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Brivudin

A Viewpoint by Gerd Gross

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Brivudin, a potent oral antiviral agent with a high and selective activity against varicella-zoster virus (VZV), is effective in the early treatment of acute herpes zoster in immunocompetent adults. It has a markedly higher anti-VZV potency than other oral antiviral agents approved for the systemic treatment of acute herpes zoster (e.g. acyclovir, valaciclovir, famciclovir [diacetyl penciclovir]). In clinical VZV strains, the 50% inhibitory concentration for brivudin was approximately 280- and 1100-fold lower than that for acyclovir and penciclovir. Activated brivudin triphosphate has a plasma elimination half-life of 10 hours in virus-infected cells, similar to that of the activated form of penciclovir (9.1 hours) and considerably longer than that of acyclovir (2–3 hours).

A major advantage of brivudin is its simpler once-daily treatment regimen compared with the regimens of valaciclovir and famciclovir (administered three times daily) or the five-times-daily regimen of acyclovir. This advantage is due to the long plasma elimination half-life of brivudin, together with its outstanding anti-VZV potency.

Brivudin was as effective as famciclovir or acyclovir in shortening the healing process and alleviating acute zoster-related pain in clinical trials in immunocompetent patients aged ≥50 years. In terms of preventing the development of post-herpetic neuralgia (PHN), a condition that is very difficult to treat, brivudin was as effective as famciclovir and more effective than acyclovir.

Brivudin is well tolerated, with a similar tolerability profile to famciclovir and acyclovir, and when taken according to the recommended schedule, it has no carcinogenic risk. In contrast to acyclovir, dosage adjustment is not required in patients with moderate or severe renal failure or with liver failure. This is of special advantage in patients older than 50 years of age, who are increasingly affected by herpes zoster and also by associated complications and sequelae such as PHN. Importantly, as with other thymidine analogues, brivudin must not be coadministered with or administered within 4 weeks of 5-fluorouracil (5-FU) or other fluoropyrimidine derivatives (e.g. tegafur, capecitabine, flucytosine), because of the potentially fatal accumulation of these drugs.

Brivudin is available in Germany and has been licensed in several European countries. The recommended dosage for immunocompetent adults with acute herpes zoster is a single 7-day treatment cycle of brivudin 125mg once daily. Treatment should commence within 48–72 hours of the rash appearing. Brivudin is contraindicated in immunosuppressed patients and in patients receiving 5-FU or other fluoropyrimidine derivatives.

The once-daily administration of brivudin clearly offers a practical advantage in the use of systemic antiviral treatment of immunocompetent adult patients with acute herpes zoster. Although pharmacokinetic data in healthy volunteers and patients with herpes zoster are not available, oral brivudin 125mg has been recommended in the guideline on herpes zoster of the German Dermatology Society as a substitute therapy for oral acyclovir and as an alternative therapy to oral valaciclovir and famciclovir.[1,2] Brivudin is regarded as a helpful complement to the systemic antiviral armamentarium against acute herpes zoster. ▲

References

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2. Gross G, Doerr HW. Herpes zoster guidelines of the German Dermatological Society [letter]. J Clin Virol 2003 Aug; 27 (3): 308-9