



COMMENT ON SHIH ET AL.

# Increased Incidence of Pediatric Type 1 Diabetes With Novel Association With Coxsackievirus A Species in Young Children but Declined Incidence in Adolescents in Taiwan. *Diabetes Care* 2021;44:1579–1585

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We applaud Shih et al. (1) for using enterovirus (EV) infection as a time-dependent covariate and time to type 1 diabetes (T1D) onset as the outcome to examine the relationship between EV infection and the incidence of T1D. The authors excellently obtained isolation numbers for the top five EV serotypes from a nationwide laboratory surveillance system of the Taiwan Centers for Disease Control (Taiwan CDC) to correlate the Taiwan T1D incidence with different species of EV infection. However, we have some concerns regarding using the decreasing trend of EV infection to explain the decreasing trend of T1D incidence in Taiwanese adolescents.

First, the yearly positive isolation numbers of EV serotypes from 2001 to 2015 (1,631, 1,395, 1,690, 1,640, 1,924, 1,303, 1,739, 2,475, 1,431, 1,742, 3,315, 2,250, 1,463, 1,147, and 1,036) from the nationwide laboratory surveillance system of the Taiwan CDC show no decreasing trend (2).

Second, the ICD-9-CM codes used to identify the comorbid EV infection 1 year before the development of T1D in the report of the *Taiwan Diabetes Atlas* (3) revealed that the number of EV infections from 2000 to 2007 and 2008 to 2016 was 27 (0.7%) and 55 (1.4%), respectively, with a significantly increasing trend ( $P = 0.0012$ ). These two results seem to be inconsistent with the speculation from Shih et al. that the decreasing trend of adolescent T1D incidence in Taiwan is due to the decreasing numbers of EV infection from 2001 to 2015 in Taiwan.

Third, this study showed that children aged 7–19 years with EV infection had no significant association with the risk of T1D (see Fig. 2 in Shih et al. [1]). Therefore, it may not be suitable to correlate the trend of EV infection with the trend of adolescent T1D incidence in Taiwan.

In brief, the trend of EV infection does not seem to be decreasing in Taiwan

from 2001 to 2015. Thus, the use of a suspected decreasing trend of EV infection may not suitably correlate with the decreasing trend of adolescent T1D incidence in Taiwan.

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