

Herpes Zoster and Diabetes Mellitus: What is their relation?

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Herpes Zoster occurs after a previous infection with the varicella zoster virus reactivates."Herpes viruses, eight in number, very commonly infect humans. Any of them can cause lifelong latent infections after an initial, usually mild or asymptomatic primary infection. Among them is herpes zoster, which occurs after reactivation of a previous infection with the varicella zoster virus (VZV) (1).

About 30% of people develop Herpes Zoster during their lifetime (1,3).

After the initial infection, the virus settles in the sensory ganglia, remaining dormant. Under certain conditions, it "wakes up" and causes symptoms, mainly a burning sensation, itching and the characteristic blistering rash, which subsides after a crust forms. Despite its name, herpes zoster does not only appear in the waist area, but the strip of blisters appears and "wraps" around the chest, head, neck, eye, etc. It is often accompanied by general malaise, feeling of fatigue, headache, stomach upset, fever and chills (1).

In addition to these symptoms, herpes zoster can cause postherpetic neuralgia, which is the most painful and debilitating complication for the patient, manifesting even years after the rash has subsided and can also persist for years, significantly degrading the patient's quality of life (1).

Other possible complications include the appearance of balance and hearing problems, facial paralysis, local bacterial infection and meningoencephalitis (1). People with diabetes who get herpes zoster are more likely to develop serious complications than those who do not have diabetes (2,6,7). These individuals face a higher risk of hospitalization, not just once but multiple times. In addition to the significant rate of hospital admissions, they also identified the risk factors for such a development. They found that advanced age (over 65 years), obesity (BMI of 30 or higher), and uncontrolled diabetes increased the risk of readmission by 40% and the risk of serious complications after infection with the herpes zoster virus by 25% (7).

People whose immune systems are weak are more likely to experience some of these complications. Studies have shown that diabetes mellitus is often accompanied by reduced immunity, which can potentially increase the risk for infectious diseases, including Herpes Zoster (4). People with type 1 and 2 diabetes are more vulnerable to infection, have more severe symptoms, and have other pathological manifestations that worsen the condition (4). The incidence of herpes zoster, the severity of complications, and the likelihood of hospitalization and mortality after infection increase with age (3,6,7).

A retrospective study showed that patients with herpes zoster who require hospitalization are at risk of developing cardiovascular complications (to

which diabetics are more prone anyway) and that people newly diagnosed with cardiovascular problems are also at risk of developing shingles with severe symptoms (4). Herpes zoster and diabetes are associated with an increased risk due to the effect of diabetes on the immune system.

Herpes Zoster vaccination is particularly recommended for people with diabetes, as it can reduce the risk and complications of the infection (5). We know that diabetes, as a chronic condition, can weaken the immune system. So a weakened immune system increases the risk of the VZV virus becoming active, which remains dormant in the body.

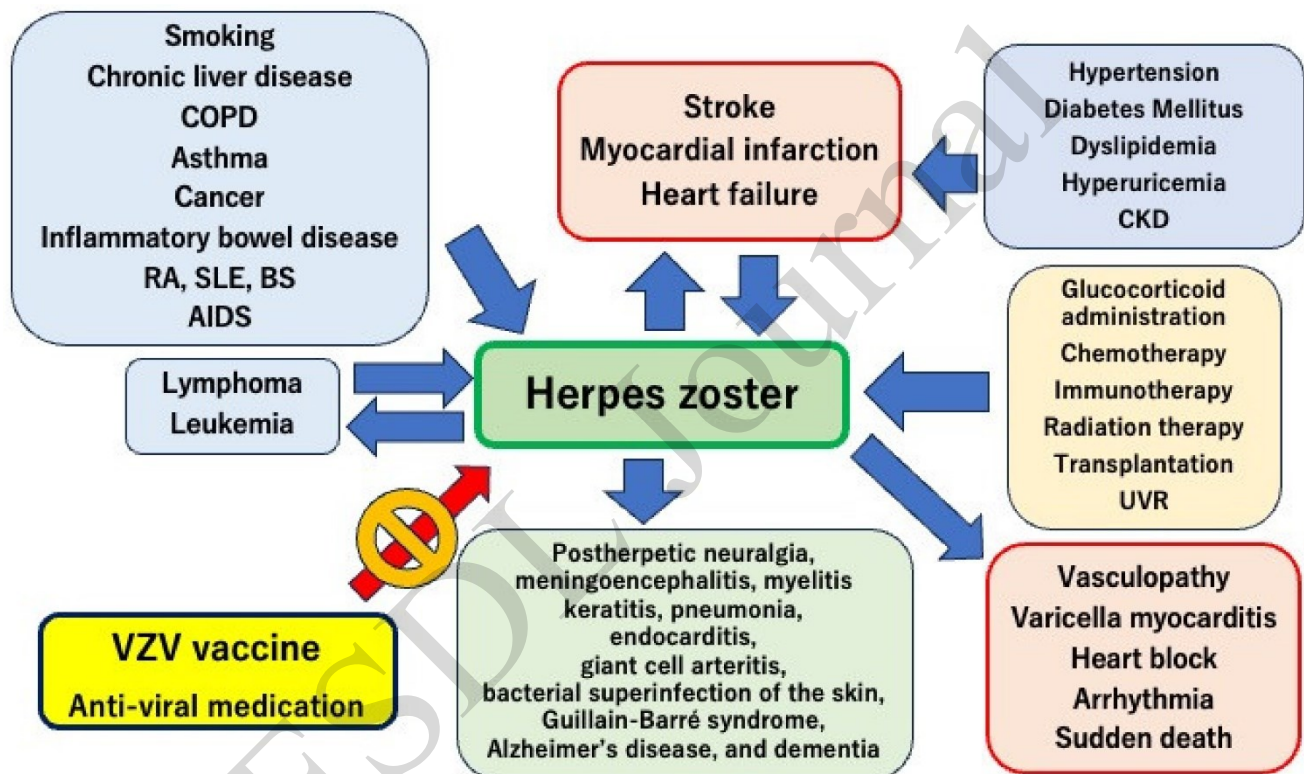


Figure (1): Relationship between cardiovascular disease and herpes zoster.

