RESPONSE TO COMMENT ON LIU ET AL.

Chang Liu and Jin-Kui Yang

Incidence of Type 1 Diabetes May Be Underestimated in the Chinese Population: Evidence From 21.7 Million People Between 2007 and 2017. Diabetes Care 2021;44:2503–2509

We thank Weng et al. (1) for their interest in our article regarding the incidence of type 1 diabetes (T1D) in the Chinese population (2). Such epidemiologic data are important from clinical practice and policy perspectives, while comprehensive population-based estimates of T1D incidence rates and trends are still limited in China (3–5).

First, we confirmed that the T1D incidence in the Chinese population remains low but may have been underestimated in previous reports. As we mentioned in the DISCUSSION, a possible reason for this difference is that previous estimates might be based on T1D patients from a smaller number of medical centers and used the whole population in an area for comparison. For instance, although there are 153 centers qualified to diagnose T1D in Beijing, previous estimates were based on fewer hospitals or centers in Beijing and calculated the incidence using the whole population (such as 19.6 million in 2010) as the denominator (4,5). The greater Beijing area is a metropolis with permanent residents from both northern China and southern China, indicating that the collection of ethnic groups within Beijing is a good representation of the ethnic diversity of China. To our knowledge, a suitable high-coverage population for T1D incidence is not yet available for the whole of China. We were trying to perform higher-coverage research in Chinese populations that may reflect the reality in the greater Beijing area, not wide-reaching research with less coverage in many areas in China.

Second, capturing new-onset cases is one of the main challenges that researchers encountered (4). In this registry study, although we only captured the new cases, doctors or experts needed around 1–2 years to reach the T1D diagnosis (more than 1 year of application of insulin, with no other antidiabetic drugs use before and 1 year after the diagnosis), which may lead to some bias in data interpretation at around 1–2 years. This limitation was deeply discussed in the DISCUSSION of our article (2).

Third, as mentioned by Weng et al., the diagnosis of T1D requires specialist doctors. In our study, only qualified hospitals with endocrinology specialists can diagnose T1D. The names and the number of qualified hospitals with specialists were provided in the supplementary materials of our article (Supplementary Tables 1 and 2). This registration study requires the doctor to diagnose the disease according to the guidelines for the diagnosis and treatment of T1D in China (which include the autoantibodies and duration of insulin dependence), although the government's annual supervision and inspection is generic for doctors' clinical practices.

Finally, in 1992, ICD-10 was introduced by the World Health Organization as a potential enhancement to ICD-9. The Chinese Ministry of Health required hospitals to adopt ICD-10 beginning 1 January 2002 (https://www.cnki.com.cn/Article/CJFDTotal-ZGBN200003002.htm).

Thank you again for your interest in our work. We understand that the critics are enthusiastic contributors to science research.

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