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Response

To the Editor:

We thank Dr Ehrenkranz for his interest in our paper. However, we reject his hypothesis that the significant drop in hemoglobin A_{1c} (HbA_{1c}) seen in our study [1] was due to red blood cell (RBC) toxicity. Perhaps, the most compelling argument against his hypothesis is the absence of a significant drop in HbA_{1c} in our subjects who entered the study in the lower HbA_{1c} stratum. A direct relationship between the pretreatment HbA_{1c} level and the absolute reduction in HbA_{1c} is well known [2] and is consistent with our explanation that Pancreas Tonic may have only a mild effect on glycemia. Dr Ehrenkranz does not present any plausible or evidence-based explanation as to why RBC toxicity should exclusively affect RBCs that are more heavily glycated.

The literature sources quoted by Dr Ehrenkranz appear to contradict his own arguments. The (−)epicatechin extract of *Pterocarpus marsupium* was shown in the papers that he quotes (mistakenly indicated as references to *Momordica charantia*) to have no effect on hemolysis [3] or even a protective effect on erythrocyte osmotic fragility [4]. Although Suboh et al [5] found that *Trigonella foenum graecum* increased lipid peroxidation, they saw no concurrent effect on erythrocyte deformability that would be expected to result from oxidant stress. Perez et al [6], in studying *Ficus carica* (instead of the *Ficus racemosa* found in Pancreas Tonic), proposed that their extract normalized rather than worsened the pro-oxidant state of diabetes. The animal study of Kar et al [7] with *Aegle marmelose* (mistakenly indicated as a reference to *Azardirachta indica*) demonstrated a reduction in hepatic lipid peroxidation, increased hepatic antioxidant levels, and no mention of any effects on erythrocytes. We do not know the exact mechanism of HbA_{1c} lowering shown in our study, but the hypothesis proposed by Dr Ehrenkranz is clearly not supported by his own literature citations.

Furthermore, hepatotoxicity to an unstated dose of any substance in animals [8] does not necessarily equal hepatotoxicity in humans. We cannot discount the potential for long-term hepatotoxicity of Pancreas Tonic in humans, but within the scope of our 3-month study, no transaminase elevations were seen. As to the Dietary Supplement Health and Education Act regulations, we must point out that our study was intended to establish the metabolic effects of Pancreas Tonic. We have no interest in marketing Pancreas Tonic; whether any disease-related claims are used for marketing purposes is strictly up to the study sponsor who was not involved in establishing the study protocol, conducting the study, writing the manuscript, or even seeing it before submission for publication. In our paper, we stated our reasons why the secondary outcomes were inconclusive. Our findings are consistent with a mild glucose-lowering effect of Pancreas Tonic in poorly controlled patients with type 2 diabetes mellitus (but not in those under better control).

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