Correspondence

Insulin resistance & vitamin-D levels in prediabetics

Sir,

We read with interest the article by Dutta et al\(^1\) on influence of vitamin-D levels on insulin resistance in individuals with prediabetes published recently. The authors showed that vitamin-D deficiency/insufficiency was common among individuals with prediabetes and associated with worsened insulin resistance in these individuals. However, these are some points which need to be discussed.

Blood glucose levels were measured by a point-of-care testing (POCT) device and individuals with fasting blood glucose levels between 100-125 mg/dl or post-prandial / random blood glucose between 140-199 mg/dl were invited for 75 g oral glucose tolerance test (OGTT). The individuals were then classified as prediabetics, diabetics and normal controls. The authors have not mentioned the assessment method used for OGTT, because the use of POCT device is not acceptable for OGTT\(^2\). It is very important to clarify this step because selection of study groups have been made relying on this measurement method.

Among study groups, normal individuals were significantly younger than individuals with prediabetes and diabetes. It is known that insulin resistance increases with age\(^3\). In this case, it would be erroneous to say that vitamin D deficiency caused insulin resistance.

The authors have shown that quantitative insulin sensitivity check index (QUICKI) correlates well with glucose clamp studies which is accepted as a gold standard method to show insulin sensitivity\(^4\). It is reasonable to calculate QUICKI in this study, but they have reported that “values range between 0.45 for healthy individuals and 0.30 in diabetics”\(^5\). In some studies, the individuals were defined as insulin resistant when QUICKI was ≤0.33\(^5,6\). This value seems to be concordant with the findings of their study. Authors should have specified this to avoid confusion.

It was interesting to note that vitamin D mean levels were higher in individuals with diabetes than in those with prediabetes and in normal individuals. This could indicate a vitamin insufficiency/deficiency in local Indian population in general. Also vitamin sufficiency rate (≥31 ng/ml) was lower in normal controls than in prediabetics and diabetics. If more number of participants would have attended the study as normal control, different results could have been obtained.

In conclusion, though this study contributes valuable informations to literature, the explanation of these concerns will certainly provide a clear picture.

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