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Original Research Article

# A Comparative Study Assessing the Efficacy of Antiviral Agent Valacyclovir Compared with Famciclovir in the Treatment of Herpes Zoster

**Jaya Roy[1], Md. Zamiruddin[2], Rohit Kumar Singh[3]**

[1]Tutor, Department of Pharmacology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India

[2]Assistant Professor, Department of Pharmacology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India

[3]Associate Professor and HOD, Department of Pharmacology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India

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**Corresponding Author: Dr. Jaya Roy**
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**Abstract:**

**Aim:** The objective was to evaluate the efficacy of antiviral agent valacyclovir compared with famciclovir in the treatment of herpes zoster.

**Methods:** The present study was comprised of 200 patients who developed herpes zoster of both genders. All of the patients that were enrolled gave their consent.The study was carried out at hospital over a 2-year period. Data such as name, age, gender, etc. was recorded. All were divided into 2 groups of 50 patients each. Group I patients were prescribed valacyclovir 1000 mg thrice daily, and Group II patients were prescribed famciclovir 500 mg thrice daily. The treatment was given for 7 days.

**Results:** Group I had 56 males and 44 females and group II had 48 males and 52 females. Dermatome in group I and group II involved were thoracic in 60 and 52, lumbar in 12 and 12, cervical in 16 and 20 and trigeminal in 12 and 16 respectively. The difference was non- significant (P> 0.05). The VAS scores comparison at every follow-up visit between both the groups. The mean VAS scores on the day of presentation, i.e., the baseline scores in both the groups were almost similar, and the difference was not statistically significant. Results showed a greater number of totally pain-free patients at day 30, i. e., 82 (82%) patients in the valacyclovir group, while in the famciclovir group, 62 (62%) patients were reported to be totally pain free, although it was statistically insignificant (P > 0.05).

**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.

**Keywords:** Famciclovir, herpes zoster, valacyclovir



## Introduction

Herpes zoster a localized disease has been known since ancient times and is often referred by different names such as varicella zoster and shingles. It is typically characterized by unilateral radicular pain along with grouped vesicular eruptions. [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 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 pharmacotherapy for its management comprises antiviral agents, analgesics, and corticosteroids. The ideal time to start the treatment is within 3 days from when the rash first appears. Opioids and tricyclic antidepressants are often used for the treatment of significant persisting pain. Among the antiviral agents, acyclovir is the most commonly used agent, but its prodrug valacyclovir has been observed to be better than acyclovir. [6] Valacyclovir is known to accelerate the resolution of acute pain associated with herpes zoster and also decreases the number of patients complaining of persistent pain. [6] Famciclovir is another antiviral agent, which is a prodrug of penciclovir available with the advantage of a longer intracellular half-live and a better bioavailability. Some studies claim famciclovir to be a better drug when compared to valacyclovir for relief of pain, [7] while others state valacyclovir to be a better drug when compared to famciclovir. [8]

The objective was to evaluate the efficacy of antiviral agent valacyclovir compared with famciclovir in the treatment of herpes zoster.

**Materials and Methods**

The present study was comprised of 200 patients who developed herpes zoster of both genders. All of the patients that were enrolled gave their consent. The study was carried out at hospital, Anugrah Narayan Magadh Medical College and Hospital, Gaya Bihar, India over a 2 year period. Data such as name, age, gender, etc. was recorded. All were divided into 2 groups of 50 patients each. Group I patients were prescribed valacyclovir 1000 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 used during the study period. One dose of 40 milligrams of methylprednisone was given once daily in the morning for one week following the presentation, followed by tapering over the next 2 weeks, and was added to all the patients. For the first week, acetaminophen 500 mg TDS was also added. Follow-up was done on days 4, 9, 16, 22, and 30. The data thus obtained was subjected to statistical analysis. A P value of 0.05 was considered significant.

**Results**

**Table 1: Distribution of patients**

| Groups | Group I | Group II |
|---|---|---|
| Drug | Valacyclovir 1000 mg | Famciclovir 500 mg |
| M:F | 56/44 | 48/52 |

Group I had 56 males and 44 females and group II had 48 males and 52 females.

**Table 2: Dermatome distribution**

| Dermatome | Group I | Group II | P value |
|---|---|---|---|
| Thoracic | 60 | 52 | 0.20 |
| Lumbar | 12 | 12 | |
| Cervical | 16 | 20 | |
| Trigeminal | 12 | 16 | |

Dermatome in group I and group II involved were thoracic in 60 and 52, lumbar in 12 and 12, cervical in 16 and 20 and trigeminal in 12 and 16 respectively. The difference was non- significant (P> 0.05).

