COMMENT ON WEBER ET AL.

Type 1 Diabetes Is Associated With an Increased Risk of Fracture Across the Life Span: A Population-Based Cohort Study Using The Health Improvement Network (THIN). Diabetes Care 2015;38:1913–1920

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Weber et al. (1) analyzed population-based data from The Health Improvement Network (THIN) in the U.K., and they showed increased risk for incident fracture across the life span in type 1 diabetes. Most of the previous studies and meta-analyses, including ours (2), showed a higher risk for fractures in people with type 1 diabetes. However, Weber et al. showed, for the first time, higher fracture incidence even in children and adolescents with type 1 diabetes compared with the age- and sex-matched general population.

Studies have shown that fractures are more common in both the youth and the elderly. Fractures in children and adolescents involve mainly the distal forearm, fingers, toes, and face and are explained by children's activity patterns over time and are not due to bone fragility (3). Weber et al. (1) also reported that the incidence of fracture was greatest in the age 10–20 years' bracket. This may be due to the inclusion of fracture sites such as the face, wrist, foot, rib, and thorax in their study. It is possible that most of these fractures may not be due to the effects of hyperglycemia or diabetes on bone but due to just chance.

Another interesting finding of the study is that participants with retinopathy and neuropathy had higher fracture incidence of the lower extremities. Studies have suggested that falls contribute to the majority of hip and lower-extremity fractures (4,5). Microvascular complications such as retinopathy and/or neuropathy in people with long-standing type 1 diabetes put them at high risk for falls. A study in type 2 diabetes showed that hypoglycemia also increases the risk for fractures (5). Therefore, it is likely that hypoglycemia and falls might have contributed to the increased fracture incidence in this population with type 1 diabetes.

The findings of the previous studies and the study by Weber et al. (1) warrant further research to elucidate the mechanisms for higher bone fragility in people with type 1 diabetes. In addition, research outlining the contribution of hypoglycemia and falls to fractures is also much needed.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

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