74%) and famciclovir (94.67%) were completely cured. The mean time to full crusting of herpes zoster lesions was 15.033 days in theacyclovir group and 14.840 days in the famciclovir group (log-rank p-value = 0.820). Headache, diarrhoea, nausea, back pain, cold, and drowsiness were the most common side effects in the pooled groups, but none of them were deemed clinically significant. Weobserved that the dermatome in group I and group II involved were thoracic in 26 and 22, lumbar in 5 and 4, cervical in 6 and 10, and trigeminal in 5 and 6, respectively. Bist et al.[13] evaluated the efficacy of the antiviral agent valacyclovir compared with famciclovir in thetreatment of herpes zoster. 60 patients with active herpes zoster presenting to the outpatient department within 72 hours of the first occurrence of a zoster rash were divided into twogroups of 30 patients each. The first group of patients received valacyclovir tablets of 1000 mg thrice daily, whereas those in the second group were given famciclovir tablets of 500 mg thrice daily. Both medications were administered for seven days. The effects of theadministered medications were assessed on a regular basis till the 29th day. On day 29, when pain scores were compared between the two groups using the visual analogue scale, thevalacyclovir group scored significantly lower than the famciclovir group. Furthermore, when compared to famciclovir, valacyclovir treatment accelerated the cure of zoster-associated pain in a greater number of patients. Basickes V et al[14] found that in comparison to famciclovir, oral valacyclovir administered for 7 days during acute zoster infection offers significant benefit by providing a well tolerated and greater resolution of pain while maintaining a favourable safety profile, making valacyclovir more efficacious and a better drug in the management of Herpes Zoster.We found that the mean visual analogue scalescore in group I and group II on day 0 was 6.7 and 6.2, on day 4 was 4.1 and 4.6, on day 9was 2.3 and 2.6, on day 16 was 1.2 and 1.4, on day 22 was 0.64 and 1.1, and on day 30 was 0.21 and 0.83, respectively. The most common symptom of shingles is pain, which affects about 75% of patients in the form of altered sensitivity or pain circumscribed to the affected dermatome, where the rash will appear later. In the course of viral reactivation, acute hyperalgesia is usually the first symptom and occurs in approximately 70–80% of patients.[15]However, the type and degree of pain can change over time, and it can occur at all stages of the disease.

CONCLUSION

In comparison to famciclovir, oral valacyclovir administered for 7 days during acute zoster infection offers significant benefit by providing a well-tolerated and greater resolution of pain while maintaining a favourable safety profile, making valacyclovir more efficacious and a better drug in the management of Herpes Zoster. In the present study, we found that oral valacyclovir in acute zoster infection was found to be better as compared to famciclovir.

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