**Table 3: Mean visual analog scale scores comparison at every follow-up visit between both the study groups**

| Days | Mean±SD | | P |
|---|---|---|---|
| | Valacyclovir | Famciclovir | |
| 0 | 6.53±1.51 | 6.27±1.67 | 0.5290 |
| 4 | 4.13±0.99 | 4.33±1.29 | 0.5030 |
| 9 | 2.0±1.36 | 2.33±1.59 | 0.3910 |
| 16 | 1.07±1.28 | 1.33±1.50 | 0.4730 |
| 22 | 0.60±0.83 | 1.2±1.42 | 0.0500 |
| 30 | 0.2±0.41 | 0.87±1.19 | 0.0050 |

The VAS scores comparison at every follow-up visit between both the groups. The mean VAS scores on the day of presentation, i.e., the baseline scores in both the groups were almost similar, and the difference was not statistically significant.

**Table 4: Comparing the number of patients free of zoster pain in both the study groups at each follow-up**

| Days | Mean±SD | | P |
|---|---|---|---|
| | Valacyclovir | Famciclovir | |
| 4 | 0 | 0 | - |
| 9 | 22 (22) | 22 (22) | 1.000 |
| 16 | 52 (52) | 48 (48) | 0.7963 |
| 22 | 62 (62) | 58 (58) | 0.7945 |
| 30 | 82 (82) | 62 (62) | 0.1590 |

Results showed a greater number of totally pain-free patients at day 30, i. e., 82 (82%) patients in the valacyclovir group, while in the famciclovir group, 62 (62%) patients were reported to be totally pain free, although it was statistically insignificant (P > 0.05).

**Discussion**

Viral herpes zoster (HZ) is characterised by a unilateral dermatome rash and pain due to the reactivation and amplification of endogenous varicella zoster virus (VZV) dormant in sensory ganglia due to basic varicella infection (VZI). [9,10] Varicella zoster virus reactivation is the cause of herpes zoster, also known as shingles. People over the age of 50 are more likely to acquire herpes zoster because of immunosenescence, although it can affect anyone, especially those with a reduced cell-mediated immunity owing to any condition or medication. [11] Herpes zoster has been linked to complications involving the cerebral, splanchnic, motor nerves and ophthalmic. However, post-herpetic neuralgia is the most frequent complication. [12,13] Ophthalmic zoster infection can cause permanent damage to the eyes, including blindness. Approximately 4 to 6 cases per 1000 individuals of general population have been observed every year. [14]

Group I had 56 males and 44 females and group II had 48 males and 52 females. Dermatome in group I and group II involved were thoracic in 60 and 52, lumbar in 12 and 12, cervical in 16 and 20 and trigeminal in 12 and 16 respectively. The difference was non- significant (P> 0.05). Valacyclovir is a prodrug of acyclovir. [15] Famciclovir is also a prodrug with an active metabolite penciclovir. They both inhibit viral DNA polymerase enzyme, thus preventing the viral replication. [16] When given within 3 days of the appearance of the first lesion, both the drugs provide a reduction in duration not only loss of acute pain but also of full crusting and healing of the zoster associated lesions. [17] Both valacyclovir and famciclovir were well tolerated. No serious adverse effects were observed in either of the study groups to warrant withdrawal of any patient. A male preponderance was observed as in other studies conducted previously. [18] On observing the dermatome distribution, both the groups showed thoracic dermatomes to be the most commonly involved dermatome segments.

The mean time to full crusting of herpes zoster lesions was 15.033 days in the acyclovir 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 Dermatome in group I and group II involved were thoracic in 60 and 52, lumbar in 12 and 12, cervical in 16 and 20 and trigeminal in 12 and 16 respectively. The difference was non- significant (P> 0.05). Bist et al [19] evaluated the efficacy of the antiviral agent valacyclovir compared with famciclovir in the treatment of herpes zoster. 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 the administered 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, the valacyclovir 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 [18] 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. Results showed a greater number of totally pain-free patients at day 30, i. e., 82 (82%) patients in the valacyclovir group, while in the famciclovir group, 62 (62%) patients were reported to be totally pain free, although it was statistically insignificant (P > 0.05). 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. [20] 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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