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Letter to editor in response to article published by Leanza et al.

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To Editor,

In a cross-sectional study of 600 participants with type 1 diabetes (T1D), Leanza and colleagues, have reported increased risk for fractures with longer duration of disease [1]. T1D for > 26 years were associated with 10 fold increase in fracture risk in those who reported 2 or more fractures compared to participants with T1D and had < 14 years of diabetes [1].

Fracture risk in people with T1D is three fold higher than people without diabetes and higher fracture risk is not explained based on areal bone density (aBMD) alone [2,3]. T1D is common in both children and adults and it is believed that early onset of disease during the bone accrual (before the age 20) may have negative impact on bone quality and thus, increased risk for fracture in later life. Therefore, age of onset of T1D may be one of the risk factors for fracture which has been overlooked in many studies. In a large US T1D national registry, 48% of 756 adult participants reported at least one fracture since T1D diagnosis and participants who had diabetes diagnosis before the age 20 reported higher frequency of fractures compared to participants with adult onset T1D (79% vs 71%, $p < 0.01$) [4]. Similarly, we recently showed that younger age of type 1 diabetes is associated with reduced total and trabecular volumetric BMD at the distal radius and reduced cortical thickness at the tibial shaft [5]. Considering evidences from recent studies, I believe that the association between duration of diabetes and fracture risk in the study by Leanza et al. is confounded by the age of onset of diabetes in their cohort and therefore, analyzing the cohort by age of T1D onset would provide better understanding on fracture risk in their study.

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