In addition, the chronic inflammation associated with diabetes can increase the likelihood of developing Herpes Zoster (4).

That is the reason that people with diabetes are at higher risk of developing shingles and its complications, such as postherpetic neuralgia (chronic pain) (1,3).

Vaccination is recommended to prevent infection and possible complications. can also reduce as well as the severity of symptoms (5).

But it's not just herpes zoster that causes problems. According to research published in Diabetologia, those infected with cytomegalovirus (CMV), another of the 8 herpes viruses, had a 30% increased risk of developing hyperglycemia or diabetes. Another, of many that have been conducted, found that HSV-2 may contribute to impaired glucose metabolism and an increased risk of prediabetes and type 2 diabetes (4).

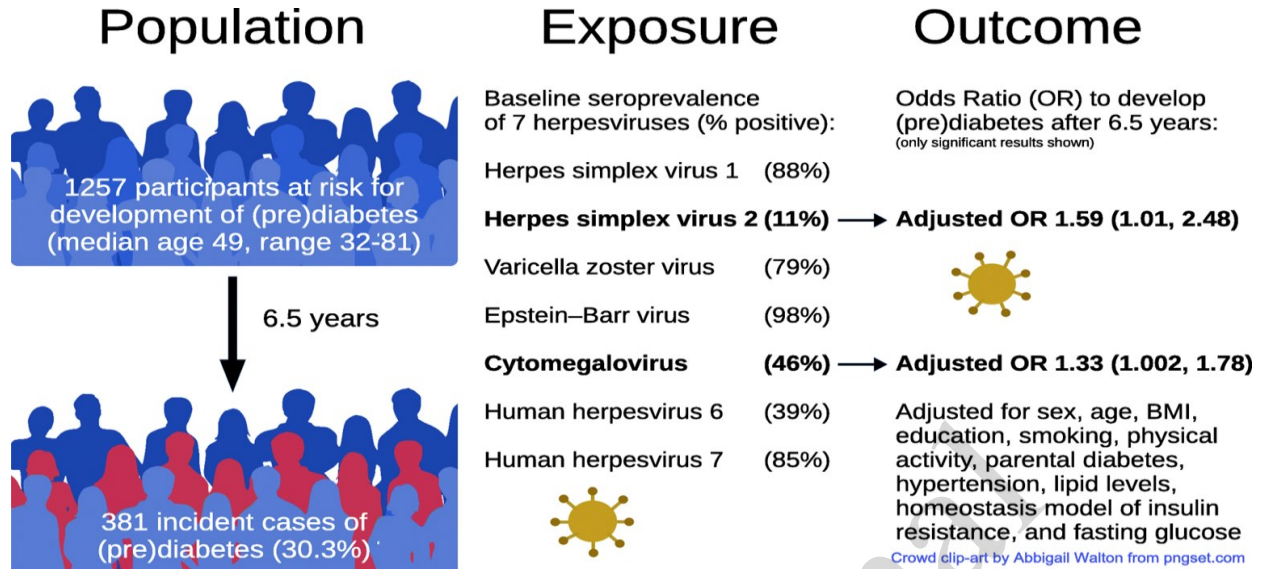


Figure (2): Association between herpesvirus seroprevalence and the risk of developing (pre)diabetes

The mechanisms by which these viruses might contribute to the development of (pre)diabetes are not clear. Both cause chronic infections that affect the immune system. Both HSV2 and CMV cause chronic infections that could modulate the immune system by stimulating or suppressing its activity, which in turn can influence the function of the endocrine (hormonal) system (4). Previous research has established that there are as-yet unknown causes of T2D besides those involving the development of metabolic syndrome.

The authors conclude: “These results highlight the link between viruses and (pre)diabetes, and the need for more research evaluating public health viral prevention strategies, possibly including the development of effective vaccines against herpesviruses” (4).

The recombinant herpes vaccine (RZV) is now available. This vaccine is approved for immunocompetent individuals aged 50 years and older and for immunocompromised individuals aged 18 years and older (5).

According to the Hellenic Society of Infectious Diseases, the effectiveness of the former reaches 70% in individuals aged 50-59 years. However, it decreases with age, reaching 38% in those aged over 70. Its effectiveness is also excellent 10 years after vaccination, reaching 89% (5).

According to global data, these vaccines are safe and effective and are contraindicated only in pregnant women, in patients with primary or acquired immunodeficiency and in people with a history of anaphylactic reaction to vaccine components. It is not recommended for people aged 50-59 years (5).

However, there are factors that should be taken into account, such as severe depression, comorbidities, pre-existing chronic pain, or difficulty tolerating therapeutic medications due to hypersensitivity or interactions with other medications taken chronically (5). The data indicate the need for more studies to clarify the effectiveness of the RZV vaccine in patients with diabetes, although vaccination is currently recommended for patients with diabetes aged 50 years or older (5).

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